



ISLAMIC FINANCIAL SERVICES BOARD

EXPOSURE DRAFT

**REVISED STANDARD ON SOLVENCY REQUIREMENTS FOR
TAKĀFUL/RETAKĀFUL UNDERTAKINGS (RSRTRU)**

Kuala Lumpur, Malaysia

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ABBREVIATIONS

AAOIFI	Accounting and Auditing Organization for Islamic Financial Institutions
CPIFR	Core Principles for Islamic Finance Regulation
IAIS	International Association of Insurance Supervisors
ICP	Insurance Core Principles
ICS	Insurance Capital Standard
IFRS	International Financial Reporting Standard
IFSB	Islamic Financial Services Board
MCR	Minimum Capital Requirement
MOCE	Margin Over Current Estimate
ORSA	Own Risk and Solvency Assessment
PCR	Prescribed Capital Requirement
PIF	Participants' Investment Fund
PRF	Participants' Risk Fund
RSA	Regulatory and Supervisory Authority
RTU	<i>Retakāful</i> Undertaking
TCP	<i>Takāful</i> Core Principle
TU	<i>Takāful</i> Undertaking
TVaR	Tail Value at Risk
VaR	Value at Risk

SECTION 1: INTRODUCTION

1.1 Background

1. The Islamic Financial Services Board (IFSB) issued its Standard on Solvency Requirements for *Takāful* (Islamic Insurance) Undertakings (IFSB-11) in December 2010. IFSB-11 sets out key principles relating to solvency requirements for *takāful* undertakings (TUs).¹ The standard complemented the International Association of Insurance Supervisors' (IAIS) then materials on solvency standards and assessment, with necessary adaptations to address the specificities of a TU.² Consistent with its articles of agreement, the IFSB adopted this approach in order to ensure that the supervision of the *takāful* sector is established on sound regulatory principles which are consistent with, and no less robust than, those established for conventional insurance. The present standard shares this aim.
2. Since the issuance of IFSB-11 in 2010, global regulatory and accounting standards have developed further. In particular, the IAIS Insurance Core Principles (ICPs) have been further developed and revised, most comprehensively in 2011, but also more recently in 2019; the IAIS has also developed an Insurance Capital Standard (ICS) for internationally active insurance groups, adopted in 2019 and currently in a monitoring phase prior to full implementation. While the ICS is designed only for the largest insurance groups, it is based on the principles of the ICPs, which are relevant to the development of solvency standards for individual undertakings. Solvency requirements in numerous jurisdictions have been enhanced, to provide more risk-based capital adequacy supervision based on market-consistent valuation requirements. In the field of general purpose financial accounting, as well as revision of requirements for recognition and measurement of financial instruments, the International Accounting Standards Board has issued International Financial Reporting Standard (IFRS) 17 on insurance contracts, scheduled for implementation in 2023; this standard provides a measurement basis for obligations under contracts within its scope, for which there had not previously been a common measurement standard. IFRS standards are now widely (though not universally) adopted as a basis for national accounting frameworks.³ In addition, the Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI) is currently revising its accounting standards for *takāful*, including presentation and disclosure (having issued an Exposure Draft on this topic, F1/2020 v13.0, in December 2020) and recognition and measurement (Exposure Draft F2/2021 v8.0, issued in August 2021).
3. The existing IFSB-11 provided that the IFSB would monitor new developments, and make any necessary revisions to the standard whenever it is appropriate to do so. In view of developments in supervisory practice regarding solvency, including on valuation, classification of capital resources and setting of capital requirements, the IFSB has concluded that revision is appropriate at this time. Accordingly, the Council of the IFSB, in its 35th meeting held in Dhaka, Bangladesh, on 14 December 2019, approved the revision of IFSB-11 and the formation of the Revised Standard on Solvency Requirement for Takaful Undertakings Working Group (RSSRTUWG). The RSSRTUWG is mandated to prepare a revised Standard on Solvency

¹ As in other IFSB standards, the term "*takāful* undertaking" is used in this standard to refer to the whole of the enterprise carrying on the *takaful* business, comprising typically the *takaful* operator and the funds managed by it, whether or not the enterprise is contained within a single legal entity.

² The IAIS had issued standards and guidance papers, since superseded, to assist supervisors in establishing and maintaining solvency frameworks.

³ Though not necessarily as a valuation basis for regulatory capital purposes, reflecting the different objectives of general purpose financial reporting and solvency valuation.

Requirements for *Takāful/Retakāful* Undertakings (“the revised IFSB-11”) to provide guidance to supervisory authorities for the *takāful* sector.

4. The IFSB is currently developing the Core Principles for Islamic Finance Regulation (*Takāful*) (CPIFR – *Takāful*), closely aligned to the text of the IAIS ICPs. The revised IFSB-11 also follows a similar structure to that of the relevant ICPs, with the aim of pursuing consistency of outcome in the solvency framework for TUs with the framework applicable to conventional insurance, while bearing in mind features that distinguish *takāful* from conventional insurance. This approach provides practical advantages to those supervisors (the majority of *takāful* supervisors) that are required to supervise both conventional insurance and *takāful*.

1.2 Objectives

5. The main objectives of this standard are as follows:
 - i. to protect the interests of *takāful* participants⁴ by setting a high probability that a TU would be able to meet all its contractual obligations and commitments;
 - ii. to encourage early warning systems permitting proportionate supervisory intervention and corrective action, and avoiding procyclical effects; and
 - iii. to foster confidence among the general public – in particular, *takāful* participants – in the financial stability of the *takāful* sector.

1.3 Specificities of *Takāful* (Islamic Insurance)

6. *Takāful* is a form of financial protection, sometimes described as “Islamic insurance”, whose contracts and operations are expected to be in compliance with Sharī’ah rules and principles. The expectation of Sharī’ah compliance leads to certain features specific to *takāful*, relevant to issues of solvency. Specificities of *takāful* business include, or may include, the following:
 - i. *Tabarru’* commitment, a type of Islamic financial transaction used in *takāful* schemes, is the amount contributed by each *takāful* participant to fulfil obligations of mutual help and to pay claims submitted by eligible claimants.
 - ii. Under the concept of *ta’awun*, or mutual assistance to the operation of *takāful*, participants agree to compensate each other mutually for the losses arising from specified risks.⁵ As the indemnification commitment under *takāful* is cooperative or mutual, its primary objective is not to gain profit but to provide mutual assistance. In this way, speculative risk (*maisir*), which is prohibited under Islam, is avoided and any uncertainty inherent in the contractual arrangement (*ghārar*) is rendered acceptable.
 - iii. There is a need, arising from the distinctive rights and obligations of the *takāful* operator (TO) as manager of the TU and of the *takāful* participants, to maintain segregated funds. This is frequently observed in practice, and is mandatory in some jurisdictions, and operates typically as follows:
 - a. One fund holds the shareholders’ equity of the TO (sometimes referred to as the shareholders’ fund, or SHF), to which administrative and other operational transactions are attributed; and

⁴ The term “policyholder” is also widely used in *takāful*, but this standard, consistently with the CPIFR – *Takāful*, uses the term “*takāful* participant” to mean the person holding the contract or otherwise entitled to its protection.

⁵ In practice, a *takāful* operator initiates the mutual agreement, enabling potential *takāful* participants to identify in the marketplace and to subscribe to *takāful* arrangements of the desired types, rather than having first to seek other like-minded persons with whom to form an agreement.

- b. one or more risk-bearing *takāful* funds,⁶ managed by the TO, receive the contributions of the *takāful* participants and investment income on those funds, out of which losses or other entitlements are paid; with
 - c. remuneration for managing the *takāful* business paid to the SHF according to the terms of the *takāful* contracts.
 - iv. *Takāful* funds are, in this case, attributable to the *takāful* participants collectively, and surpluses and deficits arising on mutual insurance activity are similarly attributable to them.
 - a. The disposition of surpluses is dealt with either in legislation, in the constitutional documents of the *takāful* undertaking, in the prudential policies of the TU or in the *takāful* contracts themselves. For example, surpluses may be retained within the fund to provide working capital, applied directly or indirectly to the benefit of the *takāful* participants, or applied to charitable purposes.⁷
 - b. Deficits arising on *takāful* activity may be covered by surpluses previously retained within the *takāful* fund. In the event that a *takāful* fund has insufficient resources to meet its *takāful* obligations, legislation, the constitutional documents or the contracts may provide for different mechanisms for meeting the deficiency.⁸ In order to provide a temporary financing facility, the TO may provide, out of the SHF, or procure from a third party, a *qard*,⁹ to be repaid out of future surpluses.
 - c. To the extent that a deficit is due to the negligence or misconduct of the operator, the operator is responsible for compensating the *takāful* fund.
 - v. A commitment is made to Shari'ah compliance in all activities.
- 7. Not all of these specificities are necessarily present in all forms of Islamic insurance. Neither are they necessarily absent from all forms of conventional insurance. For example, segregation of funds is practised in some jurisdictions, particularly for with-profits and investment-linked conventional life insurance and in the case of protected cell, segregated account and similar corporate forms, and reciprocal insurance exchanges exist that are managed by an attorney-in-fact for the benefit of policyholders who mutually insure each other. However, these specificities introduce additional dimensions to the risk profile of *takāful* operations, not necessarily foreseen in capital adequacy requirements designed primarily for conventional insurance operations.
- 8. In particular, the separate identification and attribution of funds, with limited or no fungibility between them, and cash flows between them of the nature of obligations, has implications for the development and application of capital adequacy requirements for TUs, and much of this standard focuses on those implications. In addition, the consequences of Shari'ah non-compliance may involve financial loss and difficulty in recovery.

⁶ These are sometimes referred to as participants' risk funds (PRFs), where insurance risk is borne on a *takaful* basis (typically, in general *takaful*), and participants' investment funds (PIFs), which bear investment risk (typically, in family *takaful*). Depending on the adopted structure or national requirements, funds may be segregated further – for example, with separate savings and investment funds in place of a single PIF.

⁷ The opinion of the IFSB Shari'ah board is, from the Shari'ah perspective, that the SHF should not receive any surplus of a *takaful* fund. This opinion is based on the resolution of the International Fiqh Academy.

⁸ On the principle that the funds are attributable to *takaful* participants, a deficiency might be met by calling additional contributions from *takaful* participants or reducing compensation due to them. However, such mechanisms may be impracticable or represent risks to the interests of beneficiaries that are unacceptable to policymakers, and in practice are likely to be limited either to very small operations offering limited entitlements or to very large and specialised operations (similar to reciprocal insurance exchanges and protection and indemnity clubs in the conventional insurance sector) attractive only to a limited constituency of highly sophisticated *takaful* participants.

⁹ Unless otherwise stated, *qard* in this standard represents *qard hasan* – that is, a loan without remuneration. The amount to be repaid on such *qard* is the principal amount advanced.

1.4 Scope, Approach and Application

9. The scope of this standard includes the determination of capital resources (including valuation and classification), and of capital adequacy requirements, for TUs.¹⁰
10. “Capital adequacy” may, for practical purposes, be understood as referring to the level of resources that a TU is required to maintain (where applicable, in respect of each segregated fund) in order to provide confidence that it can withstand unforeseen stresses. The term “solvency” is also often used to describe such requirements, and the two terms are widely treated as interchangeable. “Capital adequacy” and “capital resources” are generally used in the CIPFR – *Takāful* and in the ICPs, and this standard follows that convention.
11. This standard is expressed in terms of a typical TU model of a two-tier corporate model that could be described as a hybrid of a mutual and a proprietary company – the former aspect of the company representing the interests of the *takāful* participants and the latter aspect of the company acting as the TO. (See IFSB-8, paragraph 5, for a detailed discussion of this model.) However, this standard is applicable with appropriate modifications to other models of Islamic insurance.
12. The standard is applicable to both TUs and *retakāful* undertakings (RTUs), whether operating under general, family or composite licences.¹¹ It is applicable also, *mutatis mutandis*, to *takāful* “window” operations where such operations exist.
13. The standard is focused on the TU as a single undertaking, although section 3.6 provides guidance on group-wide supervision where a TU or *takāful* holding company is at the head of the group. It does not apply directly to non-*takāful* entities within a group containing a TU, but it does apply to TUs (and may be applied to groups containing TUs, where subject to group supervision) with regard to the risks posed to them by non-*takāful* entities.
14. Regulatory and supervisory authorities (RSAs) should consider proportionality in applying this standard by taking into consideration the nature, scale and complexity of TUs and the environment in which they operate. For example, jurisdictions may wish to apply the provisions of this standard in a modified manner to TUs providing *microtakāful* cover, to facilitate the provision of Sharī‘ah-compliant cover to the poor on an affordable basis. However, the application of proportionality should always be mindful of the ultimate goal of protecting financial stability and managing risk to *takāful* participants.

1.5 Structure of this Standard

15. The standard is divided into two sections, following this introductory Section 1:
 - Section 2 sets out guidance for supervisors on valuation of assets and liabilities, including recognition. The basis for recognition and valuation of assets and liabilities strongly influences the identification and assessment of capital resources for solvency purposes. The standard does not prescribe specific valuation requirements, but it promotes a consistent, economic valuation basis for assets and liabilities, including technical provisions.
 - Section 3 sets out guidance for supervisors on the identification and classification of capital resources for solvency purposes and the determination of regulatory capital requirements¹² against which to assess the adequacy of those capital resources. The

¹⁰ Supervisors should be aware that effective capital adequacy regulation also requires the presence of effective risk management. Risk management in *takaful* is dealt with in IFSB-14, and in *Takaful* Core Principle 16 (TCP 16), to both of which supervisors are referred. Public and private disclosure of solvency matters is dealt with in IFSB-25 and is not covered in this standard.

¹¹ In this standard, any reference to “*takaful*” is to be taken to include *retakaful* unless specified otherwise or the context requires.

¹² In this standard, the term “regulatory capital requirements” refers to financial requirements that are set by the supervisor and relates to the determination of amounts of capital that a TU or fund must have in addition to its technical provisions.

standard does not prescribe specific regulatory capital requirements, but it promotes a total balance sheet approach and regulatory capital requirements based on risk.

16. Each of Sections 2 and 3 commences by stating the *takāful* core principle on which it is based (TCP 14 and TCP 17, respectively). Within these sections, standards are presented in bold text. Guidance is presented in numbered narrative paragraphs. Sub-headings in the text are presented in italics.

1.6 Effective Date for Observance

17. To encourage consistency in observance of IFSB standards across jurisdictions, it is recommended that RSAs observe the standard in their jurisdictions effective from (date to be decided), taking into account an adequate preparatory period starting from the issuance date of this standard for the standard to be reflected in national regulations and guidelines and, where applicable, in supervisory practices. RSAs are encouraged to give effect to the standard earlier than this date where they are able to do so.
18. The level of observance of the standard in a particular jurisdiction may be dependent upon, and be without prejudice to, the general legal framework of that jurisdiction.

SECTION 2: VALUATION

Core principle: The supervisor establishes requirements for the valuation of assets and liabilities for solvency purposes.

Application

19. Although methodologies for calculating items in general purpose financial reports may be substantially consistent with the objectives of valuation for solvency purposes, this may not always be the case, considering the differing purposes of general purpose financial reporting and solvency determination.
20. To the extent that measurement methods of financial reporting standards, including IFRS, are consistent with this standard, supervisors may regard valuations that are in accordance with those financial reporting standards as being compliant with this standard.
21. The context and purpose of the valuation of assets or liabilities of a TU are key factors in determining the values that should be placed on them. This section considers the valuation requirements that should be met for the purpose of the solvency assessment of TUs within the context of risk-based solvency requirements that reflect a total balance sheet approach on an economic basis and address all reasonably foreseeable and relevant risks.
22. The supervisor requires a total balance sheet approach¹³ to be used in the assessment of solvency to recognise the interdependence between assets, liabilities, regulatory capital requirements and capital resources, and to require that risks are appropriately recognised. Such an approach ensures that the determination of available and required capital, including at the level of each segregated fund, is based on consistent assumptions for the recognition and valuation of assets and liabilities for solvency purposes.
23. To achieve consistency with this approach to setting capital adequacy requirements in the context of a total balance sheet approach, capital resources should broadly be regarded as the difference between assets and liabilities, but on the basis of their recognition and valuation for solvency purposes. This description applies also at the level of each fund (including, where relevant, the shareholders' fund) where segregation of funds is practised and capital adequacy is assessed at fund level.

Solvency purposes

24. The valuation "for solvency purposes" referred to in this standard is the valuation of the assets and liabilities used within the broad concept of a risk-based capital adequacy assessment of TUs.
25. Solvency assessment results from the application of supervisory judgment to various measures and estimates of a TU's current financial position and future financial condition which serve to demonstrate the TU's ability to meet its obligations to *takāful* participants or others with entitlements under *takāful* contracts when they fall due. A set of financial statements, which may differ from those used for general purpose financial reporting, may be useful in this regard. To distinguish them, this standard refers to the financial statements used for solvency assessment as "regulatory financial statements". Such statements include a regulatory balance sheet and regulatory capital requirements. For the purposes of this standard, "valuation for solvency purposes" refers to valuation of assets and liabilities in the regulatory financial statements. The overall solvency assessment may use information additional to the regulatory financial statements, such as:
 - stress and scenario testing;
 - the TO's own risk and solvency assessment (ORSA) for the TU; and

¹³ The total balance sheet approach is an overall concept rather than one which implies the use of a particular methodology such as a cost of capital method or a percentile method.

- relevant disclosure.
26. Technical provisions are a significant component of valuation for solvency purposes. They include a margin for risk appropriate for solvency purposes. Regulatory capital requirements are another component of the solvency assessment, and they include further allowance for risk so that, when taken together, they are sufficient to ensure that policy obligations are satisfied with the probability of sufficiency required by the supervisor.
 27. In adverse circumstances, certain assets may be considered to have reduced or nil value. Consequently, in the capital adequacy assessment, such assets may be excluded from or have reduced value in capital resources. Alternatively, a capital requirement may be set to cover the potential shortfall in value. Such adjustments are part of the process of determining capital requirements and/or capital resources and are covered in section 3.4 Identification and Assessment of Capital Resources for Solvency Purposes". These adjustments are shown separately from asset values in the regulatory financial statements. This enables improved transparency, consistency and comparability.

The valuation addresses recognition, derecognition and measurement of assets and liabilities.

28. Assets and liabilities should be recognised and derecognised to the extent necessary for risks to be appropriately recognised. Such recognition/derecognition principles may differ from those used for general purpose financial reporting in a jurisdiction.
29. Recognition of *takāful* contracts as part of the valuation of technical provisions is a significant issue for TUs and supervisors. There are two key possible points of recognition – on entering into a binding contract (the bound date) and the inception date of the contract. In principle, the bound date is the date at which an economic obligation arises. However, in practice, these dates are only likely to be significantly different for certain classes of general *takāful*.
30. Contracts for ceded *retakāful* should be recognised and valued so as to correspond to the recognition of the risks which they are mitigating. Where a current *retakāful* policy is contracted to cover future direct policies, the value of the *retakāful* policy should not include any amount in respect of future direct policies that have not been recognised.
31. A *takāful* contract liability (or a part of a *takāful* contract liability) within technical provisions should be derecognised when, and only when, it is extinguished – that is, when the obligation specified in the *takāful* contract is discharged or cancelled or expires.
32. The entering by a cedant into a *retakāful* arrangement should not result in the derecognition of technical provisions unless the entry into that arrangement results effectively in the extinguishment or novation of the *takāful* contracts. In the event that, in exceptional circumstances and with the approval of its Sharī'ah board, a cedant enters into a conventional reinsurance arrangement, that arrangement similarly does not result in derecognition of technical provisions unless the test of extinguishment or novation of the primary contracts is met.

The valuation of assets and liabilities is undertaken on consistent bases.

33. Solvency assessment based on consistent valuation of assets and liabilities is a prerequisite for obtaining a meaningful insight into the asset–liability positions of a TU and an understanding of the financial position of a TU relative to other TUs. It provides reliable information on which to base the actions that are taken by TOs and their supervisors in respect of those positions.
34. The overall financial position of a TU should be based on the consistent measurement of assets and liabilities, the explicit identification and consistent measurement of risks and their potential impact on all components of the balance sheet. This consistency should apply to all assets and

liabilities, including assets in excess of the liabilities, and extend across TUs and time periods so as to achieve comparability.

35. Undertaking valuation on consistent bases means that differences in values of assets and liabilities can be explained in terms of the differences in the nature of the cash flows, including their timing, amount and inherent uncertainty, rather than differences in methodology or assumptions. Such consistency may be applied at different levels, such as segment within a company, a company or a group.
36. Where segregation of funds in a TU is practised, each fund forms a segment within the TU. In addition, where capital resources within the SHF are earmarked for potential provision as *qard* to another fund, the assets earmarked also form a segment in this context.
37. Observed market valuations or amortised cost valuations may be used for some assets and liabilities, while valuation models, such as discounted cash flow models, may be used for other assets and liabilities. Calibration of such discounted cash flow models to market valuations or amortised cost of other assets and liabilities can be of assistance in achieving consistency.
38. The specific characteristics of *takāful* contracts, financial instruments and data available may vary within and across jurisdictions. Consistency in the valuation of assets and liabilities means that such variations can be explained in terms of the differences in the nature of the cash flows valued in each jurisdiction.
39. Regulatory capital requirements are determined using a consistent treatment of the valuation of assets and liabilities. Consistency in the valuation of assets and liabilities for solvency purposes does not necessarily mean that a single valuation basis is used for all assets and liabilities. The balance sheet, when taken together with capital requirements, should result in an appropriate recognition of risks.

The valuation of assets and liabilities is undertaken in a reliable, decision useful and transparent manner.

Reliability

40. The values placed on the assets and liabilities of a TU for solvency purposes should be a reliable measure of their value at the date of solvency assessment.
41. Objectivity is an important aspect of valuing assets and liabilities in a reliable manner, so that a valuation is not influenced inappropriately by a TO's management. The valuation of assets and liabilities typically involves judgment – for example, expert judgment in assessing the relevance of data and deriving assumptions. Consistent with reliability of outcome, subjectivity in valuation should be reduced as far as practicable. This may be achieved by using information available from effective internal control processes, market valuations, and other relevant current or factual information, by applying professional standards and subjecting valuations to independent review. The supervisor should require a valuation methodology which uses information provided by the financial markets and generally available data on *takāful* technical risks. Company-specific information may be appropriate, for example, where the TU's business model and practices are sufficiently substantiated as representative of the portfolio and similar information is used in market valuations.

Decision usefulness

42. In the context of this standard, "decision useful" means useful in making judgments for solvency purposes. It should be recognised that, in valuing assets and liabilities in a reliable manner, and in reducing the subjectivity in the valuation, it may not be appropriate to eliminate subjectivity completely. A method that provides a single value without the need for judgment may be less decision useful than one that produces a range of reasonable values from which a value is

selected by applying judgment. A method that produces a decision-useful outcome should take precedence over one that does not.

43. In some jurisdictions, enforcement actions can only be based on objective calculations. In those jurisdictions, an objective calculation should take precedence over one based on subjective assumptions and methods. Supervisors may need to provide greater specificity on assumptions (e.g. mortality and discount rates) and methods for regulatory purposes. Specified methodology should include a margin for risk that is appropriate for a valuation done for solvency purposes.
44. Decision-useful values may be derived from a range of sources, including market-consistent valuations, amortised cost valuations and other valuation models, such as discounted cash flow projection models.
45. Where there is a market for an asset or liability in which prices are quoted publicly and trades are readily available, the quoted prices could provide a decision-useful value of the asset or liability in the large majority of situations. Typically, there will be a range of market prices for the same item, and judgment will be needed in determining the final value.
46. In some circumstances, a market price may not necessarily provide a decision-useful basis for a valuation. If the reference market is dysfunctional or anomalous in its operation, a more reliable method of determining value based on more normal conditions may be appropriate. Such circumstances may occur, for example, if there is a high cost in making actual trades, trading is thin, independent pricing sources are not available or are limited, or the market is subject to distorting influences. The supervisor should evaluate such circumstances and, as a result, may conclude that the use of an alternative economic valuation is appropriate.
47. Amortised cost could be a decision-useful value for assets and liabilities where it is a reflection of the amount the TU will pay and receive over time, and fluctuations in market values are not indicative of the TU's ability to meet its obligations. Amortised cost may provide a pragmatic and decision-useful value when other valuation approaches are no more useful or reliable. It is useful to complement such valuations with sensitivity and adequacy testing.
48. A TO's modelling for the TU of its assets and liabilities may also provide a decision-useful value. The reliability of model results is enhanced through the use of TUs' and supervisors' best practices surrounding model governance, controls and independent review. Supervisory comparisons or benchmarking of modelling practices can further enhance the reliability of modelled results. Models can be used to apply common measurement criteria across all risks (e.g. same methodology, time horizon, risk measure, level of confidence, etc.).
49. The supervisor should evaluate the extent to which the time value and risk adjustments add decision-useful information. Where this is not the case, the disclosure requirements may be relied upon. For liabilities subject to significant litigation uncertainty, it may not be appropriate to include estimates of time value and risk in the reported liability, due to the unreliability of such adjustments.

Transparency

50. The solvency regime should be supported by appropriate public disclosure and additional confidential reporting to the supervisor. For example, explicit determination of the components of the technical provisions supports the objectives of transparency and comparability and facilitates convergence. For standards on public disclosure, including the valuation of assets and liabilities for solvency purposes, see IFSB-25: *Disclosures to Promote Transparency and Market Discipline for Takāful/Retakāful Undertakings*.
51. TOs should provide sufficient information about the approaches they have taken to the valuation of assets and liabilities, describing how the principles of reliability, decision usefulness and

consistency have been addressed. Transparency facilitates understanding and comparability within and across jurisdictions.

The valuation of assets and liabilities is an economic valuation.

52. An economic valuation is a valuation such that the resulting assessment of a TU's financial position (or of particular funds) is not obscured by hidden or inherent conservatism or optimism in the valuation. Such an approach is appropriate in the context of risk-based solvency requirements which satisfy this standard and share its objectives of transparency and comparability.
53. Where segregation of funds is practised, the requirement to value assets and liabilities extends also to balances between funds (e.g. *qard*).

An economic valuation of assets and liabilities reflects the risk-adjusted present values of their cash flows.

54. An economic value should reflect the prospective valuation of the future cash flows of the asset or liability allowing for the riskiness of those cash flows and for time preference. An asset or a liability may have both cash inflows and cash outflows, the net effect of which is a positive or negative value. Such a valuation is not necessarily determined directly using a discounted cash flow calculation. A current quoted market value or a current sale or purchase value may also reflect the prospective valuation of cash flows.
55. Supervisors should take into account all relevant information available about current market assessments of value and risk and the principles, methodologies and parameters used in the relevant markets for assessing the value of an asset or liability.
56. The historic cost of an asset or liability may not reflect a current prospective valuation of the future cash flows and may therefore not be consistent with the current economic valuation of other assets or liabilities. Historic cost generally does not reflect changes in value over time. However, amortised cost, which adjusts the historic cost of an asset or liability over time, may reliably reflect the value of future cash flows, when used in conjunction with an adequacy or impairment test.
57. Some jurisdictions utilise a subset of economic valuation known as market-consistent valuation, which is described further in paragraphs 58 to 64. Some jurisdictions use a subset of economic valuation known as amortised cost valuation, which is described further in paragraphs 65 to 71.

Market-consistent valuation

58. It may be appropriate to use market-consistent values for the economic valuation of assets and liabilities. A valuation that is based upon principles, methodologies and parameters that the financial markets would expect to be used is termed a market-consistent valuation. Where a range of assessments and approaches is evident from a market, a market-consistent valuation is one that falls within this range.
59. It may be well known to financial markets that the approach taken to market assessments for some assets and some *takāful* liabilities or their components uses modelling based on certain assumptions and techniques and portfolio-specific information, as well as generally available data on *takāful* technical risks. A calculation consistent with this approach would be market-consistent.
60. However, in exceptional circumstances there may be information additional to that on market assessments from the wider economy that should be taken into account – for example, where a market is anomalous, or is not operating effectively or is subject to intervention from the relevant authorities, such as where a government/regulator intervenes in a major way (e.g. by injecting money or taking control). Such action may be in response to or the cause of distortions of supply

and demand in relevant markets so that values determined in a market-consistent way may also be distorted temporarily.

61. A market-consistent value may not then be appropriate, and a different value, which may, for example, be expected to be market-consistent under more normal market conditions, may need to be determined to arrive at an economic valuation for solvency purposes. The extent to which this is appropriate is likely to vary according to market conditions in different jurisdictions. If such circumstances arise, supervisors should provide guidance as to the appropriate values or adjustments which TOs should use for solvency purposes to reflect the risk-adjusted present value of their cash flows and maintain consistency, decision usefulness, relevance and transparency.
62. A sufficiently active market may exist for an asset or a liability that in itself provides a measure of value that is market consistent. For other assets and liabilities, or when the market becomes illiquid, there may be no direct measure of value. However, relevant market information may be available regarding the assessment of components of the rights, obligations or risks of the asset or liability. If, for example, a component of the obligations of a *takāful* liability can be replicated using financial instruments for which there is a reliable market value, that value provides a reliable indication of the value for this component.
63. The market-consistent value of an asset or a liability may be determined using different techniques, or a combination thereof. For example, in valuing technical provisions:
 - i. If the *takāful* obligations are traded in a sufficiently deep and liquid market, the observed prices may be used to arrive at a market-consistent value. The availability, decision usefulness and reliability of the prices should be taken into account when deriving the market-consistent value.
 - ii. If some or all of the cash flows associated with the *takāful* obligations can be replicated using financial instruments, the market value of the replicating financial instruments may be used as the value of those cash flows.
 - iii. If the cash flows associated with the *takāful* obligations cannot be replicated perfectly, then the remaining cash flows may be valued using a discounted cash flow model. To be market consistent, the methodology used needs to deliver a proxy for market value based on market-consistent valuation principles and to reflect the uncertainty or unavailability of market information.
64. This approach to valuation is sometimes termed the “components approach”, under which risk components are valued at market value where such a value is ascertainable, decision useful and reliable; other components may need to be valued using marked-to-model methods. Separate components may, for example, be identifiable for *takāful* contracts which have an investment or deposit component and a *takāful* risk component. The components approach helps to improve market consistency and reduce modelling error. It should be noted that where there is no sufficiently deep liquid market from which to determine a market-consistent value for a risk component, the additional liquidity risk needs to be considered.

Amortised cost valuation

65. It may be appropriate to use an amortised cost method for economic valuation of assets and liabilities. Amortised cost methods determine the value of an asset or a liability at any point in time as the present value of future cash flows discounted at an appropriate discount rate, with an appropriate adjustment for risk.
66. Amortised cost may, however, be inappropriate as a method of valuation for some fixed-income assets that are invested in by TUs. The reliability of amortised cost as an economic valuation method is influenced by the degree of certainty of future cash flows. Because of the avoidance of *riba* in assets of TUs, future cash flows, particularly those on maturity, may not be certain.

Similarly, avoidance of *riba* in contracts makes it less likely that TUs will have borrowings whose value should be determined on an amortised cost basis.

67. Where segregation of funds in a TU is practised, amortised cost may also be unsuitable as a method of valuation for balances between funds of a TU. For example, a *qarḍ* extended by the shareholders' fund to a *takāful* fund represents an asset of the SHF and a liability of the *takāful* fund. An amortised cost valuation of the asset that is based on cash flows arising from future surplus to be generated within the same TU would need to be based on realistic expectations of recovery, rather than assuming that such a surplus would arise. That valuation would reflect the perceived ability of the fund to repay the *qarḍ*. The valuation of the *qarḍ* liability in the fund, on the other hand, could not take into account that the fund's ability to repay may have deteriorated since it assumed the liability (see paragraphs 74 to 75).¹⁴
68. Supervisors may therefore decide to approach this method of valuation with caution, for solvency purposes in *takāful*.
69. The discount rate used in valuing assets under an amortised cost method equates the present value of expected contractual cash flows with the amount paid to acquire the asset. The price paid for an asset usually equals the market value at the time of purchase. Since the price paid reflects the risk of the instrument at the time of purchase, an adjustment for the risk assessed at that time is automatically included in the discount rate.
70. When valuing both assets and liabilities under an amortised cost method, there is a close relationship between the discount rate and the provision for risk. The discount rate used may be based on the expected yield, after making allowance for default, of the supporting asset portfolio. Other combinations of discount rate and risk adjustment are possible.
71. When an amortised cost method is used, the values produced should be evaluated for adequacy at least annually. For assets, when the asset has been impaired to a significant degree, the carrying value of that asset should be adjusted to reflect that impairment. For liabilities, the value should be tested at least annually. When the liability value is found to be inadequate, it should be strengthened. Adjustments should also be made to reduce any significant, undue conservatism identified by the adequacy test.

The value of technical provisions and other liabilities does not reflect the TU's own credit standing.

72. To achieve consistent and reliable economic values of *takāful* portfolios for solvency purposes, the value of technical provisions should not reflect a TU's own credit standing. *Takāful* obligations are required to be met to the same level of confidence by all TUs in a jurisdiction and the value of an identical portfolio held by different TUs should not depend on the TU's credit standing. This also applies to the technical provisions of a *retakāful* provider.
73. However, the credit standing of a *retakāful* provider should be taken into account when considering the solvency of a cedant even if the contractual cash flows are the same. The risk of *retakāful* default could be covered either by the regulatory capital requirements or adjustments made to the value of assets in determining available capital. Alternatively, some allowance for the credit default risk could be made in valuing the *retakāful* asset directly.
74. The valuation of liabilities, other than technical provisions, should also not reflect the TU's own credit standing. This applies also to balances between funds; changes in the credit standing of a fund due, for example, to persistent deficits should not affect the valuation at which *qarḍ* is

¹⁴ Valuation should be distinguished from write-off. A decision by the TO to write down the value of the asset in the SHF does not affect the existence of the asset in the SHF or the liability in the *takāful* fund. However, a decision to write it off irrevocably in the SHF extinguishes the asset and the liability, to the extent of the write-off.

held as a liability in the *takāful* fund, though they would be relevant to the valuation of the corresponding asset in the SHF.

75. Where the terms of the debt make it subordinate to the TU's obligations in respect of *takāful* contracts, the value of the debt may reflect the lower probability of repayment under subordinated debt and the lower capital needed to cover the risk of non-payment. Where segregation of funds is practised, this guidance applies where appropriate to *qarḍ* balances between segregated funds.

The valuation of technical provisions exceeds the current estimate by a margin (margin over the current estimate, or MOCE).

76. Technical provisions are assets or liabilities that represent the economic value of the TU fulfilling its *takāful* obligations to *takāful* participants and other beneficiaries arising over the lifetime of the TU's portfolio of *takāful* policies. This includes a margin (margin over the current estimate, or MOCE) to cover the inherent uncertainty of those obligations.
77. The cash flows associated with fulfilling a TU's *takāful* obligations include the premiums/contributions receivable, the claims payable under the *takāful* policies, any other policy cash flows and the future expenses of administering the policies. They do not, however, include distributions of surplus from a segregated fund, unless such distributions are a contractual entitlement of the *takāful* participants and a present obligation of the TU, incapable of cancellation. Accumulations of such surplus in funds, notwithstanding that surplus is attributable to the *takāful* participants, represents capital of the fund rather than contractual cash flow under the *takāful* participants, until such time that its distribution (or application in some other way that would prevent it from absorbing losses) becomes foreseeable.
78. Where the SHF is entitled to receive surplus from a *takāful* fund (that is not in repayment of a *qarḍ* liability), the supervisor should consider whether such payments from the fund are associated with fulfilling the TU's *takāful* obligations. Payments that are obligatory and for which the necessary conditions have been met for them to be paid should be recognised as technical provisions or creditors of the *takāful* fund to the extent that those amounts are no longer able to absorb losses of the fund in question. However, amounts for which the necessary conditions have not been met for them to be paid to the SHF and which can absorb losses in the fund are, similarly to accumulated surplus attributable to *takāful* participants, capable of recognition as capital resources of the fund, until such time as the payment becomes foreseeable.
79. Where segregation of funds is practised, these future cash flows may emerge in different funds. In particular, expenses of administering the *takāful* contracts may arise in the SHF, for which the SHF has already been remunerated in the form of a *wakālah* fee. Technical provisions are valued separately for each fund, including the SHF, on a consistent basis. Cash flows between funds should also be taken into account in valuing technical provisions of a fund – for example, any *wakālah* fee to be paid by a *takāful* fund to the SHF, or any expenses recharged by the SHF to a *takāful* fund, so far as these cash flows fall within the boundary of in-force *takāful* contracts. Such interdependent cash flows should be treated consistently, reflecting that they are internal to the legal entity. A cash flow between two segments of the same legal entity should not create a positive valuation difference in the entity as a whole. This means that, if one segment records an amount as due to another segment at a particular figure, the amount due recorded in the other segment must not be higher (although it could be lower).
80. Acquisition costs are usually a significant component of a TU's cash flows. After acquisition costs have been paid, future cash inflows may exceed future cash outflows.
81. Because a TU's obligations under a *takāful* policy are inherently uncertain as to amount and/or timing, the present value of the cash flows associated with fulfilling them has a range of possible values with varying probabilities. The probability-weighted average of these present values is

their expected present value (also called the “statistical mean”) and is termed the “current estimate of the cost of meeting the *takāful* obligations” (“current estimate”). Actuarial and statistical techniques may be used in determining the current estimate, including deterministic, analytical and simulation techniques.

82. In addition to covering the cash flows associated with fulfilling *takāful* obligations, a TU incurs the cost of covering the uncertainty inherent in those cash flows (e.g. through holding capital, or through hedging, *retakāful* or other forms of risk mitigation). TUs are required to maintain an amount such that the obligations under *takāful* policies will be fulfilled with the claimant or beneficiary when they fall due. In principle, therefore, an economic value of the technical provisions exceeds the current estimate of the cost of meeting the *takāful* obligations by an amount covering this uncertainty. This excess is the MOCE. Where fund segregation is practised, the MOCE forms a part of the technical provisions in the fund responsible for fulfilling *takāful* obligations.
83. Where, for example, capital is required to give the level of confidence required by the solvency regime, the technical provisions should at least also cover the cost of holding that capital. In these circumstances, the MOCE might be seen as a provision for rewarding the capital committed to the business over the outstanding lifetime of the policy. As the uncertainty reduces over time, so the MOCE will also reduce, gradually releasing it from the technical provisions. Equally, as uncertainty reduces, the required capital would also reduce in line with the revised risk profile.
84. Where the current estimate and the MOCE are determined separately, determining these amounts at the level of each fund reflects the fact that capital is not fungible between the funds and must therefore be maintained at the necessary level in each fund. This may result in technical provisions that are higher than if the MOCE were determined for the TU as a whole.
85. It may not be necessary, in practice, to determine the current estimate and the MOCE separately. The solvency regime should require any method by which technical provisions are valued to be such that the value includes an explicit or implicit margin over the current estimate. For example, a reliable market valuation by reference to a sufficiently deep and liquid market may be expected automatically to include a MOCE.
86. A model which includes in its calculations an allowance for uncertainty up to the level of confidence required by the solvency regime is also capable of calculating the technical provisions directly. However, in this case, supervisors should consider whether the current estimate and the MOCE should be separately reported to help ensure that technical provisions are consistent and reliable.
87. A change in underlying data or assumptions generating a change in current estimate and MOCE should be disclosed and justified so that consistency, reliability and relevance may be maintained and arbitrary changes over time are avoided.

The current estimate reflects the expected present value of all relevant future cash flows that arise in fulfilling insurance obligations, using unbiased, current assumptions.

88. The current estimate should reflect all future cash flows under an existing *takāful* contract to the extent that they are integral to the fulfilment of the obligations under that contract. This encompasses all cash flows, including non-guaranteed optional or discretionary cash flows (e.g. an ex gratia but customary payment on family *takāful* on the happening of certain events such as examination achievements), where they are established as stemming from the contractual relationship between the *takāful* and the policyholder/participants. This reflects the commercial substance of the contract and, therefore, reflects economic reality. However, distributions of surplus to *takāful* participants, where this is practised, are (where that surplus is capable of absorbing losses) considered to be capital outflows rather than being cash flows under a *takāful* contract and so are brought to account only when foreseeable. Calls for additional contributions

(as opposed to contractual provisions allowing for retrospective adjustment of contributions on a contract to reflect experience on that contract) would similarly be capital inflows rather than contractual. This distinction is necessary in order to recognise the status of surplus as capital resources for solvency purposes, whereas indemnification of losses and future contractual contributions on an individual contract are properly reflected in technical provisions.

89. A *takāful* contract should, that apart, be considered as a whole. In particular, where the contract provides for the payment of future *takāful* contributions, such contributions are integral to the fulfilment of the obligations under that contract. Neither the TU nor the *takāful* participant is able to deal with one without simultaneously dealing with the other. To recognise one, the other must also be recognised. Valuation of the *takāful* liability requires consideration of all of the associated cash flows, including the contractual, contribution inflows. The uncertainty associated with those cash flows along with that of the other relevant cash flows are reflected in the probability weightings applied in calculating the current estimate.
90. Where segregation of funds is practised, it may be a permissible practice for *takāful* participants to make contributions to a savings account, from which they are transferred systematically as *takāful* contributions into the fund in which *takāful* risk is borne. In such cases, it will be necessary to consider the boundary of both the contract for risk coverage and the contract obliging the *takāful* participant to make deposits and to ensure that the risk fund recognises only those cash flows within the contract boundary, whether or not the contract boundary for the savings account is identical.
91. To give clarity as to what constitutes a *takāful* contract for solvency purposes, the supervisory regime should specify the boundaries for *takāful* contracts which define the relevant cash flows to be included in determining the current estimate. The *takāful* contracts are subject to the following boundary constraints, if they exist:¹⁵
- i. contractual termination as extended by any unilateral option available to the *takāful* participants; or
 - ii. the TO having a unilateral right to cancel or freely re-underwrite the policy; or
 - iii. both the TO and *takāful* participants being jointly involved in making a bilateral decision regarding continuation of the policy.
92. The first boundary constraint excludes new business arising from the “rolling over” of the existing contract, except where such “rollover” is due to the exercising of an explicit option available to the *takāful* participant under the current contract. Contractual cash flows arising from *takāful* participants’ unilateral in-the-money options to extend the contractual termination date should be included. The current estimate should allow for the expected rate of exercising such options. This boundary constraint also excludes additional voluntary contributions, except where provided for as a unilateral option under the contract. For *takāful* contracts with variable contributions (such as universal family *takāful* contracts), the cash flows should include voluntary contributions above the minimum required to the extent that there are guarantees, under the current contract – for example, no-lapse and contribution rate guarantees. The current estimate should reflect the expected rate of payment of additional contributions and the expected level of such contributions.
93. The second boundary constraint clarifies that future cash flows arising from events beyond the point where the TO can unilaterally cancel the contract – for example, by re-underwriting – are not included in the valuation. This is the case with most general *takāful* contracts, which are typically written for only one year. Although there might be a high expectation that they would be renewed, the TO is not bound to do so; accordingly, only cash flows arising in respect of contracts that are currently in-force or in run-off are included for valuation purposes, whereas the impact of new business might be considered in capital requirements or capital resources by

¹⁵ For certain types of long-duration family *takāful* policy, these would be evaluated through the potential life of the participants, allowing for lapse or surrender in the probabilities attached to each cash flow.

the solvency regime. By contrast, future cash flows under a family *takāful* or disability contract which the TO cannot unilaterally cancel should be included, even if the future contributions under such a contract are planned to increase, or are able to be varied by the TO in respect of the entire class of contracts without individual underwriting.

94. The third boundary constraint clarifies that even if the *takāful* participant has an option to continue or increase the contract, if it requires the TO's consent then cash flows arising from events beyond that point should not be included for valuation purposes, whereas the impact of new business might be considered in capital requirements or capital resources by the solvency regime.

Discretionary payments

95. Discretionary payments, although familiar in some types of conventional insurance, are not typically a feature of *takāful*. When establishing the future cash flows to include in the determination of technical provisions for solvency purposes, consideration should nonetheless be given to all payments whether or not these payments are contractually required.
96. In many jurisdictions, accumulated surplus attributable to a class of *takāful* participants is accounted for separately by the TU. Where such accumulated surplus can be used to absorb losses to protect *takāful* participant interests in a period of stress, it may possess all the characteristics of capital and may hence be recognised in the determination of capital resources for solvency purposes. In such a case, it is important to ensure that the criteria established by the solvency regime for the allowance of future discretionary benefits in the valuation of technical provisions are compatible with the criteria for determining capital resources in order to achieve a consistent overall assessment of the solvency position of the TU.
97. Capital adequacy is determined on a forward-looking basis. When capital adequacy is being determined, it may be foreseeable that amounts that have been recognised as surplus will in fact be paid out in the near future rather than being retained in the TU as capital (e.g. if it is already expected that they will be distributed to *takāful* participants, or applied for charitable purposes). Where this is the case, the amount of the foreseeable payment should be excluded from eligible capital resources for solvency purposes (if it has not already been taken into account in the determination of technical provisions or recognised as an "other liability" for regulatory purposes). Similarly, any amount to be paid out (but not yet paid) in purification of income determined to be tainted should be excluded from capital resources, either by recognising it as a liability for regulatory purposes or by deducting it from capital resources once they have been initially determined.

Unbiased current assumptions

98. Unbiased current assumptions are derived from a combination of relevant, credible experience as well as judgment about its expected future development – for example, improving mortality rates or inflation of expenses – that neither deliberately overstates nor understates the expected outcome. Reconsideration of data and assumptions should occur every time the technical provisions are valued, with revisions made as appropriate to ensure that data and assumptions remain appropriate to current conditions.
99. Observable data, such as discount rates, financial market prices and inflation rates, may be expected to be different each time the current estimate is determined. In particular, cash flows are sensitive to inflation rates. Where assumptions are derived from observed values in the market, these should be the observed values current at the date of the valuation.
100. Regular experience analysis, considering the individual entity and relevant industry experience where appropriate, should be undertaken to support the assumptions used for *takāful* technical risks. Where assumptions depend on the results of such experience analyses, the most recent experience for the portfolio need not necessarily represent the most credible current assumption

for that portfolio. Greater credibility may be achieved by the analysis of several years' experience, smoothing out fluctuations in experience and allowing appropriately for any trends in experience that may be evident. However, care should also be taken that historical experience remains relevant to current conditions.

101. Where the credibility of a TU's own experience is low – for example, for a small or new portfolio of *takāful* contracts – assumptions based on the relevant industry experience are likely to be more decision useful as a basis for projecting its cash flows.
102. The assumptions used should, in principle, reflect the characteristics of the portfolio, rather than those of the particular TU holding that portfolio. However, it is important to note that, in practice, the characteristics of the portfolio underwritten by a TU may reflect aspects of a TO's specific business practices, particularly with regard to its underwriting, claims handling and expenses. Company-specific information may be appropriate – for example, where the TU's or TO's business model and practices are sufficiently substantiated as representative of the portfolio and similar information is used in market valuations.
103. With respect to expenses, the TU's own expense experience in managing a portfolio is likely to be relevant in determining an economic value. Expense experience should be considered in both the *takāful* funds and the SHF. Where the SHF bears the expense risk, that fund should recognise appropriate technical provisions for future outflows associated with the settlement of claims or administration of policies in force.
104. Acquisition costs are typically a major component of a TU's expenses. For most *takāful* contracts, acquisition costs will already have been incurred so that future cash flows include only maintenance and claims costs. An appropriate analysis of the TU's expense experience is needed to separate out acquisition costs in order to model future expenses. Care is needed to allow for expenses that do not vary directly with the level of new business so that expenses that will continue to be incurred for a period if a new business ceases are taken into account.

The MOCE reflects the inherent uncertainty related to all relevant future cash flows that arise in fulfilling *takāful* obligations over the full-time horizon thereof.

105. Different methods may be used in practice to measure risk. For some risks, observable market prices for risk may be available. In choosing a methodology, due consideration should be given to the nature of the risks being measured. Other approaches being considered around the world include quantile, conditional tail expectation, cost of capital and explicit assumption methods. Where a mixture of appropriate methods is used, a consistency check should be considered. Calibration of the methods used should reduce the effect of methodological differences to a level sufficient to enable reliable solvency assessment to be undertaken. At present, there is no one common methodology. In practice, the results from different methods will not be identical, and calibration and consistency checks should be applied so that methodological differences are reduced to an acceptable level for solvency assessment purposes. Once established, the methodology should not be changed from one valuation to the next unless there is a reasonable rationale for change.
106. The margin over current estimate represents an estimated measure of the uncertainty inherent in the cash flows associated with fulfilling a TU's obligations under *takāful* contracts it has entered into. To achieve a consistent, reliable and decision-useful valuation, the MOCE should consider all of the inherent uncertainty attached to the policy obligations over the full period of those obligations – that is, the variability of all relevant future cash flows to the extent to which this uncertainty is borne by the TU (whether the collective *takāful* fund, or the SHF) and not the *takāful* participant.

107. Only risk inherent to the policy obligations should be reflected in the MOCE. Other risks should be reflected in regulatory capital requirements. Where risks are reflected in both the MOCE and regulatory capital requirements to provide an overall level of safety, double counting should be avoided as far as practical.
108. In some jurisdictions it may be considered appropriate, due to inherent uncertainty in policy obligations and surplus (or, in the case of the SHF, profit), that no component of *takāful* contribution related to such considerations should be recognised in surplus (or profit) at the inception of a contract. In those jurisdictions, the inherent uncertainty is effectively represented by the difference between *takāful* contribution received and the current estimate. Other jurisdictions may take the view that one of the other methodologies described in this document provides a decision-useful separate estimate of the level of uncertainty in determining the MOCE and may therefore allow potential gain at issue to be recognised.
109. It is important to be clear about which risk factors should be reflected when valuing the MOCE, and to what extent. It is appropriate to differentiate between the risks specific to the portfolio of *takāful* obligations and the risks associated with the operations of the particular TU. Risks that are portfolio specific are inherent to the policy obligations and should be taken into account in the MOCE.
110. In determining the appropriate methodology for determining the MOCE in a solvency regime, the supervisor should consider the extent to which possible methodologies promote transparency and comparability between TUs and *takāful* markets.
111. An appropriate method for the determination of the MOCE would be expected to exhibit the following characteristics:
- Takāful obligations with similar risk profiles have similar MOCEs.
 - The less that is known about the cash flows, the higher the MOCE.
 - For the same level of probability, risks with higher impact have higher MOCEs than those with lower impact.
 - Risks with low frequency and high severity will generally have higher MOCEs than risks with high frequency and low severity.
 - For risks of the same or a similar nature, contracts that persist over a longer time frame will have higher MOCEs than those of shorter duration.
 - Risks with a wide probability distribution have higher MOCEs than those risks with a narrower distribution.
 - To the extent that emerging experience reduces uncertainty, MOCEs should decrease, and vice versa.
112. In establishing appropriate criteria or methods for determining the MOCE, the supervisor should consider the diversification of the inherent risk factors reflected in the MOCE.
113. Consideration should be given to the segmentation of the *takāful* policies of the TU into separate portfolios and the impact this has on the diversification of inherent risk factors that is taken into account. Segmentation – for example, by line of business – may be undertaken for calculation purposes and may mean that diversification within portfolios is taken into account in the MOCE but diversification across portfolios is left out of account. The calculation method may also mean that diversification within portfolios is only partially taken into account. Any residual diversification within portfolios and all diversification across portfolios could, for example, be addressed as an offset to regulatory capital requirements, if appropriate. The MOCEs for the total business of the TU would simply be the sum of the MOCEs of its portfolios.
114. Where an element of a *takāful* liability – that is, a *takāful* obligation or risk in whole or in part – can be replicated or covered by a financial instrument which has a reliable value, the value of that instrument provides a reliable value for that element of the liability, including an implicit

MOCE. In practice, there are often some differences between the *takāful* cash flows and those of the replicating instrument which need to be valued separately. Where a model is used for this valuation, calibration of the model to the value of the covering instrument used is likely to assist in achieving overall consistency and reliability. Such practice should be encouraged by supervisors.

The valuation of technical provisions allows for time preference. The supervisor establishes criteria for the determination of appropriate rates to be used in the discounting of technical provisions.

115. The solvency regime allows for time preference to be recognised in the determination of technical provisions and should establish criteria for the determination of appropriate discount rates to be used in the discounting of technical provisions. In developing these criteria, the supervisor should consider the following:
- the economics of the *takāful* obligations in its jurisdiction, including their nature, structure and term; and
 - the extent (if any) to which entitlements under *takāful* contracts are dependent on underlying assets.
116. The criteria for determining appropriate discount rates to be used in the discounting of technical provisions should recognise that the appropriate discount rates may not be directly observable and apply adjustments based on observable economic and market data of a general nature as appropriate.
117. To the extent that a risk is provided for elsewhere in the balance sheet by alternative means, there should be no allowance for that risk in the chosen discount rates.
118. As the discount rates should reflect the economics of the *takāful* obligations, any observed yield curve should be adjusted to account for differences between the economics of the observed instrument and those of the *takāful* obligations.
119. The criteria should also allow appropriate interpolation and extrapolation for non-observable market data and maturities. To provide for consistent, reliable, economic values, the criteria for discount rates should utilise the entire term structure for time preference.
120. In principle, if an investment has a reliable market value and fully replicates or covers an element of the *takāful* obligations or risks, such a value is presumed to reflect time preference.

The supervisor requires the valuation of technical provisions to make appropriate allowance for embedded options and other features.

121. The determination of the current estimate and MOCE should make explicit allowance for any options of the policyholders/participants or TO and for any other features for the benefit of the *takāful* participant that are embedded in the *takāful* contract, such as mutually guaranteed minimum entitlements and earnings. The method used to value embedded options and other features should be appropriate to the nature, scale and complexity of risk and may include stochastic simulation or simplified methods as appropriate.
122. An important option for *takāful* participants is the option to lapse and, for some family *takāful* products, to receive payment of a surrender value. Explicit allowance for lapses and surrenders should be incorporated in the projections of future cash flows that are used to determine technical provisions. The risks of lapse and surrender need to be considered over the full time horizon of the *takāful* contract. Historical experience of lapses and surrenders is decision useful in considering the setting of assumptions about future experience used for calculating a current estimate and MOCE. The uncertainty associated with lapses and surrender may not be fully

diversifiable across *takāful* contracts as the level of lapses and surrenders may depend on economic conditions or perceptions about the performance of the TU which apply generally to *takāful* participants. This is offset by variations in *takāful* participants' responses to such conditions or perceptions and their personal motivation for lapse and surrender. Such factors should be taken into account when assessing the risk of lapse and surrender.

123. Technical provisions are not required to be subject to a surrender value floor equal to the total surrender values payable if all policies were to surrender immediately. Such an approach would not be an economic valuation as the effect of surrenders is already allowed for in the technical provisions by incorporating assumptions about the future rate of surrender and associated risks. However, in the determination of the overall financial requirements for solvency assessment purposes, a form of surrender value minimum may be considered appropriate, to provide additional protection in the event of a high level of surrenders. This should be reflected in regulatory capital requirements, as appropriate.

SECTION 3: REGULATORY CAPITAL REQUIREMENTS

Core principle: The supervisor establishes capital adequacy requirements for solvency purposes so that TUs can absorb significant unforeseen losses and to provide for degrees of supervisory intervention.

Introduction

124. The setting of regulatory capital requirements and their assessment against capital resources involves a number of discrete concepts and processes, not simply determining minimum requirements for capital resources, but also the identification of capital resources to meet those requirements, and their classification where they have qualitative differences.

125. The topic of internal capital models is dealt with briefly since, at the date of this standard, the use of such models to determine regulatory capital requirements (as opposed to their use for internal capital management purposes, which is encouraged) is very rare in the *takāful* sector.

126. Guidance on group solvency supervision is brought together in a separate subsection. Many TUs are members of groups, either carrying on only *takāful* or including both *takāful* and conventional insurance operations. For convenience, such groups are referred to in this standard as insurance groups. Where this is the case, capital adequacy is considered at both the level of the TU (solo level) and at the level of the group (group level).¹⁶

127. This section is set out as follows:

- Subsection 3.1: Capital adequacy in the context of segregation of funds
- Subsection 3.2: Capital adequacy in the context of the total balance sheet approach
- Subsection 3.3: Establishing regulatory capital requirements
- Subsection 3.4: Identification and assessment of capital resources for solvency purposes
- Subsection 3.5: Use of an internal model to determine regulatory capital requirements
- Subsection 3.6: Additional considerations for insurance groups and TUs that are members of groups.

3.1 Capital Adequacy in the Context of Segregation of Funds

Where fund segregation is practised, the supervisor assesses capital adequacy at the level of the fund, with due regard to any limitations on the ability of capital resources within *takāful* funds and the shareholders' fund to absorb losses in any other fund.

128. Segregation of funds, between those attributable to *takāful* participants and those attributable to the TO, is a key feature of the hybrid TU model to which this standard mainly refers. Such limitations may arise from the contractual terms or the legal framework that governs the undertaking's operations. A TU may maintain more than one *takāful* fund, each segregated from the others and from the SHF. The degree of fund segregation may differ from jurisdiction to jurisdiction, and the possibility of cross-subsidy between funds may exist. The supervisor's assessment of a TU's capital adequacy should take account of any limitation on the transferability of funds within the undertaking.

129. In the event that a TO is authorised to carry on both family and general *takāful* business, no *takāful* fund should include both family and general *takāful* business, unless the family business is only of a short-term nature (risk protection only). Legislation may in any case prohibit the

¹⁶ At the date of this standard, few insurance groups have TUs at their heads, or otherwise require a *takāful* supervisor to exercise the role of group-wide supervisor.

carrying on of both family and general *takāful* business by the same TO.¹⁷ IFSB-8: *Guiding Principles on Governance for Takāful (Islamic Insurance) Undertakings* requires separate treatment for provisioning and investment of family and general business, whether or not they are formally separated into different *takāful* funds.

130. Where funds are segregated, supervisors should operate from a presumption that capital resources within funds are not fungible between funds, unless the contrary can be demonstrated. Where capital resources are not fungible, determination of capital adequacy at fund level should not take into account the possibility of support from other funds in the event of stress, and consequently should not benefit from diversification of risks with other segments of the TU. Regulation should set out the cases in which the presumption of non-fungibility does not apply or is capable of rebuttal (e.g. if local regulation permits capital support from the SHF to a *takāful* fund, other than in the form of a formal arrangement recognised as capital resources of the *takāful* fund in question in accordance with paragraphs 228 to 241 below).
131. It may be a matter of fact that two or more *takāful* funds are fungible, in which case the supervisor once properly satisfied of that fact may consider those funds to constitute a single fund for solvency purposes.
132. When carrying out solvency supervision at the level of a segregated fund, the supervisor assesses the quality of capital resources at the level of each fund having regard to the qualitative features set out in this section of this standard.

3.2 Capital Adequacy in the Context of a Total Balance Sheet Approach

The supervisor requires that a total balance sheet approach is used in the assessment of solvency to recognise the interdependence between assets, liabilities, regulatory capital requirements and capital resources and to require that risks are appropriately recognised.

133. The overall financial position of a TU, or of a fund (including the SHF) forming a part of the TU, should be based on consistent measurement of assets and liabilities and explicit identification and consistent measurement of risks and their potential impact on all components of the balance sheet. In this context, the IFSB uses the term “total balance sheet approach” to refer to the recognition of the interdependence between assets, liabilities, regulatory capital requirements and capital resources for the TU or fund in question. A total balance sheet approach should also require that the impacts of relevant material risks on a TU’s or fund’s overall financial position are appropriately and adequately recognised.¹⁸ The use of a total balance sheet approach does not imply a requirement to transfer funds.
134. The assessment of the financial position of a TU or fund for supervision purposes addresses the TU’s or fund’s technical provisions, required capital and available capital resources. These aspects of solvency assessment (namely, technical provisions and capital) are intrinsically interrelated and cannot be considered in isolation by a supervisor.
135. Technical provisions and capital have distinct roles, requiring a clear and consistent definition of both elements. Technical provisions represent the amount that a TU or fund requires to fulfil its *takāful* obligations and settle all commitments to participants and other beneficiaries arising over the lifetime of the portfolio.¹⁹ Supervisors should be aware that the SHF may also contain

¹⁷ An analogous restriction is commonplace in conventional insurance.

¹⁸ See footnote 13.

¹⁹ This includes costs of settling all commitments to *takāful* participants and other beneficiaries arising over the lifetime of the portfolio of *takāful* policies, the expenses of administering the policies, the costs of *retakāful* and other forms of risk mitigation, and of the capital required to cover the remaining risks.

technical provisions in respect of expense provisions, and require capital resources in addition to these.²⁰

136. Technical provisions and regulatory capital requirements should be covered by adequate and appropriate assets, having regard to the nature and quality of those assets. To allow for the quality of assets, supervisors may consider applying restrictions or adjustments (such as quantitative limits, asset eligibility criteria or “prudential filters”) where the risks inherent in certain asset classes are not adequately covered by the regulatory capital requirements.
137. Capital resources may be regarded very broadly as the amount of the assets in excess of the amount of the liabilities. “Liabilities”, in this context, includes technical provisions and other liabilities, to the extent that these other liabilities are not treated as capital resources. For example, liabilities such as subordinated debt may, under certain circumstances, be given credit for regulatory purposes as capital – see paragraphs 225 to 241. “Assets and liabilities”, in this context, may include contingent assets and contingent liabilities.
138. In considering the quality of capital resources, the supervisor should have regard to their characteristics, including the extent to which the capital is available to absorb losses (including considerations of subordination and priority), the extent of the permanent and/or perpetual nature of the capital, and the existence of any mandatory remuneration or distribution arrangements in relation to the capital.²¹

3.3 Establishing Regulatory Capital Requirements

The supervisor establishes regulatory capital requirements at a sufficient level so that, in adversity, a TU’s obligations to *takāful* participants will continue to be met as they fall due and requires that TUs maintain capital resources to meet the regulatory capital requirements.

Introduction

139. Where segregation of funds is practised, the requirement for capital adequacy, and for related activities such as the performance of the own risk and solvency assessment, applies at the level of each fund, subject to any explicit ability to consider funds together. In the event of shortfall in any fund, remedial action should be subject to appropriate Sharī’ah governance.

Purpose and role of regulatory capital requirements and resources

140. A TU’s board and senior management have the responsibility to ensure that the TU has adequate and appropriate capital to support the risks it undertakes. Capital serves to reduce the likelihood of failure due to significantly adverse losses incurred by the TU over a defined period, including decreases in the value of the assets and/or increases in the obligations of the TU, and to reduce the magnitude of losses to *takāful* participants in the event that the TU fails.
141. Where segregation of funds is practised, fund-level capital requirements aim to ensure that there are adequate capital resources in each of the *takāful* funds and the SHF to support the financial obligations of that fund as they fall due.
142. From a regulatory perspective, the purpose of capital is to ensure that, in adversity, a TU’s obligations to *takāful* participants will continue to be met as they fall due. Regulators should establish regulatory capital requirements at the level necessary to support this objective.
143. In the context of its ORSA, the TO would generally be expected to consider the TU’s financial position from a going concern perspective (i.e. assuming that it will carry on its business as a going concern and continue to take on new business) but may also need to consider a run-off

²⁰ See paragraph 79.

²¹ More detailed guidance on the determination of capital resources is given below.

and/or winding-up perspective (e.g. where the TU is in financial difficulty). The determination of regulatory capital requirements may also have aspects of both a going concern and a run-off²² or winding-up perspective. In establishing regulatory capital requirements, therefore, supervisors should consider the financial position of TUs under different scenarios of operation.

144. From a macroeconomic perspective, requiring TUs to maintain adequate and appropriate capital enhances the safety and soundness of the *takāful* sector and the financial system as a whole, while not increasing the cost of *takāful* coverage to a level that is beyond its economic value to *takāful* participants or unduly inhibiting a TU's ability to compete in the marketplace. There is a balance to be struck between the level of risk that *takāful* participant obligations will not be paid and the cost to *takāful* participants of increased *takāful* contributions to cover the costs of servicing additional capital.
145. The level of capital resources that TUs need to maintain for regulatory purposes is determined by the regulatory capital requirements specified by the supervisor. A deficit of capital resources relative to capital requirements determines the additional amount of capital that is required for regulatory purposes.
146. Capital resources protect the interests of *takāful* participants by meeting either or both of the following objectives.
- They reduce the probability of insolvency by absorbing losses on a going concern basis or in run-off.
 - They reduce the loss to *takāful* participants in the event of insolvency or winding-up.
147. The extent to which elements of capital achieve the above outcomes will vary depending on their characteristics or "quality". For example, ordinary share capital may be viewed as achieving both of the above objectives, whereas subordinated debt may be viewed largely as only protecting *takāful* participants in insolvency. Capital that achieves both of the above objectives is sometimes termed "going concern capital", while capital that only reduces the loss to *takāful* participants in insolvency is sometimes termed "wind-up capital" or "gone concern" capital. It would be expected that the former (i.e. going concern capital instruments) should form the substantial part of capital resources.
148. Where segregation of funds is practised, a *takāful* fund may not have capital instruments of its own (e.g. ordinary share capital is in general issued from the SHF) but any accumulated surplus retained within the fund has characteristics of capital whose quality can be assessed. Capital resources of a *takāful* fund may be permitted also to include loans (*qarḍ*) received from the SHF, or commitments to make such *qarḍ* available from the SHF. The treatment of such balances that arise only between segments of the TU is further discussed below.
149. For a TU, the management and allocation of capital resources is a fundamental part of its TO's business planning and strategies. In this context, capital resources typically serve a broader range of objectives than those in paragraph 146. For example, a TU may use capital resources over and above the regulatory capital requirements to support future growth or to achieve a targeted credit rating.
150. It is noted that a TU's capital management (in relation to regulatory requirements and own capital needs) should be supported and underpinned by the TO establishing and maintaining a sound enterprise risk management framework, including appropriate risk and capital management policies, practices and procedures which are applied consistently across its organisation and are embedded in its processes. Maintaining sufficient capital resources alone is not sufficient protection for *takāful* participants in the absence of disciplined and effective risk

²² In this context, "run-off" refers to TUs (or funds of a TU) that are still solvent but have closed to new business and are expected to remain closed to new business.

management policies and processes (see TCP 16: *Enterprise Risk Management for Solvency Purposes* and IFSB-14: *Standard on Risk Management for Takāful (Islamic Insurance) Undertakings*).

151. For TUs that are members of groups, capital requirements and capital resources should take into account all additional reasonably foreseeable and relevant material risks arising from being a part of the group.

Structure of regulatory capital requirements: Solvency control levels

The regulatory capital requirements include solvency control levels, which trigger different degrees of intervention by the supervisor with an appropriate degree of urgency and require coherence between the solvency control levels established and the associated corrective action that may be at the disposal of the TO and/or the supervisor.

Solvency control levels in the context of segregation of funds

152. Where segregation of funds is practised, solvency control levels are applied at the level of each fund. Because capital adequacy is a relevant consideration for the SHF as well as the *takāful* funds, this includes the SHF.
153. The ability for the supervisor to intervene at fund level is necessary for the protection of *takāful* participants whose entitlements are not adequately protected by capital resources held in different segregated funds of the TU.

Establishing solvency control levels

154. The supervisor should establish control levels that trigger intervention by the supervisor in a TU's affairs when capital resources fall below these control levels. The control level may be supported by a specific framework or by a more general framework providing the supervisor latitude of action. A supervisor's goal in establishing control levels is to safeguard *takāful* participants from loss due to a TU's inability to meet its obligations when due.
155. The solvency control levels provide triggers for action by the TO and supervisor. Hence, they should be set at a level that allows intervention at a sufficiently early stage in a TU's difficulties so that there would be a realistic prospect for the situation to be rectified in a timely manner with an appropriate degree of urgency. At the same time, the reasonableness of the control levels should be examined in relation to the nature of the corrective measures. The risk tolerance of the supervisor will influence both the level at which the solvency control levels are set and the intervention actions that are triggered.
156. When establishing solvency control levels, it is recognised that views about the level that is acceptable may differ from jurisdiction to jurisdiction and by types of business written and will reflect, among other things, the extent to which the pre-conditions for effective supervision exist within the jurisdiction and the risk tolerance of the particular supervisor. The IFSB recognises that jurisdictions will acknowledge that a certain level of insolvencies may be unavoidable and that establishing an acceptable threshold may facilitate a competitive marketplace for TUs and avoid inappropriate barriers to market entry.
157. The criteria used by the supervisor to establish solvency control levels should be transparent. This is particularly important where legal action may be taken in response to a TU violating a control level. In this case, control levels should generally be simple and readily explainable to a court when seeking enforcement of supervisory action.
158. Supervisors may need to consider different solvency control levels for different modes of operation of the TU, such as a TU in run-off or a TU operating as a going concern. These different scenarios and considerations are discussed in more detail in paragraphs 177 to 179.

159. In addition, the supervisor should consider the allowance for management discretion and future action in response to changing circumstances or particular events. In allowing for management discretion, supervisors should only recognise actions that are practical and realistic in the circumstances being considered.²³

160. Other considerations in establishing solvency control levels include:

- the way in which the quality of capital resources is addressed by the supervisor;
- the coverage of risks in the determination of technical provisions and regulatory capital requirements and the extent of the sensitivity or stress analysis underpinning those requirements;
- the relation between different levels (e.g. the extent to which a minimum is set at a conservative level);
- the powers of the supervisor to set and adjust solvency control levels within the regulatory framework;
- the accounting and actuarial framework that applies in the jurisdiction (in terms of the valuation basis and assumptions that may be used and their impact on the values of assets and liabilities that underpin the determination of regulatory capital requirements);
- the comprehensiveness and transparency of disclosure frameworks in the jurisdiction and the ability for markets to exercise sufficient scrutiny and to impose market discipline;
- *takāful* participant priority and status under the legal framework relative to other creditors in the jurisdiction;
- overall level of capitalisation in the *takāful* sector in the jurisdiction;
- overall quality of risk management and governance frameworks in the *takāful* sector in the jurisdiction;
- the development of capital markets in the jurisdiction and its impact on the ability of TOs to raise capital; and
- the balance to be struck between protecting *takāful* participants and the impact on the effective operation of the *takāful* sector and considerations around unduly onerous levels and costs of regulatory capital requirements.

Structure of regulatory capital requirements: Triggers for supervisory intervention in the context of legal entity capital adequacy assessment

In the context of TU or fund capital adequacy assessment, the regulatory capital requirements establish:

- **a solvency control level above which the supervisor does not intervene on capital adequacy grounds. This is referred to as the prescribed capital requirement (PCR). The PCR is defined such that assets will exceed technical provisions and other liabilities with a specified level of safety over a defined time horizon; and**
- **a solvency control level at which, if breached, the supervisor would invoke its strongest actions, in the absence of appropriate corrective action by the TO. This is referred to as the minimum capital requirement (MCR). The MCR is subject to a minimum bound below which no TU or fund is regarded to be viable to operate effectively.**

161. Where segregation of funds is practised, solvency control levels are applied at the level of each fund, including the SHF, for which the ability of capital resources in other funds to absorb losses in the fund in question is restricted.²⁴

162. A range of different intervention actions should be taken by a supervisor, depending on the event or concern that triggers the intervention. Some of these triggers will be linked to the level

²³ The supervisor should carefully consider the appropriateness of allowing for such management discretion in the particular case of the minimum capital requirement as defined in subsection 3.3 Establishing Regulatory Capital Requirements”.

²⁴ For discussion on fungibility, see paragraphs 130 to 131.

of a TU's (or, where relevant, a fund's) capital resources relative to the level at which regulatory capital requirements are set.

163. In broad terms, the highest regulatory capital requirement, the prescribed capital requirement (PCR), will be set at the level at which the supervisor would not require action to increase the capital resources held or reduce the risks undertaken by the TU (overall or, so far as concerns a fund, within that fund).²⁵ However, if the capital resources were to fall below the level at which the PCR is set, the supervisor would require some action by the TO to either restore capital resources to at least the PCR level, or to reduce the level of risk undertaken (and, hence, the required capital level).
164. The regulatory objective to require that, in adversity, a TU's obligations to *takāful* participants will continue to be met as they fall due will be achieved without intervention if technical provisions and other liabilities²⁶ are expected to remain covered by assets over a defined period, to a specified level of safety. As such, the PCR should be determined at a level such that the TU is able to absorb the losses from adverse events that may occur over that defined period and the technical provisions remain covered at the end of the period.
165. The minimum capital requirement (MCR) represents the supervisory intervention point at which the supervisor would invoke its strongest actions, if further capital is not made available.²⁷ Therefore, the main aim of the MCR is to provide the ultimate safety net for the protection of the interests of *takāful* participants.
166. These actions could include stopping the activities of the TU (altogether, or of a particular fund), withdrawal of the TO's licence, requiring the TO to close the TU to new business and run off the portfolio, transfer its portfolio (or a part of its portfolio) to the management of another TO, arrange additional *retakāful*, or take other specified actions. This position is different from the accounting concept of insolvency, as the MCR would be set at a level in excess of that at which the assets of the TU or fund were still expected to be sufficient to meet the TU's obligations to existing *takāful* participants as they fall due. The PCR cannot be less than the MCR, and therefore the MCR may also provide the basis of a lower bound for the PCR, which may be especially appropriate in cases where the PCR is determined on the basis of a TU's internal model²⁸ approved for use in determining regulatory capital requirements by the supervisor.
167. In establishing a minimum bound on the MCR below which no TU, or no single fund, is regarded to be viable to operate effectively, the supervisor may, for example, apply a market-wide nominal floor²⁹ to the regulatory capital requirements, based on the need for a TU or fund to operate with a certain minimal critical mass and consideration (concerning the TO) of what may be required to meet minimum standards of governance and risk management. Such a nominal floor might vary between lines of business or type of TU and is particularly relevant in the context of a new

²⁵ Note that this does not preclude the supervisor from intervention or requiring action by the TO for other reasons, such as weaknesses in the risk management or governance of the TU. Nor does it preclude the supervisor from intervention when the TU's capital resources, or (where relevant) those of a segregated fund, are currently above the relevant PCR but are expected to fall below that level in the short term. To illustrate, the supervisor may establish a trend test (a time series analysis). A sufficiently adverse trend would require some supervisory action. The trend test would support the objective of early regulatory intervention by considering the speed at which capital deterioration is developing.

²⁶ To the extent these liabilities are not treated as capital resources.

²⁷ Note that this does not preclude such actions being taken by the supervisor for other reasons, and even if the MCR is met or exceeded.

²⁸ The term "internal model" refers to "a risk measurement system developed by a TO to analyse the overall risk position of the TU, to quantify risks and to determine the economic capital required to meet those risks". Internal models may also include partial models which capture a subset of the risks borne by the TU using an internally developed measurement system which is used in determining the TU's economic capital. The IFSB is aware that TOs use a variety of terms to describe their risk and capital assessment processes, such as "economic capital model", "risk-based capital model" or "business model". The IFSB considers that such terms could be used interchangeably to describe the processes adopted by TOs in the management of risk and capital within their TUs' business on an economic basis. For the purposes of consistency, the term "internal model" is used throughout this standard.

²⁹ In this context, a market-wide nominal floor may, for example, be an absolute monetary minimum amount of capital required to be held by a TU in a jurisdiction or in a fund.

TU, new *takāful* fund or new line of business. Where a nominal floor is applied at fund level, a new fund could require initial capitalisation – for example, by *waqf* or *qard*.

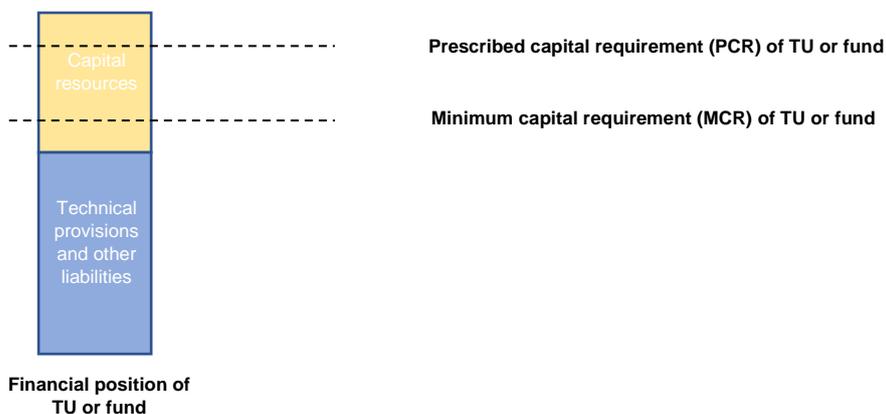
168. Regulatory capital requirements may include additional solvency control levels between the level at which the supervisor takes no intervention action from a capital perspective and the strongest intervention point (i.e. between the PCR and MCR levels). These control levels may be set at levels that correspond to a range of different intervention actions that may be taken by the supervisor itself or actions which the supervisor would require of the TO according to the severity or level of concern regarding adequacy of the capital held by the TU. These additional control levels may be formally established by the supervisor with explicit intervention actions linked to particular control levels. Alternatively, these additional control levels may be structured less formally, with a range of possible intervention actions available to the supervisor depending on the particular circumstances. In either case the possible triggers and range of intervention actions should be appropriately disclosed by the supervisor.

169. Possible intervention actions include:

- measures that are intended to enable the supervisor to better assess and/or control the situation, either formally or informally, such as increased supervision activity or reporting, or requiring auditors or actuaries to undertake an independent review or to extend the scope of their examinations;
- measures to address capital levels, such as requesting capital and business plans for restoration of capital resources to required levels, limitations on redemption or repurchase of equity or other instruments, repayment of *qard* and/or dividend payments, distributions and other appropriations of surplus at fund or TU level;
- measures intended to protect *takāful* participants pending strengthening of the TU's capital position, such as restrictions on licences, volumes of *takāful* contributions accepted, investments, types of business, acquisitions, *retakāful* and/or conventional reinsurance arrangements;
- measures that strengthen or replace the TO's management and/or risk management framework and overall governance processes for the TU;
- measures that reduce or mitigate risks (and, hence, required capital) such as requesting *retakāful*, hedging and other mechanisms; and/or
- refusing, or imposing conditions on, applications submitted for regulatory approval, such as acquisitions or growth in business.

170. In establishing the respective control levels, consideration should be had for these possibilities and the scope for a TU with capital at this level to be able to increase its capital resources or to access appropriate risk mitigation tools from the market. Figure 1 illustrates the concept of solvency control levels in the context of establishing regulatory capital requirements.

Figure 1: Solvency control levels and regulatory capital requirements



171. The column in Figure 1 represents the total assets of the TU (or, for individual fund assessment, the fund), valued in accordance with the valuation principles prescribed for the undertaking under national solvency requirements. Technical provisions and other liabilities (again, valued in accordance with the prescribed valuation principles, e.g. with the technical provisions including a MOCE) are covered by these assets. The excess of assets over liabilities represents the capital resources (subject to any adjustments that may be made). As the values of assets and liabilities change, the amount of capital resources also changes. The PCR is the amount of capital resources above which (as is the case in this illustration) there is no requirement for supervisory intervention. The MCR represents the level of capital resources at which the most stringent supervisory intervention is undertaken.
172. The reference to adjustments in the previous paragraph relates to the possibility of, among other things, reclassifications from liabilities into capital resources, recognition of additional items, not being assets, as capital resources, restrictions on recognition of capital resources due to tiering, and deductions from capital resources for foreseeable distributions. These matters are discussed in later sections of this paper.
173. Where segregation of funds is practised, the determination of capital resources and of the PCR and MCR is performed at the level of the fund, with a view to ensuring that each fund (including the shareholders' fund) is adequately capitalised to meet its obligations and does not, except where permitted by legislation, rely upon capital resources in other funds.
174. Where each fund of a TU (including the SHF) has an established PCR and MCR, the PCR and MCR of the TU as a whole should reflect the segregation of funds. Some diversification may be recognised where capital resources of one fund can be made available to support another; however, if this is not the case, the PCR and MCR of the TU as a whole may be determined by the sum of the PCRs and MCRs, respectively, of its constituent funds.

Structure of regulatory capital requirements: Approaches to determining regulatory capital requirements

The regulatory capital requirements are established in an open and transparent process, and the objectives of the regulatory capital requirements and the bases on which they are determined are explicit. In determining regulatory capital requirements, the supervisor allows a set of standardised and, if appropriate, other approved more tailored approaches such as the use of (partial or full) internal models.

175. Transparency as to the regulatory capital requirements that apply is required to facilitate effective solvency assessment and supports its enhancement, comparability and convergence internationally.
176. The supervisor may develop separate approaches for the determination of different regulatory capital requirements – in particular, for the determination of the MCR and the PCR. For example, the PCR and MCR may be determined by two separate methods, or the same methods and approaches may be used but with two different levels of safety specified. In the latter case, for example, the MCR may be defined as a simple proportion of the PCR, or the MCR may be determined based on different specified target criteria to those specified for the PCR.
177. The PCR would generally be determined on a going concern basis – that is, in the context of the TU continuing its operations. On a going concern basis, a TU would be expected to continue to take on new risks during the established time horizon. Therefore, in establishing the regulatory capital level that will provide an acceptable level of solvency, the potential growth in a TU's portfolio should be considered.
178. Capital should also be capable of protecting *takāful* participants if the TU were to close to new business. Generally, the determination of capital on a going concern basis would not be expected to be less than would be required if it is assumed that the TO were to close to new

business. However, this may not be true in all cases, since some assets may lose some or all of their value in the event of a winding-up or run-off, for example, because of a forced sale. Similarly, some liabilities may actually have an increased value if the business does not continue (e.g. claims-handling expenses). Where segregation of funds is practised, this matter must also be considered if a fund is not continuing its operations. The value of its capital and the level of its fund PCR (and, therefore, its contribution to the overall PCR of the TU) may need to be determined on a different basis reflecting its run-off nature. The impact on the capital and fund PCR of the SHF may also have to be considered if, for example, the SHF has to meet expenses for which there is no continuing *Wakālah* fee income.

179. Usually the MCR would be constructed taking into consideration the possibility of closure to new business. It is, however, relevant to also consider the going concern scenario in the context of establishing the level of the MCR, as a TU may continue to take on new risks up until the point at which MCR intervention is ultimately triggered (as could also be the case at fund level, where segregation of funds is practised). The supervisor should consider the appropriate relationship between the PCR and MCR, including at fund level where relevant, establishing a sufficient buffer between these two levels (including consideration of the basis on which the MCR is generated) within an appropriate continuum of solvency control levels, having regard for the different situations of business operation and other relevant considerations.
180. It should be emphasised that meeting the regulatory capital requirements should not be taken to imply that further financial injections will not be necessary under any circumstances in future. Such financial injections might be internal to the TU (by way of *qard* or other mechanism – e.g. *waqf* from the SHF to a *takāful* fund) or external (e.g. by issue of new share capital, or supplementary calls on *takāful* participants).
181. Regulatory capital requirements may be determined using a range of approaches, such as standard formulae, or other approaches, more tailored to the individual TU (such as partial or full internal models), which are subject to approval by the relevant supervisors.³⁰ Regardless of the approach used, the principles and concepts that underpin the objectives for regulatory capital requirements described in this section of this standard apply and should be applied consistently by the supervisor to the various approaches. The approach adopted for determining regulatory capital requirements should take account of the nature and materiality of the risks TUs face generally and, to the extent practicable, should also reflect the nature, scale and complexity of the risks of the particular TU.
182. Standardised approaches, in particular, should be designed to deliver capital requirements which reasonably reflect the overall risk to which TUs are exposed, while not being unduly complex. Standardised approaches may differ in level of complexity depending on the risks covered and the extent to which they are mitigated or may differ in application based on classes of business (e.g. family *takāful* and general *takāful*). Standardised approaches should be appropriate to the nature, scale and complexity of the risks that TUs face and should include approaches that are feasible in practice for TUs of all types, including small and medium-sized TUs and captives, taking into account the technical capacity that TOs need to manage their businesses effectively.
183. By its very nature, a standardised approach may not be able to fully and appropriately reflect the risk profile of each individual TU. Therefore, where appropriate, a supervisor should allow the use of more tailored approaches subject to approval. In particular, where a TO has an internal model (or partial internal model) for the TU that appropriately reflects its risks and is integrated into its risk management and reporting, the supervisor should allow the use of such

³⁰ A more tailored approach which is not an internal model might include, for example, approved variations in factors contained in a standard formula or prescribed scenario tests which are appropriate for a particular TU or group of insurers and TUs.

a model to determine more tailored regulatory capital requirements, where appropriate.³¹ The use of the internal model for this purpose would be subject to prior approval by the supervisor based on a transparent set of criteria and would need to be evaluated at regular intervals. In particular, the supervisor would need to be satisfied that the TO's internal model for the TU is, and remains, appropriately calibrated relative to the target criteria established by the supervisor (see paragraph 318).

184. Where segregation of funds is practised, the standardised approach may be appropriate to the circumstances of one or more funds, but not all. The supervisor could be asked to approve a partial or full internal model to cover only one or more funds, with the remaining funds covered by the standardised approach.

185. The supervisor should also consider whether an internal model is suitable to be used for the determination of the MCR. In this regard, the supervisor should take into account the main objective of the MCR (i.e. to provide the ultimate safety net for the protection of *takāful* participants) and the ability of the MCR to be defined in a sufficiently objective and appropriate manner to be enforceable (refer to paragraph 157).

The supervisor addresses all relevant and material categories of risk in TUs and is explicit as to where risks are addressed, whether solely in technical provisions, solely in regulatory capital requirements or, if addressed in both, as to the extent to which the risks are addressed in each. The supervisor is also explicit as to how risks and their aggregation are reflected in regulatory capital requirements.

Types of risks to be addressed

186. The supervisor should address all relevant and material categories of risk, including at least underwriting risk, credit risk,³² market risk, operational risk and liquidity risk. This should include any significant risk concentrations – for example, to economic risk factors, market sectors or individual counterparties – taking into account both direct and indirect exposures and the potential for exposures in related areas to become more correlated under stressed circumstances.

187. When considering operational risk, the supervisor should include Shari'ah non-compliance risk as a risk to which TUs are exposed. Incidence of non-compliance may result in identifiable loss of capital resources – for example, by way of refund of contributions or purification of tainted income – as well as less measurable risks relating to reputation and public confidence in the integrity of the TU.

Dependencies and interrelations between risks

188. The assessment of the overall risk that a TU is exposed to should address the dependencies and interrelationships between risk categories (e.g. between underwriting risk and market risk) as well as within a risk category (e.g. equity risk). This should include an assessment of potential reinforcing effects between different risk types, as well as potential "second-order effects" – that is, indirect effects to a TU's exposure caused by an adverse event or a change in economic or financial market conditions.³³ It should also consider that dependencies between different risks may vary as general market conditions change and may significantly increase during periods of stress or when extreme events occur. "Wrong way risk", which is defined as the risk that occurs when exposure to counterparties, such as financial guarantors, is adversely correlated to the

³¹ It is noted that the capacity for a supervisor to allow the use of internal models will need to take account of the sufficiency of resources available to the supervisor.

³² "Credit risk", in this context, refers to risk of non-payment of amounts due to the TU, not to credit risk as a class of *takāful* business. Foreseeable losses under credit risk *takāful* are reflected in technical provisions, and exposure to unforeseeable losses is an aspect of underwriting risk.

³³ For example, a change in the market level of rates of return could trigger an increase of lapse rates on insurance policies. Similarly, a change in creditworthiness across the market could result in both an enhanced level of default in amounts due to the TU and an enhanced level of claims under trade credit contracts entered into by the TU, thus engaging both credit risk and underwriting risk.

credit quality of those counterparties, should also be considered as a potential source of significant loss – for example, in connection with hedging transactions. Where the determination of an overall capital requirement takes into account diversification effects between different risk types, the TO should be able to explain the allowance for these effects and ensure that it considers how dependencies may increase under stressed circumstances. Where segregation of funds is practised, no credit should be taken for diversification between non-fungible funds.

Allowance for risk mitigation

189. Any allowance for *retakāful* or conventional reinsurance in determining regulatory capital requirements should consider the possibility of breakdown in the effectiveness of the risk mitigation and the security of the *retakāful* or conventional reinsurance counterparty and any measures used to reduce the *retakāful* or conventional reinsurance counterparty exposure. Similar considerations would also apply for other risk mitigants – for example, hedging.

190. Where segregation of funds is practised, any allowance for risk mitigation in respect of a fund should, where that mitigation takes the form of support from another fund of the same TU, or would, where applied, result in a cost in another fund, be reflected in that other fund by the cost of providing that mitigation.

Transparency of recognition of risks in regulatory requirements.

191. The supervisor should be explicit as to where risks are addressed, whether solely in technical provisions, solely in regulatory capital requirements, or, if addressed in both, as to the extent to which the risks are addressed in each. The solvency requirements should also clearly articulate how risks are reflected in regulatory capital requirements, specifying and publishing the level of safety to be applied in determining regulatory capital requirements, including the established target criteria (refer to paragraphs 194 to 207).

Treatment of risks which are difficult to quantify

192. The IFSB recognises that some risks – such as strategic risk, reputational risk, liquidity risk and operational risk – are less readily quantifiable than the other main categories of risks. Operational risk, for example, is diverse in its composition and depends on the quality of systems and controls in place. The measurement of operational risk, in particular, may suffer from a lack of sufficiently uniform and robust data and well-developed valuation methods. Jurisdictions may choose to base regulatory capital requirements for these less readily quantifiable risks on some simple proxies for risk exposure and/or stress and scenario testing. For particular risks (such as liquidity risk), holding additional capital may not be the most appropriate risk mitigant and it may be more appropriate for the supervisor to require the TO to control these risks via exposure limits and/or qualitative requirements such as additional systems and controls.

193. However, the IFSB envisages that the ability to quantify some risks (such as operational risk, including Shari'ah non-compliance risk as a component of operational risk) will improve over time as more data become available or improved valuation methods and modelling approaches are developed. Further, although it may be difficult to quantify risks, it is important that a TO nevertheless addresses all material risks in its ORSA for the TU.

The supervisor sets appropriate target criteria for the calculation of regulatory capital requirements, which underlie the calibration of a standardised approach. Where the supervisor allows the use of approved more tailored approaches such as internal models for the purpose of determining regulatory capital requirements, the target criteria underlying the calibration of the standardised approach are also used by those approaches for that purpose to require broad consistency among all TUs within the jurisdiction.

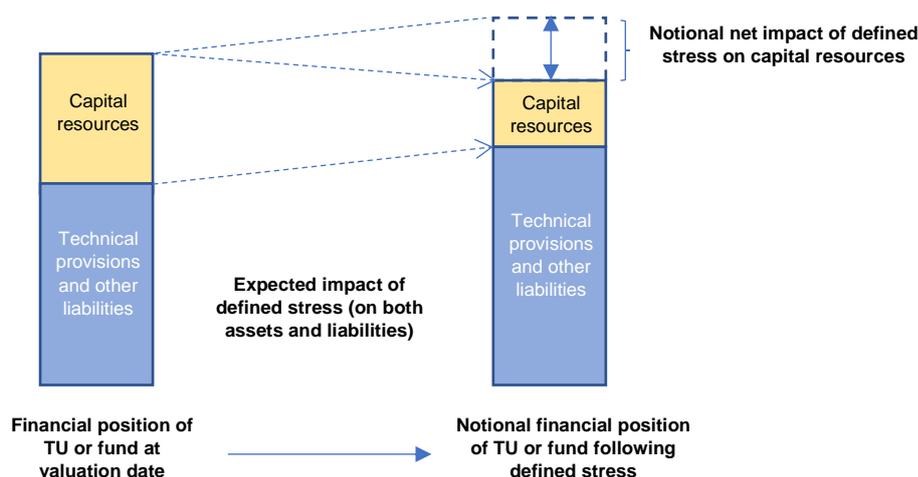
194. The level at which regulatory capital requirements are set will reflect the risk tolerance of the supervisor. Reflecting the IFSB's principles-based approach, this standard does not prescribe any specific methods for determining regulatory capital requirements. However, the IFSB's view is that it is important that individual jurisdictions set appropriate target criteria (such as risk measures, confidence levels or time horizons) for their regulatory capital requirements. Further, each jurisdiction should outline clear principles for the key concepts for determining regulatory capital requirements, considering the factors that a supervisor should take into account in determining the relevant parameters as outlined in this section of this standard.
195. Where a supervisor allows the use of other more tailored approaches to determine regulatory capital requirements, the target criteria established should be applied consistently to those approaches. In particular, where a supervisor allows the use of internal models for the determination of regulatory capital requirements, the supervisor should apply the target criteria in approving the use of an internal model by a TO for a TU for that purpose. This should achieve broad consistency among all TUs and a similar level of protection for all *takāful* participants within the jurisdiction.
196. With regard to the choice of the risk measure and confidence level to which regulatory capital requirements are calibrated, for a segregated fund or for a TU, the IFSB notes that some supervisors have set a confidence level for regulatory purposes which is comparable with a minimum investment grade level. Some examples have included a 99.5% value at risk (VaR) calibrated confidence level over a one-year time horizon,³⁴ a 99% tail value at risk (TVaR) over one year and a 95% TVaR over the term of the policy obligations.
197. With regard to the choice of an appropriate time horizon, the determination and calibration of the regulatory capital requirements needs to be based on a more precise analysis, distinguishing between:
- the period over which a shock is applied to a risk – the “shock period”; and
 - the period over which the shock that is applied to a risk will impact the TU – the “effect horizon”.
198. For example, a one-off shift in the discount rate term structure during a shock period of one year has consequences for the discounting of the cash flows over the full term of the policy obligations (the effect horizon). A judicial opinion (e.g. on an appropriate level of compensation) in one year (the shock period) may have permanent consequences for the value of claims and hence will change the projected cash flows to be considered over the full term of the policy obligations (the effect horizon).
199. The impact on cash flows of each stress that is assumed to occur during the shock period will need to be calculated over the period for which the shock will affect the relevant cash flows (the effect horizon). In many cases, this will be the full term of the *takāful* policy obligations. In some cases, realistic allowance for offsetting reductions in discretionary benefits to *takāful* participants or other offsetting management actions may be considered, where they could and would be made and would be effective in reducing policy obligations or in reducing risks in the

³⁴ This is the calibration of the risk charge for the IAIS Insurance Capital Standard for Internationally Active Insurance Groups, as well as for the European Solvency II regime.

circumstances of the stress.³⁵ In essence, at the end of the shock period, capital has to be sufficient so that assets cover the technical provisions (and other liabilities) redetermined at the end of the shock period. The redetermination of the technical provisions would allow for the impact of the shock on the technical provisions over the full time horizon of the policy obligations.

200. Figure 2 summarises key aspects relevant to the determination of regulatory capital requirements.

Figure 2: Illustration of determination of regulatory capital requirements



201. For the determination of the technical provisions of a TU (in the SHF or a *takāful* fund), a TO is expected to consider the uncertainty attached to the policy obligations – that is, the likely (or expected) variation of future experience from what is assumed in determining the current estimate – over the full period of the policy obligations. As indicated above, regulatory capital requirements should be calibrated such that assets exceed the technical provisions (and other liabilities) over a defined shock period with an appropriately high degree of safety. That is, the regulatory capital requirements should be set such that the TU’s capital resources can withstand a range of predefined shocks or stress scenarios that are assumed to occur during that shock period (and which lead to significant unexpected losses over and above the expected losses that are captured in the technical provisions).

Calibration and measurement error

202. The risk of measurement error inherent in any approach used to determine capital requirements should be considered. This is especially important where there is a lack of sufficient statistical data or market information to assess the tail of the underlying risk distribution. To mitigate model error, quantitative risk calculations should be blended with qualitative assessments, and, where practicable, multiple risk measurement tools should be used. To help assess the economic appropriateness of risk-based capital requirements, information should be sought on the nature, degree and sources of the uncertainty surrounding the determination of capital requirements in relation to the established target criteria.

³⁵ Discretionary benefits are not typical of *takāful*, and this particular mechanism may not be available to TOs. Distribution or donation of underwriting surplus, a feature of some *takāful* policies, is viewed as capital in nature rather than as a discretionary benefit and therefore is not brought to account until the decision to distribute or donate is made. (However, where a TO has made a selling point of surplus distribution, reasonable expectations may have been created that a distribution will always be made, potentially representing a constructive liability.)

203. The degree of measurement error inherent, in particular, in a standardised approach depends on the degree of sophistication and granularity of the methodology used. A more sophisticated standardised approach has the potential to be aligned more closely to the true distribution of risks across TUs. However, increasing the sophistication of the standardised approach is likely to imply higher compliance costs for TOs and more intensive use of supervisory resources (e.g. in validating the calculations). The calibration of the standardised approach therefore needs to balance the trade-off between risk sensitivity and implementation costs.

Procyclicality

204. When applying risk-based regulatory capital requirements, there is a risk that an economic downturn will trigger supervisory interventions that exacerbate the economic crises, thus leading to an adverse “procyclical” effect. For example, a severe downturn in share markets may result in a depletion of the capital resources of a major proportion of TUs. This, in turn, may force TUs to sell shares and to invest in less risky assets in order to decrease their regulatory capital requirements. A simultaneous massive selling of shares by TUs (and, simultaneously and for similar reasons, conventional insurers) could, however, put further pressure on the share markets, thus leading to a further drop in share prices and to a worsening of the economic crises.

205. However, the system of solvency control levels required enables supervisors to introduce a more principles-based choice of supervisory interventions in cases where there may be a violation of the PCR control level and this can assist in avoiding exacerbation of procyclicality effects: supervisory intervention is able to be targeted and more flexible in the context of an overall economic downturn so as to avoid measures that may have adverse macroeconomic effects.

206. It could be contemplated whether further explicit procyclicality dampening measures would be needed. This may include allowing a longer period for corrective measures or allowance for the calibration of the regulatory capital requirements to reflect procyclicality dampening measures. Overall, when such dampening measures are applied, an appropriate balance needs to be achieved to preserve the risk sensitivity of the regulatory capital requirements.

207. In considering the impacts of procyclicality, the influence of external factors (e.g. the influence of credit rating agencies) should be given due regard. The impacts of procyclicality also heighten the need for supervisory cooperation and communication.

Example risk-based capital requirement framework

208. A number of examples exist of risk-based capital frameworks, each designed for use in a particular jurisdiction. The majority at the date of this standard relate to conventional insurance. Development of a capital standard requires analysis of relevant data to estimate the shocks for the desired risk calibration, and quantitative impact studies to test the effect. The IAIS has published the specifications of the Standard Method for its ICS. Although designed for conventional insurance operations, the ICS illustrates a risk-based capital framework design that could be adapted by supervisors for *takāful* undertakings in their jurisdictions, including at fund level, following proper investigation of shock calibration and impact studies. It should be noted that the ICS Standard Method does not reflect all risks (e.g. it does not reflect liquidity risk) and requires the groups to which it applies to manage risks for which capital does not necessarily provide a mitigant. The ICS Standard Method for determining the PCR has the following principal features.

- The ICS Standard Method is based on aggregation of risk charges for identified categories of risk (insurance risk, market risk, credit risk and operational risk), risk being defined as unexpected changes (expected changes being already reflected in the market-consistent balance sheet). Each category of risk includes subcategories.

- Risk charges under the ICS Standard Method are determined using one of two main approaches: a stress approach, applying a prescribed shock to the market-consistent balance sheet; and a factor-based approach, applying a prescribed factor to a metric such as income or claims, which is taken as a proxy for a particular subcategory of risk. Geographic segmentation is used for some risks. Allowance is made for qualifying risk mitigation techniques and for management actions.
- Individual risk charges are combined to recognise risk diversification, using a correlation matrix.

209. The ICS identifies the classifications of risk and measurement methods, presented in Table 1, together with the method used to determine the risk charge. Text has been modified to emphasise specificities of *takāful*.

Table 1: Illustrating categories of risk, scope/definition and measurement method

Categories of risk	Risk	Scope/definition: Risk of adverse change in the value of capital resources due to	Measurement method
Insurance risk	Mortality risk	Unexpected changes in the level, trend or volatility of mortality rates.	Stress
	Longevity risk	Unexpected changes in the level, trend or volatility of mortality rates.	Stress
	Morbidity/disability risk	Unexpected changes in the level, trend or volatility of disability, sickness and morbidity rates.	Stress
	Lapse risk	Unexpected changes in the level or volatility of rates of policy lapses, terminations, renewals and surrenders.	Stress
	Expense risk	Unexpected changes in liability cash flows due to the incidence of expenses incurred.	Stress
	<i>Takāful</i> contribution risk ³⁶	Unexpected changes in the timing, frequency and severity of future insured events (to the extent not already captured in morbidity/disability risk).	Factor
	Claims reserve risk	Unexpected changes in the expected future payments for claims or events that have already occurred (whether reported or not) and not yet fully settled (to the extent not already captured in morbidity/disability risk).	Factor
	Catastrophe risk	Unexpected changes in the occurrence of low-frequency and high-severity events.	Stress ³⁷
Market risk	Discount rate risk ³⁸	Unexpected changes in the level or volatility of discount rates.	Stress
	Non-default spread risk	Unexpected change in the level or volatility of spreads over the risk-free discount rate term structure, excluding the default component.	Stress
	Equity risk	Unexpected changes in the level or volatility of market prices of equities.	Stress
	Real estate risk	Unexpected changes in the level or volatility of market prices of real estate or from the amount and timing of cash flows from investments in real estate.	Stress

³⁶ Referred to in the ICS as “premium risk”.

³⁷ For natural catastrophes, a model may be used.

³⁸ Referred to in the ICS as “interest rate risk”. In *takāful*, avoidance of *riba* would be expected to obviate interest rate risk so far as it related directly to a contract. However, TUs may still be exposed to shocks in market discount rates via impact on valuations, including of technical provisions.

	Currency risk	Unexpected changes in the level or volatility of currency exchange rates.	Stress
	Asset concentration risk	The lack of diversification in the asset portfolio.	Factor
Credit risk ³⁹	Credit risk	Unexpected changes in actual defaults, as well as in the deterioration of an obligor's creditworthiness short of default, including migration risk and spread risk due to defaults.	Factor
Operational risk	Operational risk	Operational events, including inadequate or failed internal processes, people and systems, or from external events. Operational risk includes legal risk and Shari'ah non-compliance risk, but excludes strategic and reputational risk.	Factor

210. The ICS specifications set out the details of the prescribed stresses and factors and their application to arrive at the risk charges for aggregation, which is performed at different levels. The specifications also prescribe the correlation matrices to determine diversification benefits.

211. The ICS does not currently include a module specific to climate change risk, although climate change risk is recognised as a significant emerging risk affecting many sectors and needs to be taken into account in considering capital adequacy in the *takāful* and broader financial sector. Supervisors developing risk-based capital frameworks should be alert to the fact that standard formulae cannot capture all risks and that emerging risks such as climate change risk need to be either incorporated into a standard formula or addressed in some other way, such as by capital add-ons. Supervisors should keep risk-based capital frameworks under review in order to initiate timely revision as market conditions evolve and risks emerge.

212. Where segregation of funds is practised, in a jurisdiction adopting a risk-based capital requirements framework of this nature, the TO would apply the risk charge factors at the level of each fund. Clearly, some risk charges would not be applicable to some funds – for example, if all market risk is borne by *takāful* participants in family *takāful* PIFs, the impact of the prescribed shock may be zero on such PIFs (though supervisors should be alert to the possibility of indirect impact on other funds – for example, if the PIF has been set up to fund *takāful* contributions to a PRF). Others – for example, expense risk – are applicable to more funds. Applicability or non-applicability would be readily demonstrated for a fund by considering the potential impact of the prescribed shock, for stress measurements, and the prescribed factor for factor measurements.

Variation of regulatory capital requirements

Any variations to the regulatory capital requirement imposed by the supervisor are made within a transparent framework, are appropriate to the nature, scale and complexity according to the target criteria and are only expected to be required in limited circumstances.

213. As has already been noted, a standardised approach, by its very nature, may not be able to fully and appropriately reflect the risk profile of each individual TU. In cases where the standardised approach established for determining regulatory capital requirements is materially inappropriate for the risk profile of the TU (or of one of its constituent funds), the supervisor should have the flexibility to increase the regulatory capital requirement calculated by the standard approach. For example, some TUs using the standard formula may warrant a higher PCR and/or group-wide regulatory capital requirement if they are undertaking higher risks, such as new products where credible experience is not available to establish technical provisions, or if they are undertaking significant risks that are not specifically covered by the regulatory capital requirements.

³⁹ See footnote 32.

214. Similarly, in some circumstances when an approved more tailored approach is used for regulatory capital purposes, it may be appropriate for the supervisor to have some flexibility to increase the capital requirement calculated using that approach. In particular, where an internal model, or partial internal model, is used for regulatory capital purposes, the supervisor may increase the capital requirement where it considers the internal model does not adequately capture certain risks, until the identified weaknesses have been addressed. This may arise, for example, even though the model has been approved where there has been a change in the business of the TU and there has been insufficient time to fully reflect this change in the model and for a new model to be approved by the supervisor.
215. In addition, supervisory requirements may be designed to allow the supervisor to decrease the regulatory capital requirement for an individual TU (or a fund of a TU) where the standardised requirement materially overestimates the capital required according to the target criteria. However, such an approach may require a more intensive use of supervisory resources due to requests from TOs for consideration of a decrease in their TU's regulatory capital requirement. Therefore, the IFSB appreciates that not all jurisdictions may wish to include such an option for their supervisor. Further, this reinforces the need for such variations in regulatory capital requirements to only be expected to be made in limited circumstances.
216. Any variations made by the supervisor to the regulatory capital requirement calculated by the TO for the TU should be made in a transparent framework and be appropriate to the nature, scale and complexity in terms of the target criteria. The supervisor may, for example, develop criteria to be applied in determining such variations and appropriate discussions between the supervisor and the TO may occur. Variations in regulatory capital requirements following supervisory review from those calculated using standardised approaches or approved more tailored approaches should be expected to be made only in limited circumstances.
217. In undertaking its ORSA, the TO considers the extent to which the regulatory capital requirements (in particular, any standardised formula) adequately reflect the TU's particular risk profile. In this regard, the ORSA undertaken by a TO can be a useful source of information to the supervisor in reviewing the adequacy of the regulatory capital requirements of the TU and in assessing the need for variation in those requirements.

3.4 Identification and Assessment of Capital Resources for Solvency Purposes

Identification of capital resources potentially available for solvency purposes

The supervisor defines the approach to determining the capital resources eligible to meet regulatory capital requirements and their value, consistent with a total balance sheet approach for solvency assessment and having regard to the quality and suitability of capital elements.

218. The following outlines a number of approaches a supervisor could use for the determination of capital resources in line with this requirement. The determination of capital resources would generally require the following steps:
- the amount of capital resources potentially available for solvency purposes is identified (see paragraphs 220 to 252);
 - an assessment of the quality and suitability of the capital instruments comprising the total amount of capital resources identified is then carried out (see paragraphs 253 to 291); and
 - on the basis of this assessment, the final capital resources eligible to meet regulatory capital requirements and their value are determined (see paragraphs 292 to 307).

219. In addition, the TO is required to carry out its own assessment of its TU's capital resources to meet regulatory capital requirements and any additional capital needs (as required under TCP 16 and IFSB-14).

Capital resources under total balance sheet approach

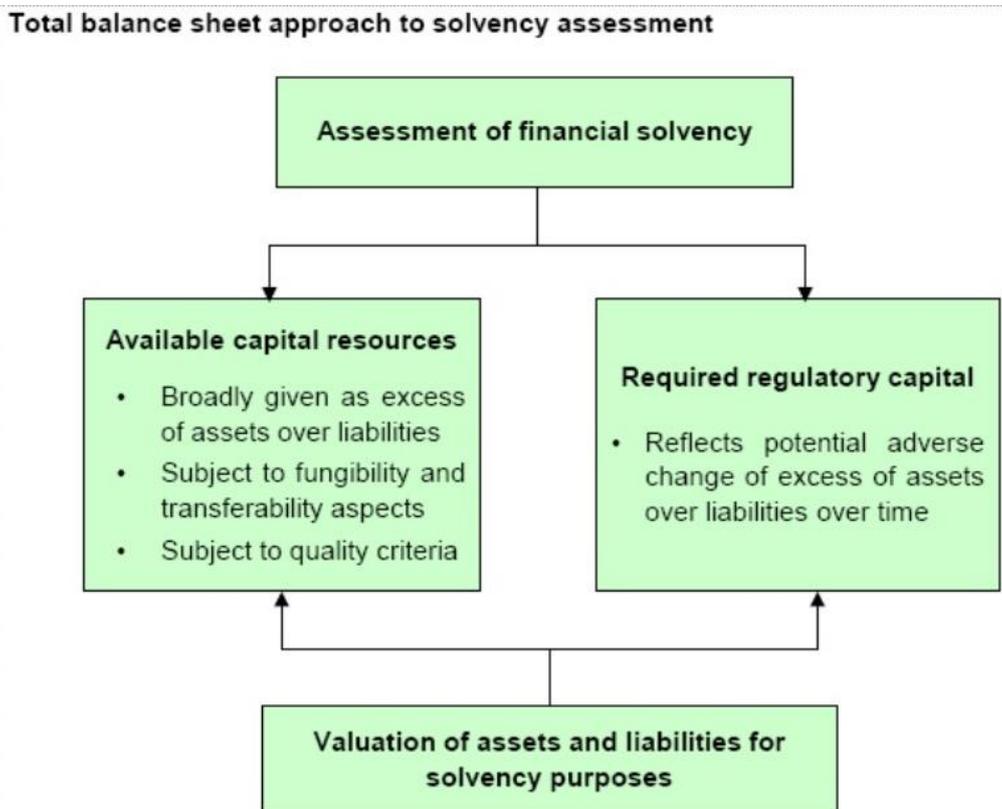
220. The IFSB supports the use of a total balance sheet approach in the assessment of solvency to recognise the interdependence between assets, liabilities, regulatory capital requirements and capital resources so that risks are appropriately recognised.

221. Such an approach requires that the determination of available and required capital is based on consistent assumptions for the recognition and valuation of assets and liabilities for solvency purposes.

222. From a regulatory perspective, the purpose of regulatory capital requirements is to require that, in adversity, a TU's obligations to *takāful* participants will continue to be met as they fall due. This aim will be achieved if technical provisions and other liabilities are expected to remain covered by assets over a defined period, to a specified level of safety.⁴⁰

223. To achieve consistency with this economic approach to setting capital requirements in the context of a total balance sheet approach, capital resources should broadly be regarded as the difference between assets and liabilities on the basis of their recognition and valuation for capital purposes.

Figure 3: Illustrating total balance sheet approach to solvency assessment



⁴⁰ Refer to subsection 3.3 Establishing Regulatory Capital Requirements”, above.

224. When regarding available capital resources as the difference between assets and liabilities, the following issues should be considered:

- the extent to which certain liabilities other than technical provisions may be treated as capital for solvency purposes (paragraphs 225 to 234);
- whether contingent assets could be included (paragraphs 235 to 241);
- the treatment of assets which may not be fully realisable in the normal course of business or under a wind-up scenario (paragraphs 242 to 250); and
- reconciliation of such a “top-down” approach to determining capital resources with a “bottom-up” approach which sums up individual items of capital to derive the overall amount of capital resources (paragraph 251).

Treatment of liabilities

225. Liabilities include technical provisions and other liabilities. Certain items, such as some other liabilities in the balance sheet, may be treated as capital resources for solvency purposes.

226. For example, perpetual subordinated debt, although usually classified as a liability under the relevant accounting standards, could be classified as a capital resource for solvency purposes.⁴¹ This is because of its availability to act as a buffer to reduce the loss to *takāful* participants and senior creditors through subordination in the event of insolvency. More generally, subordinated debt instruments (whether perpetual or not) may be treated as capital resources for solvency purposes if they satisfy the criteria established by the supervisor. Other liabilities that are not subordinated would not be considered as part of the capital resources; examples include liabilities such as deferred tax liabilities and pension liabilities.

227. It may, therefore, be appropriate to exclude some elements of funding from liabilities and so include them in capital to the extent appropriate. This would be appropriate if these elements have characteristics that protect *takāful* participants by meeting one or both of the objectives set out in paragraph 146.

228. Where segregation of funds is practised, funding may also be provided from one fund (the SHF) to another (typically, a PRF) by way of loan (*qarḍ*), with the intended purpose of capital or liquidity support. Assets of the SHF are lent to the fund, to provide the capital (or liquidity) that the fund requires to commence or sustain its operations, to be repaid only out of future surpluses of the fund. *Qarḍ* provided for liquidity support represents a liability of the *takāful* fund, and does not normally affect the level of its capital resources. Where, however, the purpose of *qarḍ* is capital support, then although the *qarḍ* still represents a liability of the *takāful* fund, it is potentially capable of reclassification as capital resources if it has the necessary qualities.

229. Similar considerations apply to a *takāful* window, to which the host conventional insurer has extended a *qarḍ*. (Where a window has its own SHF, the foregoing paragraph applies to *qarḍ* between the window’s SHF and *takāful* funds.)

230. The extent to which *qarḍ* made to a fund (or a window) should count as capital resources in the recipient fund depends, among other things, on the terms on which it is made and the legislation in the jurisdiction relating to such balances in the case where the fund becomes unable to pay all entitlements of its *takāful* participants. As described in paragraphs 260 and 264 to 270, subordination is a key characteristic of capital resources, so only where *takāful* participants’ claims ranked above *qarḍ* could *qarḍ* be considered regulatory capital of the highest quality. Subordination to *takāful* participants’ claims may be achievable by voluntary and irrevocable agreement of the *qarḍ* provider.

⁴¹ However, adequate recognition should be given to contractual features of the debt, such as embedded options, which may change its loss absorbency.

231. Care should be taken to avoid the possibility of internal leverage through the use of *qarḍ*. Internal leverage arises where the SHF finances *qarḍ* paid into a *takāful* fund (and recognised as capital resources in that fund) with resources that would not have ranked as capital resources of the same or higher quality in the SHF itself.
232. In order to prevent double counting, creation or enhancement of quality of capital, *qarḍ* that is recognised as capital resources in a *takāful* fund should not be recognised as an asset of the SHF for solvency purposes; or, if it is recognised as an asset in the SHF, it should be excluded or deducted from the capital resources of the SHF when assessing the capital adequacy of the SHF (or an equivalent amount added to the SHF's PCR and MCR). By default, the adjustment for double counting should be performed against the highest quality of capital in the SHF, unless the supervisor is satisfied both that adjustment against a lower quality of capital is justified by the terms of the capital item in question and that it does not result in the *qarḍ* being recognised at higher quality in the *takāful* fund. It follows, therefore, that adequate, unencumbered capital of sufficient quality must exist in the SHF before *qarḍ* is provided, in order for provision of *qarḍ* to be effective as a form of capital support for a *takāful* fund.
233. Supervisors should also consider whether boundaries between the funds of a TU will be respected both when the entity is a going concern and in any form of insolvency proceeding. If this is not the case, supervisors should address these issues with the relevant authorities in their own jurisdictions. This standard does not deal further with the complex issue of insolvency law.
234. It should be noted that this standard does not identify *qarḍ* as the sole permissible means of providing additional capital to *takāful* funds, and the regulatory framework in a jurisdiction may provide for other means, to which the principles set out in this section should be applied by supervisors.

Treatment of contingent assets

235. It may be appropriate to include contingent elements which are not considered as assets under the relevant accounting standards, where the likelihood of payment, if needed, is sufficiently high according to criteria specified by the supervisor. Such contingent capital may include, for example, letters of credit, members' calls by the TO of a mutual TU or the unpaid element of partly paid capital, and may be subject to prior approval by the supervisor.
236. Where segregation of funds is practised, legislation may allow contingent capital of a *takāful* fund to include, with supervisory approval, an arrangement (referred to in this standard as a *qarḍ* facility), being a voluntary and irrevocable commitment by the TO to transfer assets from the SHF to the *takāful* fund as *qarḍ*, with the following provisos:
- The supervisor is satisfied that the *qarḍ* facility can absorb losses in the *takāful* fund.
 - The *qarḍ* facility is represented by identified assets of the SHF that are earmarked for the *qarḍ* facility, are otherwise unencumbered and cannot be used to absorb losses of other funds.
 - The earmarked assets are:
 - of a nature suitable for solvency purposes of the *takāful* fund;
 - in a form readily transferable to the *takāful* fund; and
 - managed by the TO in accordance with the asset–liability management policy of the *takāful* fund.⁴²
 - The capital resources represented by the *qarḍ* facility are not double-counted in the capital resources of the SHF.

⁴² Investment policy, including asset–liability management, is outside the scope of this standard and supervisors are referred to TCP 15, TCP 16 and IFSB-14.

- The TO is legally obliged to transfer the earmarked assets or their proceeds to the *takāful* fund as *qard* on the occurrence of prescribed events, including where and to the extent that the *takāful* fund has insufficient capital resources otherwise to meet its MCR, or the fund or the legal entity is wound up.

237. As with *qard*, care should be taken to avoid internal leverage through the mechanism of a *qard* facility (see paragraphs 231 and 232). In order to avoid double counting the earmarked assets in the SHF for solvency purposes, creating or enhancing the quality of capital, the earmarked assets should be excluded or deducted from the capital resources of the SHF when assessing the capital adequacy of the SHF (or an equivalent amount added to the SHF's PCR and MCR). It follows, therefore, that adequate, unencumbered capital of sufficient quality must exist in the SHF before assets are earmarked, in order for a facility of this nature to be effective.

238. The fund that would bear the cost of a shock to the values of earmarked assets takes the assets into account in computing its fund PCR and fund MCR. Thus, if the SHF is obliged to top up the earmarked assets if their value falls, the SHF's PCR and MCR would reflect this, but if the *takāful* fund bore the risk, its PCR and MCR would include the capital charges.

239. Supervisory approval for the maintenance or extension of a *qard* facility should be subjected to due supervisory process and should specify the amount of the facility to be recognised as capital resources of the *takāful* fund or the means of determining that amount. The supervisor should be able to withdraw its approval if it considers it necessary and require the TO to transfer the earmarked assets to the *takāful* fund as *waqf*, *qard* or, exceptionally, as a gift (i.e. a *hibah* arrangement).

240. For the avoidance of doubt, this standard does not require jurisdictions to make *qard* facilities available. Where the regulatory framework in a jurisdiction requires or permits the use of a *qard* facility mechanism for providing additional capital to PRFs, this standard does not require maintenance of a *qard* facility in all circumstances, or specify an amount for such a facility, but rather to establish guidance for supervisors as to the approach to be taken where a TO wishes to count SHF assets towards the solvency of a *takāful* fund.

241. Where *takāful* windows are permitted, legislation may provide for a similar arrangement, whereby access to earmarked assets in the host is recognised as capital resources of the window. In such cases, the supervisor of the window should require the window's Sharī'ah governance function to include oversight of the assets earmarked, to identify any assets that could not be held by the window, or would require purification if held, to enable these to be excluded from the window's available capital resources.

Treatment of assets which may not be fully realisable on a going concern or wind-up basis

242. Supervisors should consider that, for certain assets in the balance sheet, the realisable value under a wind-up scenario may become significantly lower than the economic value which is attributable under going concern conditions. Similarly, even under normal business conditions, some assets may not be realisable at full economic value, or at any value, at the time they are needed. This may render such assets unsuitable for inclusion at their full economic value for the purpose of meeting required capital.⁴³

243. Examples of such assets include the following:

- *Own shares directly held by the TU*: The TU has bought and is holding its (or its TO's) own shares, thereby reducing the amount of capital available to absorb losses under a going concern or in a wind-up scenario.

⁴³ In particular, supervisors should consider the value of contingent assets for solvency purposes taking into account the criteria set out in paragraph 277.

- *Intangible assets*: Their realisable value may be uncertain even during normal business conditions and may have no significant marketable value in a run-off or winding-up. Goodwill is a common example.
- *Future income tax credits*: Such credits may only be realisable if there are future taxable profits, which is improbable in the event of an insolvency or a winding-up.
- *Implicit accounting assets*: Under some accounting models, certain items regarding future income are included, implicitly or explicitly, as asset values. In the event of a run-off or winding-up, such future income may be reduced.
- *Investments⁴⁴ in other TUs or financial institutions*: Such investments may have uncertain realisable value because of contagion risk between entities; also there is the risk of “double gearing” where such investments lead to a recognition of the same amount of available capital resources in several financial entities.
- *Company-related assets*: Certain assets carried in the accounting statements of the TU could lose some of their value in the event of a run-off or winding-up; for example, physical assets used by the TU in conducting its business which may reduce in value if there is a need for the forced sale of such assets. Also, certain assets may not be fully accessible to the TU (e.g. surplus in a corporate pension arrangement).

244. The treatment of such assets for capital adequacy purposes may need to reflect an adjustment to economic value. Generally, such an adjustment may be effected either:

- directly, by not admitting a portion of the economic value of the asset for solvency purposes (deduction approach); or
- indirectly, through an addition to regulatory capital requirements (capital charge approach).

Deduction approach

245. Under the deduction approach, the economic value of the asset is reduced for solvency purposes. This results in capital resources being reduced by the same amount. The partial (or full) exclusion of such an asset may occur for a variety of reasons – for example, to reflect an expectation that it would have only limited value in the event of an insolvency or a winding-up to absorb losses. No further adjustment would normally be needed in the determination of regulatory capital requirements for the risk of holding such assets.

246. Deduction is also appropriate for assets that should not be included in capital resources as they are to be removed from the TU. Assets or income requiring purification should be excluded from capital resources. Distributions, including distributions of surplus from *takāful* funds, should be excluded as soon as they are foreseeable.

Capital charge approach

247. Under the capital charge approach, an economic value is placed on the asset for the purpose of determining available capital resources. The risk associated with the asset – that is, a potential deterioration of the economic value of the asset due to an adverse event which may occur during the defined solvency time horizon – would then need to be reflected in the determination of regulatory capital requirements. This should take into account the estimation uncertainty⁴⁵ inherent in the determination of the economic value.

⁴⁴ These investments include investment in the equity of, loans granted to, deposits with and bonds issued by the related parties.

⁴⁵ This refers to the degree of inaccuracy and imprecision in the determination of the economic value where observable values are not available, and estimation methodologies need to be applied. Sources for this estimation uncertainty are, for example, the possibility that the assumptions and parameters used in the valuation are incorrect, or that the valuation methodology itself is deficient.

Choice and combination of approaches

248. As outlined above, an application of the deduction approach would lead to a reduction in the amount of available capital resources, whereas an application of the capital charge approach would result in an increase in regulatory capital requirements. Provided the two approaches are based on a consistent economic assessment of the risk associated with the relevant assets, they would be expected to produce broadly similar results regarding the overall assessment of the solvency position of the TU.
249. For some asset classes, it may be difficult to determine a sufficiently reliable economic value or to assess the associated risks. Such difficulties may also arise where there is a high concentration of exposure to a particular asset or type of assets, or to a particular counterparty or group of counterparties.
250. A supervisor should choose the approach that is best suited to the organisation and sophistication of the *takāful* sector and the nature of the asset class and asset exposure considered. It may also combine different approaches for different classes of assets. Whatever approach is chosen, it should be transparent and consistently applied. It is also important that any material double counting or omission of risks under the calculations for determining the amounts of required and available regulatory capital is avoided.

Reconciliation of approaches

251. The approach to determining available capital resources as broadly the amount of assets over liabilities (with the potential adjustments as discussed above) may be described as a “top-down” approach – that is, starting with the high-level capital as reported in the balance sheet and adjusting it in the context of the relevant solvency control level. An alternative approach which is also applied in practice is to sum up the amounts of particular items of capital that are specified as being acceptable. Such a “bottom-up” approach should be reconcilable to the “top-down” approach on the basis that the allowable capital items under the “bottom-up approach” should ordinarily include all items that contribute to the excess of assets over liabilities in the balance sheet, with the addition or exclusion of items as per the discussion in paragraphs 225 to 250.

Other considerations

252. A number of factors may be considered by the supervisor in identifying what may be regarded as capital resources for solvency purposes, including the following:
- the way in which the quality of capital resources is addressed by the supervisor, including whether or not quantitative requirements are applied to the composition of capital resources and/or whether or not a categorisation or continuum- based approach is used;
 - the coverage of risks in the determination of technical provisions and regulatory capital requirements;
 - the assumptions in the valuation of assets and liabilities (including technical provisions) and the determination of regulatory capital requirements – for example, a going concern basis or wind-up basis, before tax or after tax, etc.;
 - *takāful* participant priority and status under the legal framework relative to other creditors in the jurisdiction;
 - overall quality of risk management and governance frameworks in the *takāful* sector in the jurisdiction;
 - the comprehensiveness and transparency of disclosure frameworks in the jurisdiction and the ability for markets to exercise sufficient scrutiny and to impose market discipline;
 - the development of the capital market in the jurisdiction and its impact on the ability of TOs to raise capital;

- the balance to be struck between protecting *takāful* participants and the impact on the effective operation of the *takāful* sector and considerations around unduly onerous levels and costs of regulatory capital requirements; and
- the relationship between risks faced by TUs and those faced by other financial services entities, including conventional insurers and banks.

Criteria for the assessment of the quality and suitability of capital resources

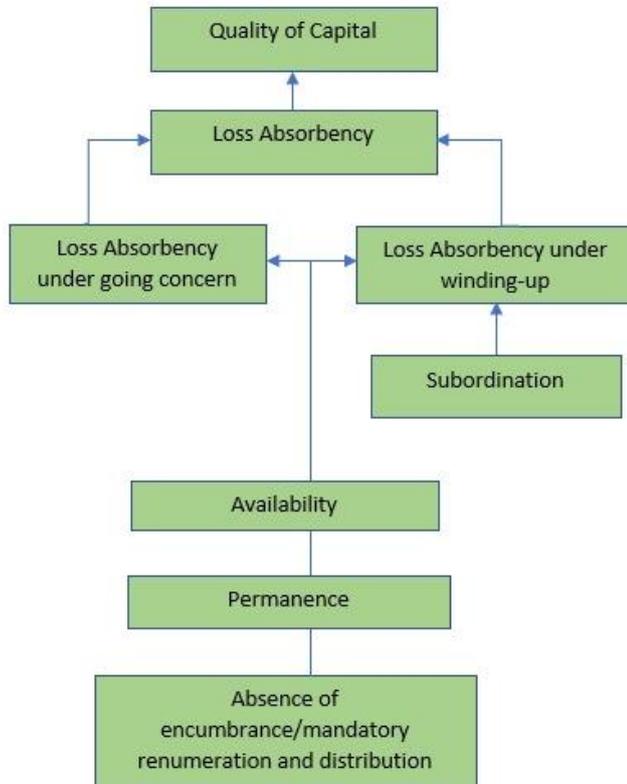
The supervisor establishes criteria for assessing the quality and suitability of capital resources, having regard to their ability to absorb losses on both a going concern and a wind-up basis.

253. In view of the two objectives of capital resources set out in paragraph 146, the following questions need to be considered when establishing criteria to determine the suitability of capital resources for regulatory purposes:
- To what extent can the capital element be used to absorb losses on a going concern basis or in run-off?
 - To what extent can the capital element be used to reduce the loss to *takāful* participants in the event of an insolvency or a winding-up?
254. Some capital elements are available to absorb losses in all circumstances – that is, on a going concern basis, in run-off, in winding-up and insolvency – subject to constraints of fund segregation. For example, common shareholders' funds (ordinary shares and reserves) in the SHF allow a TU to absorb losses on an ongoing basis, are permanently available and rank as the most subordinate instruments in a winding-up, provided that any element forwarded to *takāful* funds as subordinated *qarḍ* or earmarked as a *qarḍ* facility is disregarded in the SHF. Further, this element of capital best allows TUs to conserve resources when they are under stress because it provides a TO with full discretion as to the amount and timing of distributions. Consequently, common shareholders' funds are a core element of capital resources for the purpose of solvency assessment.
255. Similarly, at the level of a *takāful* fund, accumulated surplus allows the fund to absorb its losses on an ongoing basis, is permanently available, and ranks after creditors and policy entitlements in a winding-up (i.e. it is subordinated to them). Consequently, accumulated surplus is a core element of capital resources for the purpose of solvency assessment in a TU. This can be the case whether or not the accumulated surplus is available for application to the benefit of current *takāful* participants (by distribution or otherwise). Surplus may have been accumulated over time, such that the *takāful* participants to whom it was attributable are no longer participants in the fund. Such inherited surplus may still be eligible as capital resources of the fund, even if regulation restricts the uses to which it may be put.
256. The extent of loss absorbency of other capital elements can vary considerably. Hence, a supervisor should take a holistic approach to evaluating the extent of loss absorbency overall and should establish criteria that should be applied to evaluate capital elements in this regard, taking into account empirical evidence that capital elements have absorbed losses in practice, where available.
257. To complement the structure of regulatory capital requirements, the supervisor may choose to vary the criteria for capital resources suitable for covering the different solvency control levels established by the supervisor. Where such an approach is chosen, the criteria relating to capital resources suitable for covering an individual control level should have regard to the supervisory intervention that may arise if the level is breached and the objective of *takāful* participant protection.

258. For example, considering that the main aim of the MCR is to provide the ultimate safety net for the protection of the interests of *takāful* participants (even, where fund segregation is practised, in the SHF of a TU), the supervisor may decide to establish more stringent quality criteria for capital resources suitable to cover the MCR (regarding such resources as a “last line of defence” for the TU both during normal times and in wind-up) than for capital resources to cover the PCR.
259. Alternatively, a common set of regulatory criteria for capital resources could be applied at all solvency control levels, with regulatory capital requirements reflecting the different nature of the various solvency control levels.
260. In assessing the ability of elements of capital to absorb losses, the following characteristics are usually considered:
- the extent to which and in what circumstances the capital element is subordinated to the rights of *takāful* participants in an insolvency or a winding-up (subordination);
 - the extent to which the capital element is fully paid and available to absorb losses (availability);
 - the period for which the capital element is available (permanence); and
 - the extent to which the capital element is free from mandatory payments or encumbrances (absence of encumbrances and mandatory remuneration or distribution arrangements).
261. In the first bullet of paragraph 260, this characteristic is inherently linked to the ability of the capital item to absorb losses in the event of an insolvency or a winding-up. The characteristics of permanence and availability are relevant for loss absorbency under both a going concern and a winding-up; taken together, they could be described as being able to absorb losses when needed. Under availability, for example, *qard* made is immediately available, whereas a *qard* facility requires action to make it available, and is to that extent less available than *qard* made. The fourth characteristic is related to the degree to which the capital is conserved until needed, and in the case of absence of mandatory remuneration or distribution arrangements is primarily relevant for ensuring loss absorbency on a going concern basis.

262. The relationship between these characteristics is illustrated in Figure 4.

Figure 4: Illustrating the quality of capital



263. In the following text, we examine how the characteristics of capital resources described above may be used to establish criteria for an assessment of the quality of capital elements for regulatory purposes. It is recognised that views about the specific characteristics that are acceptable may differ from jurisdiction to jurisdiction and will reflect, among other things, the extent to which the pre-conditions for effective supervision exist within the jurisdiction and the risk tolerance of the particular supervisor.

Subordination

264. To require that a capital element is available to protect *takāful* participants, it must be legally subordinated to the rights of *takāful* participants and senior creditors of the TU in an insolvency or a winding-up. This means that the holder of a capital instrument is not entitled to repayment, dividends or other return, however described, once insolvency or winding-up proceedings have been started until all obligations to the TU's *takāful* participants have been satisfied.

265. The principle of subordination also implies that the holder of a capital element issued by the SHF of a TU operating a funds segregation model has no recourse to assets either transferred as *qarḍ* to a *takāful* fund or earmarked as a *qarḍ* facility (see paragraphs 236 to 241) until all obligations to the TU's *takāful* participants have been satisfied.

266. Subordination of *qarḍ* (provided to the *takāful* fund by a TO or other party) to *takāful* participants' claims may be achievable by voluntary and irrevocable agreement of the provider of the *qarḍ*.

If the subordination is for a limited term, the term should be assessed in accordance with paragraphs 277 to 281 (permanence).

267. Similar considerations apply in respect of any capital instrument or arrangement issued or arranged by the TO to provide capital support to the SHF or a *takāful* fund.
268. In addition, there should be no encumbrances that undermine the subordination or render it ineffective. One example of this would be applying rights of offset where creditors are able to set off amounts they owe the TU against the subordinated capital instrument.⁴⁶ Further, the instrument should not be guaranteed by either the TU or another related entity unless it is clear that the guarantee is available subject to the *takāful* participant priority. In some jurisdictions, subordination to other creditors may also need to be taken into account.
269. Each jurisdiction is governed by its own laws regarding insolvency and winding-up. Common equity shareholders normally have the lowest priority in any liquidating distribution of assets, immediately following preferred shareholders. In some jurisdictions, TOs can issue subordinated debt that provides protection to *takāful* participants and creditors in insolvency. While *takāful* participants are often given a legal priority above other creditors such as *sukuk* holders, this is not always the case; some jurisdictions treat *takāful* participants and other creditors equally. Some jurisdictions rank obligations to the government (e.g. taxes) and to employees ahead of *takāful* participants and other creditors. Where creditors have secured claims, they may rank before *takāful* participants. The determination of suitable capital elements for solvency purposes is critically dependent upon the legal environment of the relevant jurisdiction.
270. The supervisor should evaluate each potential capital element in the context that its value and suitability, and hence a TU's solvency position, may change significantly in a wind-up or insolvency scenario. In most jurisdictions the payment priority in a wind-up situation is clearly stated in law.

Availability

271. In order to satisfy the primary requirement that capital resources are available to absorb unforeseen losses, it is important that capital elements are fully paid.
272. However, in some circumstances, a capital element may be paid for "in kind" – that is, issued for non-cash. The supervisor should define the extent to which payment other than cash is acceptable for a capital element to be treated as fully paid without prior approval by the supervisor and the circumstances where payment for non-cash consideration may be considered as suitable subject to approval by the supervisor. There may, for example, be issues about the valuation of the non-cash components or the interests of parties other than the TU.
273. In addition to assets in the SHF earmarked as a *qard* facility (see paragraph 236), it may be appropriate to treat certain other contingent elements of capital as available capital resources in cases where the probability of payment is expected to be sufficiently high (e.g. the unpaid part of partly paid capital, additional contributions, legally enforceable against *takāful* participants or letters of credit (see paragraph 235).
274. Where a supervisor allows contingent elements of capital to be included in the determination of capital resources, such inclusion would be expected to be subject to meeting specific supervisory requirements or prior supervisory approval. When assessing the appropriateness of inclusion of a contingent element of capital, regard should be had to:
- the ability and willingness of the counterparty concerned to pay the relevant amount;
 - the recoverability of the funds, taking into account any conditions that would prevent the item from being successfully paid in or called up; and

⁴⁶ Rights of offset will vary according to the legal environment in a jurisdiction.

- any information on the outcome of past calls that have been made in comparable circumstances by other TOs, which may be used as an indication of future availability.

275. The availability of capital instruments may also be impaired when capital is not fully fungible within a TU to cover losses arising from the TU's business. Whereas the fungibility of capital and transferability of assets is primarily an issue in the context of group solvency assessment, it may also be relevant for the supervision of a TU as a legal entity.

276. This is the case where segregation of funds is practised, such that part of the assets or surplus of the TU is segregated from the rest of its operations in a ring-fenced fund. In such cases, assets in the fund may only be able to be used to meet obligations to *takāful* participants with respect to which the fund has been established. In these circumstances, the TU's available capital resources relating to the ring-fenced fund can only be used to cover losses stemming from risks associated with the fund (until transferred out of that fund, if that is possible) and cannot be transferred to meet the TU's other obligations. Similar arrangements can be observed in some jurisdictions for some or all forms of conventional insurance – in particular, life insurance.

Permanence

277. To provide suitable protection for *takāful* participants for solvency purposes, a capital element must be available to protect against losses for a sufficiently long period to ensure that it is available to the TU when needed. Supervisors may want to determine a minimum period that capital should be outstanding to be regarded as capital resources for solvency purposes.

278. When assessing the extent of permanence of a capital element, regard should be had to:

- the duration of the TU's obligations to *takāful* participants;⁴⁷
- contractual features of the capital instrument which have an effect on the period for which the capital is available (e.g. lock-in clauses, step-up options or call options);
- any supervisory powers to restrict the redemption of capital resources; and
- the time it might take to replace the capital element on suitable terms as it approaches maturity.

279. Similarly, if a capital element has no fixed maturity date, the notice required for repayment should be assessed against the same criteria.

280. It is important to take into account incentives to redeem a capital element prior to its maturity date which may exist in a capital element and may effectively reduce the period for which the capital is available. For example, a capital instrument that features a rate of return which increases from its initial level at a specified date after issue may give rise to an expectation that the instrument will be paid back at that future specified date.

281. An incentive to redeem may arise in the case of *qarḍ* advanced from the SHF or earmarked as a facility, where the TO may be aware that a deficit is possible in the *takāful* fund and has an incentive to seek repayment or release from earmarking before the deficit is reported. Legislation or the terms of the arrangement should prevent repayment of *qarḍ* or release from earmarking where it is foreseeable that the *takāful* fund will fail to meet its PCR.

⁴⁷ The duration of the TU's obligations to *takāful* participants should be assessed on an economic basis rather than a strict contractual basis.

Absence of mandatory remuneration or distribution requirements or encumbrances

282. The extent to which capital elements require shareholder dividend payments, remuneration or distribution and other forms of payment, including principal repayments of *qard* or repurchase of assets, should be considered, as it will affect the TU's ability to absorb losses on a going concern basis.
283. Capital elements that have a fixed maturity date may have remuneration or distribution requirements that cannot be waived or deferred before maturity. The presence of such features also affects the TU's ability to absorb losses on a going concern basis and may accelerate insolvency if the payment of remuneration or a distribution results in the TU breaching its regulatory capital requirements.
284. Where a capital instrument takes the form of a Sharī'ah-compliant fixed-income instrument such as a *sukuk*, the supervisor must consider whether and to what extent periodic payments made by the TO on the *sukuk* represent redemption of the principal amount, and the approach to be taken in such cases to preserve the characteristic of permanence.
285. A further consideration is the extent to which payments to capital providers or redemption of capital elements should be restricted or subject to supervisory approval. For example, the supervisor may have the ability to restrict the payment of dividends or other remuneration or distribution and any redemption of capital resources where considered appropriate to preserve the solvency position of the TU. TOs may also issue capital instruments for which payments and redemptions are fully discretionary or subject to supervisory approval according to the contractual terms.
286. Some capital instruments or other capital elements of a TU or of a segregated fund are structured so as to restrict the payment of dividends or other return, however described, and any redemption of capital resources where the TU or fund is breaching, or near to breaching, its regulatory capital requirements and/or is incurring loss. The payment of dividends or other return may also be subordinated to *takāful* participant interests in the TU or fund in the case of winding-up or insolvency. In the SHF, payment of dividends or other return may similarly be subordinated to the TO's contractual and fiduciary obligations to the *takāful* participants. Such features will contribute to the ability of the capital instrument or other capital element to absorb losses of the TU or the fund in question on a wind-up basis provided that any claims to unpaid dividends or other return on that capital instrument or other capital element are similarly subordinated.
287. In this context, the capital instruments of a *takāful* fund include subordinated *qard* advanced by the SHF and a *qard* facility maintained in the SHF, where these arrangements form part of the capital resources of the fund. Such items are excluded for this purpose from the capital resources of the SHF in order to avoid double counting, as explained in paragraphs 232 and 237. Other capital elements of a *takāful* fund include accumulated surplus, as mentioned in paragraph 255, where such accumulated surplus has the characteristics of capital, which include subordination and restriction on distribution as set out in the foregoing paragraph.
288. It should also be considered whether the capital elements contain encumbrances that may restrict their ability to absorb losses, such as guarantees of payment to the capital provider or other third parties, hypothecation, or any other restrictions or charges that may prevent the TO from using the capital resource when needed. Where the capital element includes guarantees of payment to the capital provider or other third parties, the priority of that guarantee in relation to *takāful* participants' rights should be assessed. Encumbrances may also undermine other characteristics, such as permanence or availability of capital.

The use of shareholder fund support in takāful funds

289. Where segregation of funds is practised, supervisors should also consider whether and under what circumstances *qard* or a *qard* facility is suitable as capital support for a *takāful* fund. If a *takāful* fund makes persistent surpluses, and those surpluses are not utilised by distribution or other application, it is plausible that the *takāful* participants' equity would over time become sufficient to meet the fund's capital adequacy requirements, thus making the *qard* or *qard* facility superfluous. However, this may not be plausible in the case of *takāful* (and, particularly, *retakāful*), which covers low-frequency and high-severity events, because of the size of the capital requirements for such business. Where a *takāful* fund is dependent for its capital adequacy on funds either advanced from the SHF or held in the SHF as a *qard* facility, the supervisor should consider potential impacts on the risk profile of the fund.
290. Long-term reliance on *qard* has the potential to cause adverse selection, where *takāful* is marketed on a basis of surplus distribution, as potential *takāful* participants may be reluctant to join a fund that carries a substantial debt to be repaid out of surpluses that would otherwise be attributable to the *takāful* participants. Legislation may therefore provide for the eligibility of *qard* as capital resources of the fund to be restricted under prescribed circumstances, thus obliging the TO to regularise the situation (whether by writing off the *qard*, placing the fund into run-off or in some other way), following due Sharī'ah governance.
291. Long-term reliance on a *qard* facility could also be detrimental to the interests of *takāful* participants in some circumstances. In a *takāful* fund with "long tail" claim liabilities, the *takāful* participants would be bearing (collectively) the cost of the unwinding discount on the claim liabilities. Where the income earned on earmarked assets forming part of the capital resources of the fund is attributed to the SHF, the risk of adverse selection may again be increased. Supervisors may therefore consider it necessary to limit the extent to which a fund may rely upon a *qard* facility before it is required to be "drawn" by transfer to the *takāful* fund – for example, by including *qard* facility in a lower tier of capital whose ability to cover the MCR or PCR of the fund is limited by regulation.

Determination of capital resources to meet regulatory capital requirements

292. Based on the assessment of the quality of the capital elements comprising the total capital resources potentially available to the TU, the final capital resources suitable to meet the regulatory capital requirements can be determined.
293. Capital elements that are fully loss absorbent under both a going concern and a wind-up perspective would generally be allowed to cover any of the different levels of regulatory capital requirements. However, the supervisor may choose to restrict the extent to which the stronger solvency control levels (i.e. control levels that trigger more severe supervisory interventions) may be covered by lower-quality capital resources, or choose to establish minimum levels for the extent to which these stronger requirements should be covered by the highest-quality capital resources. In particular, this applies to amounts of capital resources that are intended to cover the MCR.
294. To determine the amount of a TU's capital resources, supervisors may choose a variety of approaches – for example:
- those that categorise capital resources into different quality classes ("tiers") and apply certain limits/restrictions with respect to these tiers (tiering approaches);
 - those that rank capital elements on the basis of the identified quality characteristics (continuum-based approaches); or
 - those that do not attempt to categorise or rank capital elements, but apply individual restrictions or charges where necessary.

To accommodate the quality of assets and of capital elements, combinations of the above approaches have been widely used in various jurisdictions for solvency purposes for *takāful*, conventional insurance and other financial sectors.

Determination of capital resources to meet regulatory capital requirements: Tiering approach

295. To take into account the quality of capital instruments, a tiering approach is commonly used in many jurisdictions and in other financial sectors. Under a tiering approach, the composition of capital resources is based on the categorisation of elements of capital according to the quality criteria set by the supervisor.
296. In many jurisdictions, capital elements are categorised into two or three distinct levels of quality when considering criteria for, and limits on, those capital elements for solvency purposes. For example, one broad categorisation may be as follows:⁴⁸
- *Highest-quality capital*: permanent capital that is fully available to cover losses of the TU at all times on a going concern and a wind-up basis.
 - *Medium-quality capital*: capital that lacks some of the characteristics of highest-quality capital, but which provides a degree of loss absorbency during ongoing operations and is subordinated to the rights (and reasonable expectations) of *takāful* participants.
 - *Lowest-quality capital*: capital that provides loss absorbency in insolvency/winding-up only.
297. Where segregation of funds is practised, and a tiering approach is adopted, the supervisor should consider whether, in view of the fact that a segregated fund may be unable to issue capital instruments other than *qard* or a *qard* facility provided by the SHF, the tiering categorisation of *qard* or *qard* facility should reflect the tier of capital resources in the SHF from which the *qard* or *qard* facility is deducted, rather than being determined on a stand-alone basis, in order to avoid enhancement of the quality of capital by inter-fund transaction.
298. Under a tiering approach, the supervisor would set minimum or upper levels for the extent to which required capital should comprise the various categories or tiers (e.g. high, medium, low) of capital elements. Where established, the level may be expressed as a percentage of required capital⁴⁹ (e.g. a minimum level of 50%⁵⁰ of required capital for high-quality capital elements, and/or an upper limit for lowest-quality capital might be 25% of required regulatory capital). There may also be limits set on the extent to which required capital may be comprised of certain specific types of capital elements (e.g. perpetual subordinated loan capital and perpetual cumulative preference share capital may be limited to 50% of required capital).
299. What constitutes an adequate minimum or upper level may depend on the nature of the *takāful* business and how the requirement interacts with the various solvency control levels. A separation into tiers as set out above assumes that all elements of capital can clearly be identified as belonging to one of the specified tiers and that elements falling into an individual tier will all be of the same quality. In reality, such distinctions between elements of capital may not be clear-cut and different elements of capital will exhibit the above quality characteristics in varying degrees.
300. There are two potential policy responses to this fact. One is to set minimum quality thresholds on the characteristics the capital must have to be included in the relevant tier. As long as these thresholds are met for a given element, then it can be included in the relevant tier of capital without limit. The other approach is to set minimum quality thresholds for limited inclusion in the relevant tier, but to set additional higher-quality thresholds for elements to be permitted to be

⁴⁸ Capital elements categorised as being of highest quality are often referred to as “core capital”, and those of lower levels as “supplementary capital”, or similar.

⁴⁹ Alternative approaches may also be used in practice – for example, where the levels are expressed as a percentage of available capital.

⁵⁰ The percentages used may vary for supervisors in different jurisdictions.

included in that tier without limit. This approach effectively subdivides the tiers. It permits greater recognition within a given tier for elements of capital that are more likely to fulfil the quality targets specified for that tier.

301. Where a tiering approach is applied, this should ideally follow the distinction between going concern capital and wind-up capital. Dividing capital into these tiers is an approach that is also used in the context of regulatory capital requirements for the banking sector. It is used in the IAIS Insurance Capital Standard, and also in the European Solvency II framework for insurance, although it is not the approach taken in some other major insurance jurisdictions (e.g. the United States).

Determination of capital resources to meet regulatory capital requirements: Continuum-based approach

302. In other jurisdictions, a continuum-based approach may be used in recognising the differential quality of capital elements. Under this approach, elements of capital are not categorised, but rather ranked, relative to other elements of capital on the basis of identified quality characteristics set by the supervisor. The supervisor also defines the minimum acceptable level of quality of capital for solvency purposes and, perhaps, for different solvency control levels. In this way, the capital elements are classified from highest to lowest quality on a continuous basis; only capital elements sitting above this defined minimum level on the continuum would be accepted as capital resources for solvency purposes. Due consideration should again be given to the quality of capital elements to ensure that there is an appropriate balance of going concern and wind-up capital.

Determination of capital resources to meet regulatory capital requirements: Other approaches on determination of capital resources

303. The supervisor may also apply approaches that are not based on an explicit categorisation of capital instruments, but more on an assessment of the quality of individual capital instruments and their specific features. For example, the terms of a hybrid capital instrument may not provide enough certainty that coupon payments will be deferred in times of stress. In such a case, the supervisor's approach may limit (possibly taking into account further quality criteria) the ability of that instrument to cover the regulatory capital requirements.

Determination of capital resources to meet regulatory capital requirements: Choice and combination of approaches

304. Each approach has advantages and disadvantages. Jurisdictions should consider the organisation and sophistication of the *takāful* sector and choose the best approach appropriate to the circumstances. Whatever approach is used overall, it should be transparent and be consistently applied so that capital resources are of sufficient quality on a going concern and a wind-up basis.
305. It is recognised that in some markets, only a limited range of instruments (e.g. pure equity) may meet the quality criteria set out above. Accordingly, supervisors in such markets may wish to restrict the range of instruments that may be included in capital resources for solvency purposes or to apply procedures for prior approval as appropriate. Where segregation of funds is practised, supervisors may similarly restrict the acceptable terms of *qard* or *qard* facilities providing intra-fund capital support, or subject them to prior approval.
306. It is also important that the approach to the determination of capital resources for solvency purposes is consistent with the framework and principles underlying the determination of regulatory capital requirements. This not only includes the implemented range of solvency control levels, but is also relevant with regard to the target criteria underlying the regulatory capital requirements. In particular, the target criteria for regulatory capital requirements and, hence, the approach to determining capital resources should be consistent with the way in which

the supervisor addresses the two broad aims of capital from a regulatory perspective, as described in paragraph 146.

307. To illustrate this, suppose that in setting regulatory capital requirements the supervisor would consider the maximum probability over a specified time period with which they are willing to let unforeseen losses cause the insolvency of a TU or, where segregation of funds is practised, of a constituent fund of a TU. In such a case, TUs would need to maintain, in the appropriate funds as where relevant, sufficient capital resources to absorb losses before insolvency or winding-up occurs. Hence the determination of capital resources would need to lay sufficient emphasis on the first objective stated in paragraph 146 (loss absorbency under going concern), and could not entirely rely on the second objective (loss absorbency solely under insolvency or winding-up).

Example: The Insurance Capital Standard (ICS)

308. The IAIS ICS was used above as an illustration of risk-based capital framework design that could be adapted by supervisors for *takāful* undertakings in their jurisdictions, including at fund level, following proper investigation of shock calibration and impact studies. The ICS may also be used as an illustration of the classification and eligibility of capital resources for solvency purposes, including at fund level.

- The ICS identifies two tiers of capital resources:
 - Tier 1 resources, which absorb losses on both a going-concern and a winding-up basis; and
 - Tier 2 resources, which absorb losses only in winding-up.

309. Each financial instrument issued, and each capital element other than a financial instrument, is classified into one of these tiers on the basis of prescribed qualitative criteria. Each tier is divided into two sub-tiers; in the case of Tier 1, between capital that is eligible without limit and capital whose eligibility is subject to a quantitative limit; and, in the case of Tier 2, between capital that is paid up and capital that is not paid up. Under the ICS, non-paid-up capital is available only to mutual insurers. An analogy may be drawn with *takāful* funds, which operate on a mutual basis, and for which an undrawn *qarḍ* facility might be considered capital that is not paid up.

310. Qualitative adjustments are made to reclassify certain items from Tier 1 to Tier 2. Deductions are then made from Tier 1 (e.g. intangible assets, if not valued at zero) and from Tier 2.

311. While Tier 1 unlimited items after adjustments, exclusions and deductions are eligible as capital resources without restriction, Tier 1 limited and Tier 2 capital resources after adjustments, exclusions and deductions are subject to limits, expressed as a percentage of the ICS capital requirement (i.e. the PCR). For example, for a mutual the Tier 1 limited and Tier 2 capital resources are limited to 60% of the ICS capital requirement. After the limits have been applied, the resultant total eligible capital (Tier 1 unlimited, plus the remaining Tier 1 limited, Tier 2 paid-up and Tier 2 non-paid-up) is compared to the ICS capital requirement to determine whether the subject of the assessment is in compliance with the ICS capital requirement.

312. Care should be taken in applying any illustrative model when developing a framework for a particular jurisdiction or type of business, and supervisors should ensure that the classifications and limitations, if any, that they apply are valid by reference to the business of the TUs that they supervise rather than being copied from an illustrative model. For example, the ICS qualitative criteria and limits for capital that is not paid up were developed in the context of capital that could be provided by an external provider. In the case of a *qarḍ* facility, supervisors developing their own frameworks would be expected to take into account that the capital, not paid up from the perspective of the *takāful* fund wishing to recognise it, was already present in a different fund of the same TU. Accordingly, the conditions and limits on eligibility would reflect that fact.

3.5 Use of an Internal Model to Determine Regulatory Capital Requirements

313. The use of internal capital models to determine regulatory capital requirements for TUs is not common. This standard sets out some general provisions on the use of internal models for this purpose. Further guidance is provided in TCP 17.

Where a supervisor allows the use of internal models to determine regulatory capital requirements, the supervisor:

- **establishes appropriate modelling criteria to be used for the determination of regulatory capital requirements, which require broad consistency among all TUs within the jurisdiction;**
- **identifies the different levels of regulatory capital requirements for which the use of internal models is allowed;**
- **makes the use of internal models for regulatory capital requirements subject to prior approval, and satisfaction by the TO of conditions including a statistical quality test, a calibration test and a use test, to demonstrate the appropriateness of the internal model for this purpose;**
- **sets standards for documentation to be maintained by the TO regarding the internal model; and**
- **makes the continuing use of an internal capital model once approved subject to ongoing validation and supervisory approval.**

314. Internal models can be considered in the dual contexts of:

- a method by which a TO determines its TU's own economic capital⁵¹ needs; and
- a means to determine a TU's regulatory capital resources and requirements, where appropriate.

315. In either case, the quality of the TO's risk management and governance is vital to the effective use of internal models. If the TO has supervisory approval, internal models can be used to determine the amount of the TU's regulatory capital requirements. However, a TO should not need supervisory approval, initial or ongoing, for the use of its internal model in determining its TU's own economic capital needs or management.

316. Where the supervisor allows a range of standardised and more tailored approaches for regulatory capital purposes, including internal models, a TO should have a choice as to which approach it adopts for the TU,⁵² subject to satisfying certain conditions established by the supervisor on the use of internal models for regulatory capital purposes.

317. Where there is a choice of approach allowed by a supervisor, it is inappropriate for a TO to be able to adopt a process of "cherry-picking" between those approaches⁵³ – for example, by choosing to use its model for regulatory capital purposes only when the model results in a lower capital requirement than a standardised approach. The IFSB supports the use of internal models where appropriate, as they can be a more realistic, risk-responsive method of calculating capital requirements, but discourages any "cherry-picking" practices by TOs.

318. The IFSB does not prescribe specific solvency requirements that are compulsory to all IFSB members. Notwithstanding this, the supervisor will need to establish the appropriate modelling criteria to be used by TOs to meet its regulatory capital requirements for TUs, and the TO's

⁵¹ "Economic capital" refers to the capital that results from an economic assessment of the TU's risks given the TU's risk tolerance and business plans.

⁵² There are a number of considerations that the TO would also have to make before deciding to invest in constructing an internal model, one of which is cost. The IFSB is not advocating that all TUs must have an internal model (although their use is encouraged where appropriate).

⁵³ Refer to paragraph 321 in relation to "cherry-picking" in the particular context of partial internal models.

internal models will need to be calibrated accordingly if used for that purpose. The IFSB notes that some supervisors in the conventional insurance sector who allow the use of internal models to determine regulatory capital requirements have set a confidence level for regulatory purposes that is comparable with a minimum investment grade level. Some examples of modelling criteria include a 99.5% VaR⁵⁴ calibrated confidence level over a one-year time frame,⁵⁵ a 99% TVaR⁵⁶ over one year⁵⁷ and a 95% TVaR over the term of the policy obligations. Different criteria apply for PCR and MCR.

319. It is noted that, due to the TU-specific nature of each internal model, internal models can be very different from each other. Supervisors, in allowing the use of an internal model for regulatory capital purposes, should preserve broad consistency of capital requirements between TUs with broadly similar risks.

Partial internal models

320. The IFSB supports the use of partial internal models for regulatory capital purposes, where appropriate. A partial internal model typically involves the use of internal modelling to substitute parts of a standardised approach for the determination of regulatory capital requirements. For example, a TO could decide to categorise its TU's *takāful* contracts along business lines for modelling purposes, or to develop an internal model for only one of the funds that it manages, where segregation of funds is practised. If the regulatory capital requirements for some of these categories are determined by modelling techniques, while the capital requirements for other categories are determined using a standardised approach (e.g. applying an internal model to one PRF while using a standardised approach for any other PRF and any PIF, and for the SHF), then this would constitute the TO using a partial internal model to calculate regulatory capital for the TU.

321. Partial internal models are often used in the conventional insurance sector to smooth transition to full use of an internal model or to deal with instances such as the merger of two insurers, one of which uses an internal model, and the other of which uses a standardised approach; similar circumstances in the *takāful* sector could similarly justify the use of a partial internal model. Given the potential complexity of a full internal model, use of a partial internal model could be a satisfactory approach provided its scope is properly defined (and approved by the supervisor). Provided the reduced scope of the internal model is soundly justified, the use of a partial internal model could be allowed as a permanent solution. However, as discussed above, there could be a tendency for a TO to adopt a “cherry-picking” approach in the use of internal models for a TU. This applies particularly where partial modelling is allowed. The supervisor should place the onus on the TO to justify why it has chosen to only use internal models for certain risks or business lines, or certain funds, of the TU. Where this justification is not sound enough, the supervisor should take appropriate action (e.g. refuse or withdraw approval of the model or impose a capital add-on) until the model has developed to a sufficient degree.

322. Supervisors should be particularly alert to the risk of inappropriate outcomes arising from the use of internal models for only one or some of the constituent funds of a TU, where there is capital support between the funds (e.g. by way of a *qarḍ* facility), to ensure that the location of assets within the TU does not result in a materially different PCR overall.

⁵⁴ Value at risk is an estimate of the worst expected loss over a certain period of time at a given confidence level.

⁵⁵ This is the level expected in Australia for those insurers that seek approval to use an internal model to determine their MCR. It is also the level used for the calculation of the risk-based solvency capital requirement under the European Solvency II regime and for the IAIS Insurance Capital Standard for Internationally Active Insurance Groups.

⁵⁶ Tail value at risk is the VaR plus the average exceedence over the VaR if such exceedence occurs.

⁵⁷ These are the modelling criteria of the Swiss Solvency Test.

3.6 Additional Considerations for Insurance Groups and TUs that are Members of Groups

323. Where a TU is the parent of an insurance group, the supervisor of that TU will normally have the responsibility of acting as group-wide supervisor (see TCP 23). This responsibility may also fall on a *takāful* supervisor where a holding company of an insurance group is domiciled in the supervisor's jurisdiction, or where a TU that it supervises is the most significant operation in the group. Although this situation has historically occurred rarely, it is appropriate to provide guidance in this standard on the application of solvency requirements at group level.

The total balance sheet approach at group level

324. The capital adequacy assessment of a TU that is a member of an insurance group needs to consider the value of any holdings the TU has in affiliates. Consideration may be given, at the level of either the TU or the insurance group, to the risks attached to this value.

325. Where the value of holdings in affiliates is included in the capital adequacy assessment and the TU is the parent of the group, group-wide capital adequacy assessment and "solo" assessment of the parent may be similar in outcome, although the detail of the approach may be different. For example, a group-wide assessment may consolidate the business of the parent and its subsidiaries and assess the capital adequacy for the combined business, while a solo assessment of the parent may consider its own business and its investments in its subsidiaries.

326. There are various possible approaches for group-wide supervision. More specifically, undertaking a capital adequacy assessment of an insurance group falls into two broad sets of approaches:

- group-level focus; and
- legal entity focus.⁵⁸

"Hybrid" or intermediate approaches that combine elements of approaches with a group and a legal entity focus may also be used.

327. The choice of approach would depend on the pre-conditions in a jurisdiction, the legal environment (which may specify the level at which the group-wide capital requirements are set), the structure of the group, and the structure of the supervisory arrangements between the supervisors.

328. To further describe and compare the various approaches to group-wide capital adequacy assessment, a two-dimensional continuum may be considered. On one axis – the organisational perspective – consideration is given to the extent to which a group is considered as a set of interdependent entities or a single integrated entity; on the other axis – the supervisory perspective – consideration is given to the relative weight of the roles of TU or conventional insurance legal entity supervision and group-wide supervision, without implying that the latter can replace the former in any way. It is recognised that supervisors around the world have adopted approaches corresponding to many points of this continuum. The continuum may be split into four quadrants, as shown in Figure 5.

⁵⁸ The term "legal entity" is to be understood in this context as including also TU corporate structures that do not constitute a single legal entity – for example, if *takāful* funds have separate legal personality from the TO.

Figure 5: Illustrating a two-dimensional continuum approach to group-wide capital adequacy assessment

SUPERVISORY PERSPECTIVE		Legal entity focus	Group-level focus
	Large relative weight of group supervision with respect to local supervision	TU or conventional insurer capital adequacy assessed for all (relevant) legal entities taking into account group impact. The results are binding and valid for local supervisors, as well as for the group supervisor.	TU or conventional insurer capital adequacy assessed under the assumption that the group behaves as a single integrated entity. Local and group supervisors additionally define how much capital each TU or conventional insurer has to hold.
	Small relative weight of group supervision with respect to local supervision	TU or conventional insurer capital adequacy assessed for all (relevant) legal entities taking into account group impact. These results are not binding; local supervisors apply the relevant entity capital adequacy requirements to TUs and conventional insurers.	TU or conventional insurer capital adequacy assessed under the assumption that the group behaves as a single integrated entity. These results are not binding; local supervisors apply the relevant entity capital adequacy requirements to TUs and conventional insurers.
ORGANISATIONAL PERSPECTIVE			

Approach to group capital adequacy: Group-level focus

329. Under a group-wide capital adequacy assessment that takes a group-level focus, the insurance group is considered primarily as a single integrated entity for which a separate assessment is made for the group as a whole on a consistent basis, including adjustments to reflect constraints on the fungibility of capital and transferability of assets among group members (and within group members – e.g. where fund segregation is practised). Hence, under this approach, a total balance sheet approach to solvency assessment is followed which is (implicitly or explicitly) based on the balance sheet of the insurance group as a whole. However, adjustments may be necessary appropriately to take into account risks from non-*takāful* and non-insurance members of the insurance group, including cross-sector regulated entities and non-regulated entities.

330. Methods used for approaches with a group-level focus may vary in the way in which group capital requirements are calculated. Either the group’s consolidated accounts may be used as a basis, or an aggregation method may be used. The former is already adjusted for intra-group holdings and further adjustments may then need to be made to reflect the fact that the group may not behave, or be allowed to behave, as one single entity.⁵⁹ This is particularly the case in stressed conditions, but where segregation of funds is practised it will also be necessary on a going concern basis to reflect lack of fungibility within, as well as between, entities. The latter method may sum the solvency position (i.e. the difference between capital resources and capital requirements) for each TU and conventional insurer in the group with relevant adjustments for intra-group holdings in order to measure an overall solvency position at group level. Alternatively, it may sum the TU and conventional insurer capital requirements and TU and conventional insurer capital resources separately in order to measure a group capital requirement and group capital resources. Where an aggregation approach is used for a cross-border insurance group, consideration should be given to consistency of valuation and capital adequacy requirements and of their treatment of intra-group transactions.

⁵⁹ Consolidated accounts may be those used for accounting purposes or may differ (e.g. in terms of the entities included in the consolidation).

Approach to group capital adequacy: Legal entity focus

331. Under a group-wide capital adequacy assessment that takes a legal entity focus, the insurance group is considered primarily as a set of interdependent legal entities. The focus is on the capital adequacy of each of the parent and the other TUs and conventional insurers in the insurance group, taking into account risks arising from relationships within the group, including those involving non-*takāful* and non-insurance members of the group. The regulatory capital requirements and resources of the TUs and conventional insurers in the group form a set of connected results, but no overall regulatory group capital requirement is used for regulatory purposes. This is still consistent with a total balance sheet approach, but considers the balance sheets of the individual group entities simultaneously rather than amalgamating them to a single balance sheet for the group as a whole. Methods used for approaches with a legal entity focus may vary in the extent to which there is a common basis for the solvency assessment for all group members and the associated communication and coordination needed among supervisors.
332. For TUs that are members of groups, and for insurance sub-groups that are part of a wider insurance or other sector group, the additional reasonably foreseeable and relevant material risks arising from being a part of the group should be taken into account in capital adequacy assessment.

Establishing regulatory capital requirements

333. The supervisor should require insurance groups to maintain capital resources to meet regulatory capital requirements. These requirements should take into account the non-*takāful* and non-insurance activities of the insurance group. For supervisors that undertake group-wide capital adequacy assessments with a group-level focus, this means maintaining insurance group capital resources to meet insurance group capital requirements for the group as a whole. For supervisors that undertake group-wide capital adequacy assessments with a legal entity focus, this means maintaining capital resources in each TU and conventional insurance legal entity based on a set of connected regulatory capital requirements for the group's TUs and conventional insurance legal entities that fully take the relationships and interactions between these legal entities and other entities in the insurance group into account.
334. It is not the purpose of group-wide capital adequacy assessment to replace assessment of the capital adequacy of the individual TUs and conventional insurance legal entities in an insurance group. Its purpose is to require that group risks are appropriately allowed for and the capital adequacy of individual TUs and conventional insurers is not overstated – for example, as a result of multiple gearing and leverage of the quality of capital, or of risks emanating from the wider group, and that the overall impact of intra-group transactions is appropriately assessed.
335. Group-wide capital adequacy assessment considers whether the amount and quality of capital resources relative to required capital is adequate and appropriate in the context of the balance of risks and opportunities that group membership brings to the group as a whole, and to TUs and conventional insurance legal entities that are members of the group. The assessment should satisfy requirements relating to the structure of group-wide regulatory capital requirements and eligible capital resources and should supplement the individual capital adequacy assessments of TUs and conventional insurance legal entities in the group. It should indicate whether there are sufficient capital resources available in the group so that, in adversity, obligations to *takāful* participants will continue to be met as they fall due. If the assessment concludes that capital resources are inadequate or inappropriate, then corrective action may be triggered either at a group (e.g. authorised holding or parent company level) or a TU level.
336. The quantitative assessment of group-wide capital adequacy is one of a number of tools available to supervisors for group-wide supervision. If the overall financial position of a group weakens, it may create stress for its members either directly through financial contagion and/or organisational effects or indirectly through reputational effects. Group-wide capital adequacy

assessment should be used together with other supervisory tools, including in particular the capital adequacy assessment of TUs in the group. A distinction should be drawn between regulated entities (*takāful*, insurance and other sector) and non-regulated entities. It is necessary to understand the financial positions of both types of entities and their implications for the capital adequacy of the insurance group, but this does not necessarily imply setting regulatory capital requirements for non-regulated entities. In addition, supervisors should have regard to the complexity of intra-group relationships (between both regulated and non-regulated entities), contingent assets and liabilities, and the overall quality of risk management in assessing whether the overall level of safety required by the supervisor is being achieved.

337. For TUs that are members of groups and for insurance sub-groups that are part of a wider insurance or other sector group, capital requirements and capital resources should take into account all additional reasonably foreseeable and relevant material risks arising from being a part of any of the groups.

Structure of regulatory capital requirements: Solvency control levels

338. While the general considerations in paragraphs 333 to 337 on the establishment of solvency control levels apply in a group-wide context as well as in a legal entity context, the supervisory actions triggered at group level will be likely to differ from those at legal entity level. As a group is not a legal entity, the scope for direct supervisory action in relation to the group as a whole is more limited and action may need to be taken through coordinated action at TU level.
339. Nevertheless, group solvency control levels are a useful tool for identifying a weakening of the financial position of a group as a whole or of particular parts of a group, which may, for example, increase contagion risk or impact reputation which may not otherwise be readily identified or assessed by supervisors of individual group entities. The resulting timely identification and mitigation of a weakening of the financial position of a group may thus address a threat to its stability or that of its component TUs and conventional insurers.
340. Group-wide solvency control levels may trigger a process of coordination and cooperation between different supervisors of group entities that will facilitate mitigation and resolution of the impact of group-wide stresses on TUs within a group. Group-wide control levels may also provide a trigger for supervisory dialogue with the group's management.
341. The supervisor should establish solvency control levels that are appropriate in the context of the approach that is adopted for group-wide capital adequacy assessment. The supervisor should also define the relationship between these solvency control levels and those at TU level for TUs that are members of the group. The design of solvency control levels depends on a number of factors. These include the supervisory perspective (i.e. the relative weight placed on group-wide supervision and legal entity supervision) and the organisational perspective (i.e. the extent to which a group is considered as a set of interdependent entities or a single integrated entity). The solvency control levels are likely to vary according to the particular group and the supervisors involved (see Figure 5). The establishment of group-wide solvency control levels should be such as to enhance the overall supervision of the TUs in the group.
342. Having group-wide solvency control levels does not necessarily mean establishing a single regulatory capital requirement at group level. For example, under a legal entity approach, consideration of the set of capital requirements for individual entities (and interrelationships between them) may enable appropriate decisions to be taken about supervisory intervention on a group-wide basis. However, this requires the approach to be sufficiently well developed for group risks to be taken into account on a complete and consistent basis in the capital adequacy assessment of TUs and conventional insurance legal entities in a group (and, where fund segregation is practised, properly reflecting the funds on which group risks impinge). To achieve consistency for TU assessments, it may be necessary to adjust the capital requirements used for TUs so they are suitable for group-wide assessment.

343. One approach may be to establish a single group-wide PCR, or a consistent set of PCRs for TUs and conventional insurance legal entities that are members of the group, which, if met, would mean that no supervisory intervention at group level for capital reasons would be deemed necessary or appropriate. Such an approach may assist, for example, in achieving consistency of approach towards similar organisations with a branch structure and different group structures (e.g. following a change in structure of a group). Where a single group-wide PCR is determined, it may differ from the sum of TU and conventional insurance legal entity PCRs because of group factors, including group diversification effects, group risk concentrations and intra-group transactions. Similarly, where group-wide capital adequacy assessment involves the determination of a set of PCRs for the TUs and conventional insurance legal entities in an insurance group, these may differ from the TU and conventional insurance legal entity PCRs if group factors are reflected differently in the group capital assessment process. Differences in the level of safety established by different jurisdictions in which the group operates should be considered when establishing group-wide PCR(s).
344. The establishment of a single group-wide MCR might also be considered and may, for example, trigger supervisory intervention to restructure the control and/or capital of the group. A possible advantage of this approach is that it may encourage a group solution where an individual TU or conventional insurer is in financial difficulty and capital is sufficiently fungible and assets are transferable around the group. Alternatively, the protection provided by the supervisory power to intervene at the individual entity level on breach of a TU or conventional insurance legal entity MCR may be regarded as sufficient.
345. The solvency control levels adopted in the context of group-wide capital adequacy assessment should be designed so that, together with the solvency control levels at the TU or conventional insurance legal entity level, they represent a consistent ladder of supervisory intervention. For example, a group-wide PCR should trigger supervisory intervention before a group-wide MCR because the latter may invoke the supervisor's strongest actions. Also, if a single group-wide PCR is used it may be appropriate for it to have a floor equal to the sum of the legal entity MCRs of the individual entities in the insurance group. Otherwise, no supervisory intervention into the operation of the group would be required even though at least one of its member TUs or conventional insurers had breached its MCR.
346. Supervisory intervention triggered by group-wide solvency control levels should take the form of coordinated action by relevant group supervisors. This may, for example, involve increasing capital at the holding company level or strategically reducing the risk profile or increasing capital in TUs or conventional insurance legal entities within the group. Such supervisory action may be exercised via the TUs or conventional insurance legal entities within a group and, where holding companies of TUs or conventional insurers are authorised, via those holding companies. Supervisory action in response to breaches of group-wide solvency control levels should not alter the existing division of statutory responsibilities of the supervisors responsible for authorising and supervising each individual TU or conventional insurance legal entity.

Structure of regulatory capital requirements at the level of the group

347. Approaches to determining group-wide regulatory capital requirements will depend on the overall approach taken to group-wide capital adequacy assessment. Where a group-level approach is used, either the group's consolidated accounts may be taken as a basis for calculating group-wide capital requirements, or the requirements of each TU and conventional insurance legal entity may be aggregated, or a mixture of these methods may be used. For example, if a different treatment is required for a particular entity (e.g. an entity located in a different jurisdiction), it might be disaggregated from the consolidated accounts and then included in an appropriate way using a deduction and aggregation approach.

348. Where consolidated accounts are used, the requirements of the jurisdiction in which the ultimate parent of the group is located would normally be applied. Consideration should also be given to the scope of the consolidated accounts used for accounting purposes as compared to the consolidated balance sheet used as a basis for group-wide capital adequacy assessment to require, for example, identification and appropriate treatment of non-*takāful* and non-insurance group entities.
349. Where the aggregation method is used (as described in paragraph 330), or where a legal entity focus is adopted (as described in paragraph 331), consideration should be given as to whether local capital requirements can be used for TUs and conventional insurance legal entities within the group which are located in other jurisdictions, or whether capital requirements should be recalculated according to the requirements of the jurisdiction in which the ultimate parent of the group is located.

Group-specific risks

350. There are a number of group-specific factors which should be taken into account in determining group-wide capital requirements, including diversification of risk across group entities, intra-group transactions, risks arising from non-*takāful* and non-insurance group entities, treatment of group entities located in other jurisdictions, and treatment of partially owned entities and minority interests. Particular concerns may arise from a continuous sequence of internal financing within the group, or from closed loops in the financing scheme of the group.
351. Group-specific risks posed by each group entity to TUs and conventional insurance members of the group, and to the group as a whole, are a key factor in an overall assessment of group-wide capital adequacy. Such risks are typically difficult to measure and mitigate and include, notably, contagion risk (financial, reputational, legal), concentration risk, complexity risk and operational/organisational risks. As groups can differ significantly, it may not be possible to address these risks adequately using a standardised approach for capital requirements. It may therefore be necessary to address group-specific risks through the use of more tailored approaches to capital requirements, including the use of (partial or full) internal models. Alternatively, supervisors may vary the standardised regulatory capital requirement so that group-specific risks are adequately provided for in the TU and/or group capital adequacy assessment.⁶⁰
352. Group-specific risks should be addressed from both a TU perspective and a group-wide perspective, ensuring that adequate allowance is made. Consideration should be given to the potential for duplication or gaps between TU and group-wide approaches.

Diversification of risks between group entities

353. In the context of a group-wide capital adequacy assessment, there should also be consideration of dependencies and interrelations of risks across different members in the group. However, it does not follow that where diversification effects exist these should be recognised automatically in an assessment of group-wide capital adequacy. It may, for example, be appropriate to limit the extent to which group diversification effects are taken into account for the following reasons:
- Diversification may be difficult to measure at any time, and in particular in times of stress. Appropriate aggregation of risks is critical to the proper evaluation of such benefits for solvency purposes.
 - There may be constraints on the transfer of diversification benefits across group entities and jurisdictions because of a lack of fungibility of capital or transferability of assets.
 - Diversification may be offset by concentration/aggregation effects (if this is not addressed separately in the assessment of group capital).

⁶⁰ See paragraphs 213 to 217.

354. The benefits of diversification depend upon the extent of correlation between the risks. Supervisors should ensure that where diversification effects are permitted, their quantification takes due consideration of correlation between the risks concerned.
355. Where segregation of funds is practised by TUs in the group, no diversification benefit should be recognised between segregated funds (or assets in the SHF earmarked as *qarḍ*) of those TUs and other members of the group, unless the supervisor is satisfied that the funds in question are available to absorb losses elsewhere in the group.
356. An assessment of group diversification benefits is necessary under whichever approach is used to assess group-wide capital adequacy. Under a legal entity approach, recognition of diversification benefits will require consideration of the diversification between the business of a TU and other entities within the group in which it participates and of intra-group transactions. Under an approach with a consolidation focus that uses the consolidated accounts method, some diversification benefits will be recognised automatically at the level of the consolidated group. In this case, supervisors will need to consider whether it is prudent to recognise such benefits or whether an adjustment should be made in respect of potential restrictions on the transferability or sustainability under stress of additional capital resources created by group diversification benefits.

Intra-group transactions

357. Intra-group transactions may result in complex and/or opaque intra-group relationships which give rise to increased risks at both the TU and group level. In a group-wide context, credit for risk mitigation should only be recognised in group capital requirements to the extent that risk is mitigated outside the group. For example, the mitigation of risk by means only of a captive reinsurer or *retakāful* undertaking should not result in a reduction of overall group capital requirements.

Non-takāful and non-insurance group entities

358. In addition to TUs and conventional insurance legal entities, an insurance group may include a range of different types of non-*takāful* and non-insurance legal entities, either subject to no financial regulation (non-regulated entities) or regulated under other financial sector regulation. The impact of all such entities should be taken into account in the overall assessment of group-wide solvency, but the extent to which they can be captured in a group-wide capital adequacy measure as such will vary according to the type of non-*takāful* and non-insurance legal entity, the degree of control/influence on that entity and the approach taken to group-wide supervision.
359. Risks from non-regulated entities are typically difficult to measure and mitigate. Supervisors may not have direct access to information on such entities, but it is important that supervisors are able to assess the risks they pose in order to apply appropriate mitigation measures. Measures taken to address risks from non-regulated entities do not imply active supervision of such entities.
360. There are different approaches to addressing risks stemming from non-regulated entities, such as capital measures, non-capital measures or a combination thereof.
361. One approach may be to increase capital requirements in order that the group holds sufficient capital. If the activities of the non-regulated entities have similar risk characteristics to *takāful* activities, it may be possible to calculate an equivalent capital charge. Another approach might be to deduct the value of holdings in non-regulated entities from the capital resources of the *takāful* legal entities in the group, but this on its own may not be sufficient to cover the risks involved.

362. Non-capital measures may include, for example, limits on exposures and requirements on risk management and governance applied to TUs and conventional insurance legal entities with respect to non-regulated entities within the group.

Cross-jurisdictional entities

363. Group-wide capital adequacy assessments should, to the extent possible, be based on consistent application of TCPs across jurisdictions. In addition, consideration should be given to the capital adequacy and transferability of assets in entities located in different jurisdictions.

Partial ownership and minority interests

364. An assessment of group-wide capital adequacy should include an appropriate treatment of partially owned or controlled group entities and minority interests. Such treatment should take into account the nature of the relationships of the partially owned entities within the group and the risks and opportunities they bring to the group. The accounting treatment may provide a starting point. Consideration should be given to the availability of any minority interest's share in the net equity in excess of regulatory capital requirements of a partially owned entity.

Identification of group capital resources potentially available for group solvency purposes

365. The considerations set out in paragraphs 220 to 252 apply equally to TU and group-wide supervision. The practical application of these considerations will differ according to whether a legal entity focus or a group-level focus is taken to group-wide supervision. Whichever approach is taken, key group-wide factors to be addressed in the determination of group-wide capital resources include multiple gearing, intra-group creation of capital and reciprocal financing, leverage of the quality of capital, and fungibility of capital and free transferability of assets across group entities. There may be particular concerns where such factors involve less transparent transactions (e.g. because they involve both regulated and non-regulated entities or where there is a continuous sequence of internal financing within the group, or there are closed loops in the financing of the group).

Determination of group capital resources to meet group regulatory capital requirements

366. The considerations set out in paragraphs 253 to 307 apply equally to TU and group-wide supervision. See paragraph 365 for additional guidance on the criteria for the assessment of the quality and suitability of capital resources for insurance groups and TUs that are members of groups.

- *Multiple gearing and intra-group creation of capital*

367. Double gearing may occur if a TU invests in a capital instrument that counts as regulatory capital of its subsidiary, its parent or another group entity. Multiple gearing may occur if a series of such transactions exist.

368. Intra-group creation of capital may arise from reciprocal financing between members of a group. Reciprocal financing may occur if a TU holds shares in or makes loans to another entity (either a TU or otherwise) which, directly or indirectly, holds a capital instrument that counts as regulatory capital of the first TU.

369. For group-wide capital adequacy assessment with a group-level focus, a consolidated accounts method would normally eliminate intra-group transactions and, consequently, multiple gearing and other intra-group creation of capital, whereas, without appropriate adjustment, a legal entity focus may not. Whatever approach is used, multiple gearing and other intra-group creation of capital should be identified and treated in a manner deemed appropriate by the supervisor to largely prevent the duplicative use of capital.

- *Leverage*

370. Leverage arises where a parent, either a regulated company or an unregulated holding company, issues debt or other instruments that are ineligible as regulatory capital or the eligibility of which is restricted and down-streams the proceeds as regulatory capital to a subsidiary. Depending on the degree of leverage, this may give rise to the risk that undue stress is placed on a regulated entity as a result of the obligation on the parent to pay remuneration or other returns on such instruments. Leverage stress has the potential to affect the *takāful* funds of TUs indirectly, if the TO seeks to extract or otherwise to use surplus in the *takāful* fund (e.g. by increasing fees) in order to improve its own ability to meet its parent's needs. Stress on the TO also potentially limits its willingness or ability to advance *qarḍ* where necessary.

- *Fungibility and transferability*

371. In the context of a group-wide solvency assessment, excess capital in a TU above the level needed to cover its own capital requirements may not always be available to cover losses or capital requirements in other TUs or conventional insurance legal entities in the group. Free transfer of assets and capital may be restricted by either operational or legal limitations. Some examples of such legal restrictions are exchange controls in some jurisdictions, segregation of funds where this is practised, and rights that holders of certain instruments may have over the assets of the legal entity. In normal conditions, excess capital at the top of a group can be down-streamed to cover losses in group entities lower down the chain. However, in times of stress such parental support may not always be forthcoming or permitted.

372. The group-wide capital adequacy assessment should identify and appropriately address restrictions on the fungibility of capital and transferability of assets within the group in both "normal" and "stress" conditions. A legal entity approach that identifies the location of capital and takes into account legally enforceable intra-group risk and capital transfer instruments may facilitate the accurate identification of, and provision for, restricted availability of funds. Conversely, an approach with a consolidation focus using a consolidated accounts method which starts by assuming that capital and assets are readily fungible/transferable around the group will need to be adjusted to provide for the restricted availability of funds.

Group-wide internal models

373. Where a supervisor allows the use of group-wide internal models⁶¹ to determine regulatory capital requirements, the supervisor should determine modelling criteria for such models, based upon the level of safety required by the supervisor applicable to an insurance group or a TU or conventional insurance legal entity adopting an internal model for that purpose.

374. The modelling criteria for internal models for regulatory capital purposes and the process for internal model approval that a supervisor establishes should require broad consistency between group-wide regulatory capital requirements and regulatory capital requirements of individual TUs or conventional insurance legal entities.

375. Group-wide internal models can vary greatly depending on their group-specific nature. In allowing the use of group-wide internal models for regulatory capital purposes, supervisors should preserve broad consistency between insurance groups and TUs or conventional insurance legal entities with broadly similar risks (e.g. TUs or conventional insurance legal entities and insurance groups operating through a branch structure in a jurisdiction). The supervisor should design modelling criteria and the process for model approval so as to maintain

⁶¹ A group-wide internal model is a risk measurement system a group uses for its internal purposes to analyse and quantify risks to the group as a whole, as well as risks to the various parts of the group, to determine the capital resources needed to cover those risks and to allocate capital resources across the group. Group-wide internal models include partial models that capture a subset of the risks to the group and/or all the risks of a subset of the group. Group-wide internal models also include combinations of models in respect of different parts of the group. A TU's internal model may be part of a broader group-wide model rather than a stand-alone model.

broad consistency between the regulatory capital requirements determined using internal models and standardised approaches.

376. The IFSB recognises that modelling criteria may differ among supervisors. For insurance groups operating in multiple jurisdictions, the degree of consistency in regulatory capital requirements across group members may vary.

377. Each supervisor should set out for which group-wide regulatory capital requirements, corresponding to the solvency control level or levels that apply to an insurance group, the use of group-wide internal models is allowed.

APPENDIX: DEFINITIONS

Term	Definition
Asset–liability management (ALM)	A TO’s coordination of decisions and actions taken with respect to assets and liabilities through the ongoing process of formulating, implementing, monitoring and revising strategies related to assets and liabilities to achieve the TO’s financial objectives, given the risk appetite and other constraints.
Board of directors (board)	A body of elected or appointed individuals ultimately responsible for the governance and oversight of a TU.
Calibration test	A test to demonstrate that the regulatory capital requirement determined by the internal model satisfies the specified modelling criteria.
Capital	The financial resources of a TU of different forms and descriptions including equity capital (i.e. paid-up, share, subscribed), economic capital and regulatory capital. Where segregation of funds is practised, the term also includes financial resources of the fund (or of an arrangement such as an Islamic window).
Capital add-on	An additional capital requirement imposed by the supervisor to address, for example, any identified weaknesses in an internal model or other more tailored approach as a condition on its use or in the context of a review of the ongoing validity of an internal model for regulatory capital purposes.
Capital adequacy	The adequacy of capital resources relative to regulatory capital requirements.
Capital resources	Financial resources that are capable of absorbing losses.
Collateral	Assets held as security in support of a promise to pay a debt or perform other obligations under a contract.
Concentration risk	The risk of adverse changes in the value of capital resources due to the lack of diversification in the risk exposures.
Contagion risk	The risk that an event, whether internal or external, has a negative impact on one legal entity or part of a group and spreads to other legal entities or parts of the group.
Continuum-based approach	Involves the setting of characteristics against which individual capital elements can be assessed as to their quality; instruments are ranked against other instruments to determine whether they are included as capital resources. Where a categorisation approach is used, the criteria will be used to determine the category of capital resources in which a capital element is included.
Control function	Function (whether in the form of a person, unit or department) that has a responsibility in a TU to provide objective assessment, reporting and/or assurance; this includes the risk management, compliance, actuarial and internal audit functions and equivalent functions addressing Sharī’ah compliance.
Control level	A threshold solvency level that requires intervention of the supervisor or imposes certain restrictions on the TU if the actual solvency level falls below this level. Solvency levels may apply at the level of a segregated fund, a legal entity or a group.

Conventional insurance legal entity	A legal entity, including its branches, that is licensed to conduct conventional insurance, regulated and subject to supervision.
Credit default risk	The risk that a TU will not receive the cash or assets to which it is entitled because a party with which the TU has a bilateral contract defaults on one or more obligations.
Credit rating	A category or classification that is assigned to an issuer of debt or a debt instrument based on an evaluation of its creditworthiness.
Credit rating agency	An entity that evaluates and assigns credit ratings to an issuer of debt or a debt instrument.
Credit risk	The risk of adverse changes in the value of capital resources due to unexpected changes in the actual default as well as in the deterioration of an obligor's creditworthiness short of default, including migration risk, and spread risk due to defaults.
Current estimate	The probability weighted average of the range of present values of the cash flows associated with fulfilling a TU's obligations under a <i>takāful</i> policy. For some types of <i>takāful</i> liability, it may be considered that the projection of future cash flows is unrealistic, and therefore presents a spurious level of accuracy in the estimate. For such examples, the alternative estimate should be arrived at using similar considerations regarding the obligations of the contract as for those examples where projected cash flows are realistic.
Customer	A <i>takāful</i> participant or prospective <i>takāful</i> participant with whom a TO or <i>takāful</i> intermediary interacts, and includes, where relevant, other beneficiaries and claimants with a legitimate interest in the policy.
Deficiency	The situation where the liabilities of a fund exceed its assets, so that the fund has a debit balance.
Deficit	The situation where claims and other expenses exceed <i>takāful</i> contributions for a financial period, whether or not a deficiency arises.
Deterministic scenario	An event, or a change in conditions, with a set probability in which the underlying assumptions are fixed.
Double gearing	Used to describe a situation where the same capital is used simultaneously as a buffer against risk in two or more legal entities of a group or, where segregation of funds is practised, two or more funds of a TU.
Duration	A measure that could be used to estimate the sensitivity of the value of an asset or a liability to changes in discount rates.
Economic capital	The capital needed by a TU to satisfy its risk appetite and support its business plans and which is determined from an economic assessment of the TU's risks, the relationship between them and the risk mitigation in place.
Effect horizon	The period over which the shock that is applied to a risk will impact the TU.
Enterprise risk management (ERM)	The strategies, policies and processes of identifying, assessing, measuring, monitoring, controlling and mitigating risks in respect of the TO's enterprise as a whole.
Excess capital	See "solvency margin"

<i>Fatwā</i> (plural <i>Fatāwa</i>)	A juristic opinion given by a Sharī'ah board or other authoritative body or person, on any matter pertinent to Sharī'ah issues, based on the appropriate methodology.
Financial conglomerate	Two or more legal entities, at least one of which is a <i>takāful</i> or conventional insurance legal entity and one a regulated legal entity in the Islamic or conventional securities or banking sectors, where one has control over one or more <i>takāful</i> or conventional insurance legal entities or one or more regulated legal entities in the Islamic or conventional securities or banking sectors and possibly other non-regulated legal entities, whose exclusive or predominant activities consist of providing significant services in at least two different Islamic or conventional financial sectors (banking, securities, insurance).
General purpose financial reports	Financial reports prepared according to generally accepted accounting principles within the relevant jurisdiction to meet the common financial information needs of a wide range of users, including <i>takāful</i> participants and investors.
Going concern basis	An approach for considering a TU's financial situation that assumes it will continue to operate and that future business will be written.
Going concern capital	Capital which achieves the objectives both of reducing the probability of insolvency by absorbing losses on a going concern basis, or in run-off, and of reducing the loss to <i>takāful</i> participants in the event of insolvency or winding-up.
Group risk	The risk that the financial condition of a group or a legal entity within the group may be adversely affected by a group-wide event, an event in a legal entity, or an event external to the group. Such an event may either be financial or non-financial (such as a restructuring).
Group-wide supervisor	The supervisor(s) responsible for effective and coordinated supervision of an insurance group, including coordinating with other relevant supervisors in undertaking the supervision of an insurance group on a group-wide basis, as a supplement to TU or conventional insurance legal entity supervision.
Head of the insurance group	The legal entity that controls the insurance group.
Hedging	Actions taken to offset the impact of risks materialising.
Insurance group	Two or more legal entities, at least one of which is a TU or conventional insurance legal entity, where one has control over one or more TUs or conventional insurance legal entities and possibly other non-regulated legal entities, and whose primary business is <i>takāful</i> or conventional insurance. "Insurance group" includes insurance-led financial conglomerates.
Insurance risk	The risk of adverse change in the value of capital resources due to unexpected changes in the assumptions of pricing or reserving, such as severity, frequency, trend, volatility or level of occurrence rates.
Insurer	Conventional insurance legal entity or insurance group.
Interest rate risk	The risk of exposure to losses resulting from movements in interest rates.
Internal controls	A set of processes, policies and activities governing a TO's organisational and operational structure, including reporting and the control functions.
Internal model	A model which a TO either develops internally or, in the case of an externally developed model, customises for its own use in the calculation of economic

and regulatory capital, measurement of risks, or valuation of balance sheet items.

Investment risk	The risk directly or indirectly associated with or arising from the TU's investment activities.
Legal risk	The risk that a TO may be adversely affected due to legal uncertainty which can arise from unenforceable contracts, change in laws or regulations, or failure to properly comply with legislation.
Leverage	The ability to influence a system in a way that multiplies the outcome of one's efforts without a corresponding increase in the consumption of resources. This implies that leverage is the advantageous condition of having a relatively small amount of cost, which could yield a relatively high level of returns. "Financial leverage" refers to the use of borrowed money to increase the production volume and thus the net earnings. It is measured as the ratio of total debt to total assets. The greater the amount of debt, the greater the financial leverage.
Licence	The formal authority given to conduct <i>takāful</i> activities or <i>takāful</i> intermediation, within a jurisdiction, under the applicable legislation.
Liquidation	A process to terminate the operations and corporate existence of the entity through which the remaining assets of the TU or fund will be distributed to its creditors and owners according to the liquidation claims hierarchy. Branches and funds may also be capable of being put into liquidation, separately from the TU they belong to.
Liquidity risk	The risk that a TU is unable to realise its investments and other assets in a timely manner in order to meet its financial obligations, including collateral needs, as they fall due.
Margin over current estimate (MOCE)	A margin that exceeds the current estimate in valuation of technical provisions to cover the inherent uncertainty of those obligations.
Market-consistent valuation	An economic valuation of a TU's assets and liabilities that is consistent with either the assessment of their risk and value by market participants ("mark-to-market" valuation) or, in the absence of a direct market evaluation, the valuation principles, methodologies and risk parameters that market participants would expect to be used ("mark-to-model" valuation).
Market risk	The risk of adverse change in the value of capital resources due to unexpected changes in the level or volatility of market prices of assets and liabilities.
Minimum capital requirement (MCR)	In the context of a legal entity's or of a fund's capital adequacy assessment, the level of solvency at which, if breached, the supervisor would invoke its strongest actions, in the absence of appropriate corrective action by the TO.
Multiple gearing	Using the same capital simultaneously as a buffer against risk in two or more legal entities of a group. This includes double gearing.
Operational risk	The risk arising from inadequate or failed internal processes or systems, behaviour of personnel, or from external events. Operational risk includes legal risk, Shari'ah non-compliance risk, fiduciary risk and the portion of custody risk that impacts TUs, but excludes strategic and reputational risk.

Participants' investment fund (PIF)	A fund to which a portion of contributions paid by <i>takāful</i> participants is allocated for the purpose of investment and/or savings.
Participants' risk fund (PRF)	A fund to which a portion of contributions paid by <i>takāful</i> participants is allocated for the purpose of meeting claims by <i>takāful</i> participants on the basis of mutual assistance or protection.
Prescribed Capital Requirement (PCR)	In the context of a legal entity's or of a fund's capital adequacy assessment, the level of solvency above which the supervisor does not intervene on capital adequacy grounds.
Regulatory capital	Excess of assets over liabilities, evaluated in accordance with regulation in a particular jurisdiction.
Regulatory capital requirements	Financial requirements that are set as part of the solvency regime and relate to the determination of amounts of capital that a TU or fund must have in addition to its technical provisions and other liabilities.
Reinsurer	A conventional insurer that assumes the risks of a ceding conventional insurer or TU in exchange for a premium.
Reputational risk	The risk that potential negative publicity regarding a TO's business practices will cause a decline in its customer base or brand value, costly litigation, or revenue reductions.
<i>Retakāful</i>	An arrangement whereby a <i>takāful</i> undertaking cedes a portion of its risks on the basis of treaty or facultative <i>retakāful</i> as a representative of participants under a <i>takāful</i> contract, whereby it would contribute a portion of the contribution as <i>tabarru'</i> to a common fund to cover against specified loss or damage.
<i>Retakāful</i> operator	Any establishment or entity that manages a <i>retakāful</i> business, usually, though not necessarily, a part of the legal entity in which the ceding <i>retakāful</i> participants' interests are held.
<i>Retakāful</i> participant	A party that participates as cedant in a <i>retakāful</i> arrangement with the <i>retakāful</i> operator and has the right to compensation under a <i>retakāful</i> contract.
<i>Retakāful</i> undertaking	An undertaking operating under the principles of <i>takāful</i> but in which the <i>takāful</i> participants are themselves <i>takāful</i> undertakings and the risks shared are those of the original <i>takāful</i> undertakings' participants.
Risk appetite	The aggregate level and types of risk a TO is willing for the TU to assume, within its risk capacity, to achieve its strategic objectives and business plan.
Risk capacity	The maximum level of risk a TU can assume given its current level of resources taking into account regulatory capital requirements, economic capital, liquidity needs, the operational environment (e.g. technical infrastructure, risk management capabilities, expertise) and obligations to <i>takāful</i> participants, shareholders and other stakeholders.
Risk management	The process through which risks are managed, allowing all risks of a TU to be identified, assessed, monitored, mitigated (as needed) and reported on a timely and comprehensive basis.
Risk profile	Point-in-time assessment of the TU's gross and, as appropriate, net risk exposures aggregated within and across each relevant risk category based on forward-looking assumptions.

Risk tolerance	In a TU, the active retention of risk that is appropriate for a TU in the context of its strategy and financial strength, and the nature, scale and complexity of its business and risks. Risk tolerance is typically a percentage of the absolute risk-bearing capacity of a TU.
Run-off	A process under which a TU ceases to write new business and administers existing contractual obligations. A “solvent run-off” is the process initiated for a TU that is still able to pay debts to its creditors when the debts fall due. An “insolvent run-off” is the process initiated for a TU that is no longer able to pay debts to its creditors when the debts fall due. Run-off may also apply at the level of a single <i>takāful</i> fund.
Scenario analysis	A method of assessment that considers the impact of a combination of circumstances to reflect historical or other scenarios which are analysed in light of current conditions. Such analysis may be conducted deterministically or stochastically.
Shareholders’ fund	A fund that represents the assets and liabilities of a <i>takāful</i> or <i>retakāful</i> undertaking that are not attributable to participants, where these are attributable to the shareholders or other owners.
Sharī’ah	The practical divine law deduced from its legitimate sources: the Qur’ān, Sunnah, consensus (<i>ijmā</i>), analogy (<i>qiyās</i>) and other approved sources of the Sharī’ah.
Sharī’ah board	Specific body set up or engaged by an institution offering Islamic financial services to carry out, under the authority of the board, the institution’s Sharī’ah governance function.
Sharī’ah non-compliance risk	An operational risk resulting from non-compliance of the institution with the rules and principles of Sharī’ah in its products and services.
Shock period	The period over which a shock is applied to a risk.
Solvency	Financial soundness of a TU, including the ability to meet its obligations to <i>takāful</i> participants when they fall due. Solvency includes capital adequacy, liquidity, technical provisions, and other aspects addressed in an enterprise risk management framework.
Solvency assessment	A process for measuring the current and possible future solvency of a TU relative to the level of policyholder protection required by the solvency regime. This process includes assessing the effectiveness of a TO’s enterprise risk management within the constraints placed on the TU’s operation and the adequacy of the TU’s financial resources, including capital resources.
Solvency control levels	Levels of regulatory capital requirements, which, if breached, trigger restrictions on the TO or TU, or interventions by the supervisory authority. Solvency control levels may operate at the level of an entity, of a fund or of an insurance group.
Solvency margin	Excess of assets over liabilities. (Because these terms are frequently used in an imprecise manner, the glossary refers to available solvency (margin) or available capital, and required solvency margin or required capital.)
Solvency test	The test showing compliance with domestic solvency requirements at a certain point in time (e.g. as of the balance sheet date), either by following a static approach – that is, by comparing available solvency margin with required solvency margin (i.e. the test must show $AS \geq RS$) – or by following

a dynamic approach – that is, an actuarial test based on certain assumptions as to the risk parameters of the existing and potential future portfolio (e.g. mortality, investment yield, distribution of losses, expenses).

Stakeholders	Those with a vested interest in the well-being of <i>takāful</i> or <i>retakāful</i> undertakings, including: <ul style="list-style-type: none"> • employees; • <i>takāful</i> participants or cedants under <i>retakāful</i> arrangements; • suppliers; • the community; and • supervisors and governments.
Statistical quality test	A test to assess the base quantitative methodology of the internal model, which demonstrates the appropriateness of the model inputs and parameters and justifies the assumptions underlying the model.
Stochastic modelling	A methodology that aims to attribute a probability distribution to certain financial variables. It sometimes uses closed-form solutions, and often involves simulating large numbers of scenarios in order to reflect the distributions of the capital required by, and the different risk exposures of, the TU.
Strategic risk	The risk created by a TO's business strategy. Strategic risk includes risks arising from poor business decisions, substandard execution of decisions, inadequate resource allocation, or a failure to respond well to changes in the business environment.
Stress testing	A method of assessment that measures the financial impact of stressing one or more factors which could severely affect the TU.
Subordinated loans/debt/ <i>qarḍ</i>	Loans/debt/ <i>qarḍ</i> (liabilities) that rank after the claims of all other creditors and which are to be paid, in the event of liquidation or bankruptcy, only after all other debts have been met.
<i>Tabarru'</i> commitment	The amount of contribution to be paid by the <i>takāful</i> participant to fulfil the obligation of mutual help and to be used to pay claims submitted by eligible claimants.
Tail value at risk (TVaR or tail VaR)	Value at risk (VaR) plus the average excess over the VaR if such excess occurs over a specified amount of time. Sometimes also called "conditional value at risk", it asks the question: "If things do get bad, how much can we expect to lose?"
<i>Takāful</i>	A mutual guarantee, whereby a group of <i>takāful</i> participants agree among themselves to support one another jointly for the losses arising from specified risks, from a fund to which all commit to donate for the purpose. In this standard, includes <i>retakāful</i> unless the context requires otherwise.
<i>Takāful</i> fund	A fund from which <i>takāful</i> participants' entitlements under <i>takāful</i> contracts are paid.
<i>Takāful</i> intermediary	Any natural person or legal entity that engages in <i>takāful</i> intermediation.
<i>Takāful</i> intermediation	The activity of soliciting, negotiating or selling <i>takāful</i> contracts through any medium where: <ul style="list-style-type: none"> • "Soliciting" means attempting to sell <i>takāful</i>, or asking a person to apply for a particular kind of <i>takāful</i> from a particular TU, for compensation. • "Negotiating" means the act of conferring directly with, or offering advice directly to, a purchaser or prospective purchaser of a particular contract

of *takāful* concerning any of the substantive benefits, terms or conditions of the contract, provided that the person engaged in that act either sells *takāful* or obtains *takāful* from TUs for purchasers.

- "Selling" means to exchange a contract of *takāful* by any means, for money or its equivalent, on behalf of a TU.

<i>Takāful</i> operator	Any establishment or entity that manages a <i>takāful</i> business – usually, though not necessarily, a part of the legal entity in which the <i>takāful</i> participants' interests are held.
<i>Takāful</i> participant	A party that participates in the <i>takāful</i> product with the TU and has the right to compensation or other entitlements under a <i>takāful</i> contract.
<i>Takāful</i> undertaking	An undertaking engaged in <i>takāful</i> business.
<i>Takāful</i> window	A part of a conventional insurer/reinsurer (which may be a branch or a dedicated unit of that institution) that provides <i>takāful</i> or <i>retakāful</i> services.
Technical provisions	The amount that a TU sets aside to fulfil its <i>takāful</i> obligations and settle all commitments to policyholders and other beneficiaries arising over the lifetime of the portfolio, including the expenses of administering the policies, <i>retakāful</i> and the capital required to cover the remaining risks.
Total balance sheet approach	A concept which recognises the interdependence between all assets, all liabilities, all regulatory capital requirements and all capital resources. A total balance sheet approach should ensure that the impacts of all relevant material risks on a TU's (or a fund's) overall financial position are appropriately and adequately recognised. It is noted that the total balance sheet approach is an overall concept, rather than implying use of a particular methodology.
Underwriting risk	The risk that is part of insurance risk other than claim reserve risk.
Underwriting surplus or deficit	The financial result from the risk elements of the business of a <i>takāful</i> fund or <i>retakāful</i> fund, being the balance after deducting expenses and claims (including any movement in technical provisions) from the contributions income.
Use test	A supervisory process for assessing whether the internal model, its methodologies and results, are appropriately embedded into the TO's risk strategy, risk management and operational processes for the TU.
Value at risk (VaR)	An estimate of the worst expected loss over a certain period of time at a given confidence level.
<i>Wakālah</i>	An agency contract where the <i>takāful</i> participants (as principal) appoint the <i>takāful</i> operator (as agent) to carry out the underwriting and investment activities of the <i>takāful</i> funds on their behalf in return for a known fee.
Wrong way risk	The risk that occurs when exposure to counterparties, such as financial guarantors, is adversely correlated to the credit quality of those counterparties.

