

ICP 14 Valuation

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

*Introductory Guidance**Application*

- 14.0.1 The methodologies for calculating items in general purpose financial reports should be substantially consistent with the methodologies used for regulatory reporting purposes and ideally with as few changes as possible to satisfy regulatory requirements. However, this may not be possible or appropriate in all respects, considering the differing purposes. Differences between general purpose financial reports and regulatory reports should be publicly explained.
- 14.0.2 Differences between technical provisions for general purpose financial reports and regulatory reports should be explained in terms of differences in data, discount rate, methodology and assumptions used together with the rationale for why any different approach is appropriate for solvency purposes.
- 14.0.3 To the extent that financial reporting standards are consistent with the standards in this ICP, valuations that are in accordance with those financial reporting standards also may be regarded as compliant with this ICP.
- 14.0.4 The context and purpose of the valuation of assets and liabilities of an insurer are key factors in determining the values that should be placed on them. This ICP considers the valuation requirements that should be met for the purpose of the solvency assessment of insurers. This is within the context of IAIS risk-based solvency requirements (see ICP 17 Capital Adequacy). Solvency requirements reflect a total balance sheet approach on an economic basis and addresses all reasonably foreseeable and relevant risks. An economic basis may include amortised cost valuations and market-consistent valuations that comply with this ICP.
- 14.0.5 A total balance sheet approach (see ICP 17 Capital Adequacy) ensures that the determination of capital resources and required capital is based on consistent assumptions for the recognition and valuation of assets and liabilities for solvency purposes.
- 14.0.6 To achieve consistency with a total balance sheet approach to setting capital requirements, 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.
- 14.0.7 The standards and guidance in this ICP set out the outcomes for the supervisor to achieve. As such, the standards and guidance may not be specific in all cases about which party should take particular actions or

how a particular outcome should be achieved. For example, the intended outcome from a standard or guidance may be achieved through legislation, rules set by an authority other than the jurisdiction's insurance supervisor (eg relating to financial reporting) or through requirements or guidance from other sources.

Solvency purposes

- 14.0.8 The valuation for solvency purposes referred to in this ICP is the valuation of the assets and liabilities used within the broad concept of a risk-based solvency assessment of insurers.
- 14.0.9 Solvency assessment results from the application of supervisory judgment to various measures and estimates of an insurer's current financial position and future financial condition which serve to demonstrate the insurer's ability to meet its policyholder obligations when they fall due. This ICP refers to the financial statements used for solvency assessment as "regulatory financial statements", which may differ from those used for general purpose financial reporting. Regulatory financial statements include a regulatory balance sheet and regulatory capital requirements. The overall solvency assessment may use additional information such as:
- stress and scenario testing;
 - the insurer's own risk and solvency assessment (ORSA); and
 - relevant disclosure.
- 14.0.10 Technical provisions are a significant component of valuation for solvency purposes. They include a margin for risk referred to as the margin over current estimate (MOCE). Regulatory capital requirements are another component of the solvency assessment, and they include further allowance for risk so that when taken together with technical provisions, they are sufficient to ensure that policy obligations are satisfied with the probability of sufficiency required by the supervisor.
- 14.0.11 In adverse circumstances, certain assets may be considered to have reduced or nil value for solvency purposes. 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 (see ICP 17 Capital Adequacy). These adjustments are shown separately from asset values in the regulatory financial statements. This enables improved transparency, consistency, and comparability.

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

- 14.1.1 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.
- 14.1.2 Recognition of rights, obligations and risks arising from insurance contracts as part of the valuation of technical provisions is a significant issue for insurers and supervisors. There are two main 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 non-life insurance.
- 14.1.3 Contracts for ceded reinsurance should be recognised and valued to correspond to the recognition of the risks which they are mitigating. Where a current reinsurance policy is contracted to cover future direct policies, the value of the reinsurance policy should not include any amount with respect to future direct policies that have not been recognised.
- 14.1.4 An insurance contract liability (or a part of an insurance contract liability) within technical provisions should be derecognised when, and only when, it is extinguished (ie when the obligation specified in the insurance contract is discharged or cancelled or expires).
- 14.1.5 The purchase of reinsurance should not result in the derecognition of technical provisions unless the purchase of that reinsurance results effectively in the extinguishment or novation of the insurance contracts.

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

- 14.2.1 Solvency assessment based on consistent valuation of assets and liabilities is a prerequisite for obtaining meaningful insight into the asset-liability positions of an insurer and an understanding of the financial position of an insurer relative to other insurers. It provides reliable information on which to base the actions that are taken by insurers and their supervisors with respect to those positions.
- 14.2.2 The overall financial position of an insurer should be based on the consistent measurement of assets and liabilities. The solvency position includes an additional element consisting of explicit identification and consistent measurement of risks and their potential impact on all components of the balance sheet. This consistent measurement should apply to all assets and liabilities and extend across insurers and time periods to achieve comparability.
- 14.2.3 Undertaking valuation on consistent bases means that differences in values of assets and liabilities can be explained in terms of the specific instrument or contract characteristics, and 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 within an insurance legal entity or an insurance group.

- 14.2.4 Observed market valuations or amortised cost valuations (eg reserve specific calculations) may be used for some assets and liabilities, while valuation models (eg discounted cash flow models), may be used for other assets and liabilities. Calibration of such models to market valuations or amortised cost of other assets and liabilities can assist in achieving consistency.
- 14.2.5 Regulatory capital requirements are determined using a consistent 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. Regardless of the approach used, the assets and liabilities, when taken together with capital requirements, should result in an appropriate recognition of risks.

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

Reliability

- 14.3.1 The values placed on the assets and liabilities of an insurer for solvency purposes should be a reliable measure of their value at the date of solvency assessment.
- 14.3.2 Objectivity is an important aspect of valuing assets and liabilities in a reliable manner, so that a valuation is not influenced inappropriately by an insurer's management. The valuation of assets and liabilities typically involves 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 market-based information, sources of information backed by effective internal control processes, other relevant independent information, as well as 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, portfolio-specific data as well as generally, available data on insurance risks.

Decision-usefulness

- 14.3.3 In the context of this ICP, decision-useful means useful in making judgments for solvency purposes. In valuing assets and liabilities in a reliable manner, and in reducing 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.
- 14.3.4 In some cases, preventive and corrective measures taken by supervisors can only be based on objective calculations. In such cases, an objective

calculation should take precedence over one based on subjective assumptions and methods.

- 14.3.5 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 models.
- 14.3.6 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 majority of situations. There could be a range of market prices for the same item, and judgment may be needed in determining the value.
- 14.3.7 In some circumstances, a market price may not necessarily provide a decision-useful basis for a valuation. The supervisor should evaluate if the use of an alternative economic valuation is appropriate, for example in the event of a dysfunctional or anomalous market.
- 14.3.8 Amortised cost could be a decision-useful value for assets and liabilities where it is a reflection of the amount the insurer will pay and receive over time, and fluctuations in market values are not indicative of the insurer's ability to meet its obligations. Impairment and adequacy testing should complement such valuations.
- 14.3.9 An insurer's modelling of its assets and liabilities may also provide a decision-useful value. The use of best practices surrounding model governance, controls and independent review enhances the reliability of model results. 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 (eg same methodology, time horizon, risk measure, level of confidence).
- 14.3.10 The supervisor should evaluate the extent to which the time value and risk adjustments, where made, add decision-useful information. Where this is not the case, the supervisor may rely on disclosure requirements. 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

- 14.3.11 The valuation should be supported by appropriate public disclosure and additional confidential reporting to the supervisor (see ICP 20 Public Disclosure and ICP 9 Supervisory Review and Reporting). For example, reporting and disclosure of the components of the technical provisions supports the objectives of transparency and comparability.
- 14.3.12 Transparency facilitates understanding and comparability within and across jurisdictions. Insurers should provide sufficient information about the approaches they have taken to the valuation of assets and liabilities, describing how they are undertaken on consistent bases and in a reliable, decision-useful and transparent manner.

14.4 The valuation of assets and liabilities is an economic valuation which reflects the risk-adjusted present values of their cashflows.

- 14.4.1 An economic valuation should reflect the current valuation of projected future cash flows of the asset or liability allowing for the riskiness of those cash flows and the time value of money. 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 current valuation of cash flows.
- 14.4.2 An economic valuation is not obscured by hidden or inherent conservatism or optimism in the valuation. Such an outcome supports the objectives of providing transparency and comparability.
- 14.4.3 All relevant information available about current market assessments of value and risk and the principles, methodologies and parameters used in the relevant markets should be considered for assessing the value of an asset or liability.
- 14.4.4 The historic cost of an asset or liability may not reflect a current valuation of projected future cash flows and may 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 current valuation of future projected cashflows, when used in conjunction with an impairment or adequacy test.
- 14.4.5 Some jurisdictions use a subset of economic valuation known as market-consistent valuation; some jurisdictions use a subset of economic valuation known as amortised cost.

Market-consistent valuation

- 14.4.6 It may be appropriate to use market-consistent values - values based upon principles, methodologies and parameters that the financial markets would expect to be used for the economic valuation of assets and liabilities. Where a range of assessments and approaches is evident from a market, a market-consistent valuation is one that falls within this range.⁵
- 14.4.7 The market-consistent approach may involve market assessments for some assets and insurance liabilities. The components of a market-consistent approach may use modelling based on certain assumptions and techniques and portfolio specific information as well as generally available data on insurance risks.
- 14.4.8 In exceptional circumstances there may be a need to take into account information from the wider economy, in addition to that from market assessments. Circumstances may include where a market is anomalous, not operating effectively or is subject to intervention from the relevant authorities. Such intervention 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.

- 14.4.9 In such cases, a market-consistent value may not be appropriate and a different value, which may 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 at different times. If such circumstances arise, the supervisor should provide guidance as to the appropriate values or adjustments insurers should use for solvency purposes to maintain consistency, reliability, decision-usefulness and transparency.
- 14.4.10 A sufficiently active market may exist for an asset or 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. For example, if a component of the obligations of an insurance 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.
- 14.4.11 The market-consistent value of an asset or liability may be determined using different techniques. For example:
- if assets or liabilities are traded in a sufficiently deep and liquid market, the observed prices may be used to arrive at a market-consistent value. The availability, reliability and decision-usefulness of the prices should be taken into account when deriving the market-consistent value;
 - if some or all of the cash flows associated with assets or liabilities can be replicated using financial instruments, the market value of the replicating financial instruments may be used as the value of those cash flows;
 - if the cash flows associated with the assets or liabilities cannot be replicated fully, 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.
- 14.4.12 In some cases, assets or liabilities may be valued using a components approach, under which components are valued at market value where such a value is ascertainable, reliable and decision-useful; other components may need to be valued using mark-to-model methods. Separate components may be identifiable for insurance contracts which have an investment or deposit component and an insurance risk component. The components approach may help to improve market consistency and reduce modelling error. Where there is no sufficiently

deep liquid market from which to determine a market-consistent value for a risk component, the additional liquidity risk should be considered.

Fulfilment value

- 14.4.13 A fulfilment value, based on fulfilment cashflows, is an approach to valuation that reflects many of the same factors as a market-consistent value although from an entity-specific rather than from a market-participant perspective. More specifically, a fulfilment value is based on the present value of the cash or other assets that an entity expects to be obliged to transfer as it fulfils a liability. The amounts taken into account for such a valuation include those to be transferred to the liability counterparty as well as those that the entity expects to transfer to other parties to enable it to fulfil the liability (eg relevant expenses). For the purpose of this ICP, fulfilment value is viewed as being broadly equivalent to a market-consistent value.

Amortised cost valuation

- 14.4.14 It may be appropriate to use an amortised cost method for economic valuation of assets and liabilities. Amortised cost method determines the value of an asset or liability at any point in time as the present value of future cash flows discounted at an appropriate interest rate, with a suitable adjustment for risk.
- 14.4.15 When using the amortised cost method the discount rate 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 time of purchase. When the price paid reflects the risk of the instrument at the time of purchase, an adjustment for the risk at that time is implicitly included in the discount rate.
- 14.4.16 When valuing 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.
- 14.4.17 When an amortised cost method is used, the values produced should be evaluated for impairment and 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, when the liability value is found to be inadequate, it should be adjusted such that the liability is appropriately valued. Adjustments should also be made to reduce any significant, undue conservatism identified.

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

- 14.5.1 Reflecting the insurer's own credit standing in the value of technical provisions and other liabilities would weaken the protection offered to policyholders since a fall in creditworthiness would result in a reduced valuation of liabilities.

- 14.5.2 The credit standing of a reinsurer should be taken into account when considering the solvency of a ceding (re)insurer even if the contractual cash flows are the same (see ICP 13 Reinsurance and Other Forms of Risk Transfer). The risk of reinsurer default could be covered either by adjustments made to the value of assets in determining capital resources or the regulatory capital requirements (see ICP 17 Capital Adequacy).
- 14.5.3 Where the liabilities are subordinated to the insurer's obligations with respect to insurance contracts, the value of the liability (eg at initial recognition) may reflect the lower expected recoveries in the event of a default. .

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

- 14.6.1 The current estimate should reflect the present value of projected future cash flows under an existing insurance contract to the extent that they are integral to the fulfilment of the obligations under that contract. This encompasses any cash flows, including non-guaranteed optional or discretionary cash flows, where they stem from the contractual relationship between the insurer and the policyholder. This reflects the commercial substance of the contract and therefore reflects economic reality.
- 14.6.2 An insurer's obligations under an insurance policy are inherently uncertain as to amount and/or timing, so the present value of projected future cash flows associated with fulfilling them has a range of possible values with varying probabilities. The probability weighted average of these present values is referred to as the current estimate. Actuarial and statistical techniques may be used in determining the current estimate, including deterministic, analytical and simulation techniques.
- 14.6.3 An insurance contract should be considered as a whole. In particular, where the contract provides for the payment of future premiums, such premiums are integral to the fulfilment of the obligations under that contract. Valuation of the insurance liability requires consideration of all associated cash flows, including the contractual premium 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.

Contract boundary

- 14.6.4 The supervisor should specify boundaries for insurance contracts that define the relevant cash flows to be included in determining the current estimate. Insurance contracts may be subject to the following boundary constraints:
- contractual termination as extended by any unilateral option available to the policyholder;
 - the insurer having a unilateral right to cancel or freely re-underwrite the policy; or

- both the insurer and policyholder being jointly involved in making a bilateral decision regarding continuation of the policy.
- 14.6.5 For certain types of long-duration life policies with an indefinite term, these would be evaluated through the potential life of a policyholder, allowing for lapse or surrender in the probabilities attached to each cashflow.
- 14.6.6 The first boundary constraint excludes new business arising from the rolling-over of the existing contract, except where such roll-over is due to exercising an explicit option available to the policyholder under the current contract. Contractual cash flows arising from in-the-money options available at the policyholder's sole discretion 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 premium contributions, except where provided at the policyholder's sole discretion as an option under the contract. For insurance contracts with variable premiums, the cash-flows may include voluntary contributions above the minimum required to the extent that there are guarantees, under the current contract. The current estimate should reflect the expected rate of payment of additional contributions and the expected level of such contributions.
- 14.6.7 The second boundary constraint clarifies that future cash flows arising from events beyond the point where the insurer can unilaterally cancel the contract (eg, by re-underwriting) are not included in the valuation. This is the case with most non-life insurance contracts which are typically written for only one year. Although there may be a high expectation that they would be renewed, the insurer is not bound to do so, and accordingly only cash flows arising with respect to the currently in-force or in run-off contracts, are included for valuation purposes, whereas the impact of new business may be considered in capital requirements or capital resources by the solvency regime. By contrast, future cash flows under a life or disability contract which the insurer cannot unilaterally cancel should be included, even if the future premiums under such a contract are planned to increase or are able to be varied by the insurer with respect to the entire class of contracts without individual underwriting.
- 14.6.8 The third boundary constraint clarifies that even if the policyholder has an option to continue or increase the contract, if it requires the insurer's consent then cash flows arising from events beyond that point should not be included for valuation purposes. The impact of new business may be considered in capital requirements or capital resources by the solvency regime.

Discretionary payments

- 14.6.9 Some insurance contracts give the policyholder both guaranteed benefits and a right to participate in the performance of the relevant class of contracts, related assets or both. The insurer has some discretion over

the amount or timing of the resulting distributions to policyholders, but there are often constraints over that discretion.

- 14.6.10 When establishing the future cash flows to include in the determination of technical provisions for solvency purposes, consideration should be given to all payments whether or not these payments are contractually guaranteed under an insurance contract. For example, future discretionary bonuses that the insurer expects to make should be included.
- 14.6.11 In view of the wide variety of participating contracts and legal frameworks in different jurisdictions, the supervisor should establish criteria appropriate to its jurisdiction for the allowance of discretionary elements associated with participating contracts in the valuation of technical provisions. These should reflect the principles of a consistent, reliable, decision-useful, and transparent valuation.
- 14.6.12 In many jurisdictions, accumulated profits attributable to a class of policyholders are accounted for separately by the insurer. Where such accumulated profits can be used to absorb losses to protect policyholder interests in a period of stress, they may possess all the characteristics of capital and may be recognised in the determination of capital resources for solvency purposes. In such a case, it is important that the criteria established by the supervisor for the allowance of future discretionary benefits in the valuation of technical provisions are compatible with the criteria for determining capital resources to achieve a consistent overall assessment of the solvency position of the insurer.

Unbiased current assumptions

- 14.6.13 Unbiased current assumptions are derived from a combination of relevant, credible experience as well as judgment about expected future development, (eg improving mortality rates, inflation of expenses that neither 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 so that data and assumptions remain appropriate to current conditions.
- 14.6.14 Observable data (such as interest rates, financial market prices and inflation rates) may be expected to be different each time the current estimate is determined. Where assumptions are derived from observed values in the market, these should be the observed values current at the date of the valuation.
- 14.6.15 Regular experience analysis, considering the individual entity and relevant industry experience, should be undertaken to support the assumptions used in determining the current estimate. 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.

- 14.6.16 Where the credibility of an insurer's own experience is low (eg for a small or new portfolio of insurance contracts), assumptions based on relevant industry experience are likely to be more decision-useful as a basis for projecting cash flows.
- 14.6.17 The assumptions used should reflect the characteristics of the portfolio rather than those of the particular insurer holding that portfolio. However, the characteristics of the portfolio underwritten by an insurer may reflect aspects of an insurer's specific business practices, particularly with regard to its underwriting, claims handling and expenses. Insurer-specific information may be appropriate where the insurer's business model and practices are sufficiently substantiated as representative of the portfolio and similar information is used in market valuations.
- 14.6.18 With respect to expenses, the insurer's own expense experience in managing a portfolio is likely to be relevant in determining an economic value.
- 14.6.19 Acquisition costs are typically a major component of an insurer's expenses and are usually a significant component of an insurer's cash flows. For most insurance contracts, acquisition costs will already have been incurred so that future cash flows include only maintenance and claims costs. An appropriate analysis of the insurer's expense experience is needed to separate out acquisition costs to model future expenses. Care is needed to allow for expenses that do not vary directly with the level of new business.

14.7 The value of technical provisions corresponds to the current estimate and a MOCE.

- 14.7.1 Technical provisions are assets or liabilities that represent the economic value of the insurer fulfilling its insurance obligations to policyholders arising over the lifetime of the insurer's portfolio of insurance policies.
- 14.7.2 The cash flows associated with fulfilling an insurer's insurance obligations include the premiums receivable, the claims payable under the insurance policies, any other policy cash flows (eg future distributions under participating contracts) and the future expenses of administering the policies.
- 14.7.3 In addition to covering the cash flows associated with fulfilling insurance obligations, an insurer incurs the cost of covering the uncertainty inherent in those cash flows through holding capital, or through hedging, reinsurance, or other forms of risk mitigation. Insurers are required to maintain a margin such that the obligations under insurance policies will be fulfilled with the policyholder when they fall due. In principle, an economic value of the technical provisions exceeds the current estimate by an amount covering this uncertainty. This margin is the MOCE.
- 14.7.4 In jurisdictions where insurers hold capital to cover the cost of uncertain cash flows, the MOCE would also cover the cost of holding that capital. Where the MOCE provides a specified level of confidence, it can be considered to include the cost of holding that capital. In these

circumstances, the MOCE may be seen as a provision compensating for the capital committed to the business over the outstanding lifetime of the policy. As the uncertainty reduces over time, so will the MOCE which will be gradually released from the technical provisions. Equally, as uncertainty reduces, the required capital would reduce in line with the revised risk profile.

- 14.7.5 It may not be necessary, to determine the current estimate and the MOCE separately. Technical provisions may include an explicit or implicit MOCE. For example, a reliable market valuation may automatically include a MOCE.
- 14.7.6 Where the technical provisions include an implicit MOCE, the supervisor may consider whether the current estimate and MOCE should be separately reported to help assess whether the technical provisions are consistent and reliable.
- 14.7.7 The supervisor should require insurers to report and justify any change in underlying data or assumptions generating a change in current estimate and MOCE so that consistency, reliability, decision-usefulness and transparency may be maintained and arbitrary changes over time are avoided.

14.8 The MOCE reflects the inherent uncertainty in the current estimate.

- 14.8.1 The MOCE is an estimated measure of the uncertainty inherent in the cash flows associated with fulfilling an insurer's insurance obligations. To achieve a consistent, reliable and decision-useful valuation, the MOCE should reflect all of the inherent uncertainty attached to the policy obligations over the full period of those obligations including the variability of all relevant future cash flows to the extent to which this uncertainty is borne by the insurer and not the policyholder.
- 14.8.2 Different methods may be used to measure this uncertainty. In choosing a methodology, due consideration should be given to the uncertainty being measured. For some cases, observable market prices may be available. Other methods include quantile, conditional tail expectation, cost of capital and explicit assumption. 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. Once established, the methodology should not be changed from one valuation to the next unless there is a reasonable rationale for change.
- 14.8.3 Only uncertainty 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.
- 14.8.4 In some jurisdictions it may be considered appropriate, due to inherent uncertainty in policy obligations and profit, that no component of premium related to such considerations should be recognised in profit at

the inception of a contract. In those jurisdictions, the inherent uncertainty is effectively represented by the difference between premium received and the current estimate. Other jurisdictions may take the view that one of the other methodologies provides a decision-useful estimate of the level of uncertainty in determining the MOCE and may allow potential gain to be recognised at inception of a contract.

- 14.8.5 It is appropriate to differentiate between the cash flow estimate uncertainty specific to the portfolio of insurance obligations and the uncertainty associated with the operations of the particular insurer. Only uncertainties that are portfolio specific are inherent to the policy obligations and should be taken into account in the MOCE.
- 14.8.6 In determining the appropriate methodology for the MOCE, the supervisor should consider the extent to which possible methodologies promote transparency and comparability between insurers and insurance markets.
- 14.8.7 An appropriate method for the determination of the MOCE would be expected to exhibit the following characteristics:
- insurance 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 result in 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 timeframe 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; and
 - to the extent that emerging experience reduces uncertainty, MOCEs should decrease, and vice versa.
- 14.8.8 In establishing appropriate criteria or methods for determining the MOCE, the supervisor should consider the diversification of the cash flow estimate uncertainty reflected in the MOCE.
- 14.8.9 Consideration should be given to the segmentation of the insurance policies of the insurer into separate portfolios and the impact this has on the diversification of inherent risk factors that is taken into account. Segmentation (eg by line of business) may be undertaken for calculation purposes and may mean that diversification of uncertainty inherent in the cashflows that is taken into account in the MOCE but diversification across portfolios is not. 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 be addressed as an offset to regulatory capital requirements, if appropriate. The MOCEs for the total business of the insurer would be the sum of the MOCEs of its portfolios.

- 14.8.10 Where an element of an insurance liability can be replicated or hedged 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. Such hedging is rarely perfect in all scenarios and there are some differences between the insurance cash flows and those of the replicating instrument which should be valued separately.

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

- 14.9.1 In developing these criteria, the supervisor should consider:
- the economics of the insurance obligations in its jurisdiction including their nature, structure, and term; and
 - the extent (if any) to which benefits are dependent on underlying assets.
- 14.9.2 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.
- 14.9.3 To the extent that a risk is taken into account elsewhere in the balance sheet by alternative means, there should be no allowance for that risk in the chosen discount rates.
- 14.9.4 As the discount rates should reflect the economics of the insurance obligations, any observed yield curve should be adjusted to account for differences between the economics of the observed instrument and those of the insurance obligations.
- 14.9.5 The criteria should 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 interest rate term structure.
- 14.9.6 In principle, if an investment has a reliable market value and fully replicates or hedges an element of the insurance obligations or risks, such a value is presumed to reflect the time value of money.

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

- 14.10.1 The determination of technical provisions should make explicit allowance for any options of the policyholder or insurer and for guarantees embedded in the insurance contract. The method used to value

embedded options and guarantees may include stochastic simulation or simplified methods.

- 14.10.2 An important policyholder option is the option to lapse and, for some life 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 insurance contract. Historical experience of lapses and surrenders is decision-useful in considering assumptions about future experience used for calculating technical provisions. The uncertainty associated with lapses and surrender may not be fully diversifiable across insurance contracts as the level of lapses and surrenders may depend on economic conditions or perceptions about the performance of the insurer which apply generally to policyholders. This is offset by variations in policyholders' 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.
- 14.10.3 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 may be reflected in regulatory capital requirements.