

Educational Note

Current Estimates under International Financial Reporting Standards

Practice Council

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Members should be familiar with educational notes. Educational notes describe but do not recommend practice in illustrative situations. They do not constitute Standards of Practice and are, therefore, not binding. They are, however, intended to illustrate the application (but not necessarily the only application) of the Standards of Practice, so there should be no conflict between them. They are intended to assist actuaries in applying Standards of Practice in respect of specific matters. Responsibility for the manner of application of Standards of Practice in specific circumstances remains that of the members in the Life and Property and Casualty Insurance practice areas.

Memorandum

To: Members in the Life Insurance and Property and Casualty Insurance Practice Areas
From: Jacques Tremblay, Chairperson
CIA Practice Council
Date: June 25, 2009
Subject: **Educational Note: Current Estimates under International Financial Reporting Standards**

Document 209058

International Financial Reporting Standards (IFRS) will be effective in Canada for interim and financial statements relating to fiscal years starting on or after January 1, 2011.

In preparation for this conversion, the Practice Council has examined the International Actuarial Standards of Practice (IASPs) that have been issued by the International Actuarial Association (IAA), and has decided to release selected IASPs, as either Educational Notes or Research Papers, to assist CIA members in the application of IFRS. Since the IASPs were originally published by the IAA, they are presented in a different format and may use somewhat different terminology than that used in the Standards of Practice and Educational Notes developed by the CIA. Nevertheless, the Practice Council has decided to release the documents without modification.

This Educational Note addresses professional services related to the selection of current estimates for the measurement of investment contracts, service contracts and certain embedded derivatives for purposes of preparation or review of financial statements in accordance with IFRS. It was originally published by the IAA as IASP 5.

In accordance with the CIA's Policy on Due Process for the Approval of Guidance Material Other than Standards of Practice, this Educational Note has received final approval for distribution by the Practice Council on June 4, 2009.

As outlined in subsection 1220 of the Standards of Practice, "*The actuary should be familiar with relevant Educational Notes and other designated educational material.*" That subsection explains further that a "practice which the Educational Notes describe for a situation is not necessarily the only accepted practice for that situation and is not necessarily accepted actuarial practice for a different situation." As well, "Educational Notes are intended to illustrate the application (but not necessarily the only application) of the standards, so there should be no conflict between them."

If you have any questions or comments regarding this Educational Note, please contact Jacques Tremblay, Practice Council Chair, at his CIA Online Directory address, jacques.tremblay@oliverwyman.com.

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This Practice Guideline applies to an actuary only under one or more of the following circumstances:

- If the Practice Guideline has been endorsed by one or more IAA Full Member associations of which the actuary is a member for use in connection with relevant International Financial Reporting Standards (IFRSs);
- If the Practice Guideline has been formally adopted by one or more IAA Full Member associations of which the actuary is a member for use in connection with local accounting standards or other financial reporting requirements;
- If the actuary is required by statute, regulation, or other binding legal authority to consider the Practice Guideline for use in connection with IFRS or other relevant financial reporting requirements;
- If the actuary represents to a principal or other interested party that the actuary will consider the Practice Guideline for use in connection with IFRS or other relevant financial reporting requirements; or
- If the actuary's principal or other relevant party requires the actuary to consider the Practice Guideline for use in connection with IFRS or other relevant financial reporting requirements.

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1. Scope

The purpose of this PRACTICE GUIDELINE (PG) is to give advisory, non-binding guidance to ACTUARIES or other PRACTITIONERS that they may wish to take into account when providing PROFESSIONAL SERVICES in accordance with INTERNATIONAL FINANCIAL REPORTING STANDARDS (IFRSs) related to the selection of CURRENT ESTIMATES for the measurement of INVESTMENT CONTRACTS, SERVICE CONTRACTS, and certain EMBEDDED DERIVATIVES issued by REPORTING ENTITIES. This PG applies where the reporting entity is an ISSUER of INSURANCE CONTRACTS, investment contracts, or service contracts. It is a class 4 INTERNATIONAL ACTUARIAL STANDARD OF PRACTICE (IASP).

With regard to INTERNATIONAL FINANCIAL REPORTING STANDARD (IFRS) 4, this PG excludes from its scope the selection of current estimates for insurance contracts where national accounting measurement is applicable. The selection of current estimates for LIABILITY ADEQUACY TESTING, testing for recoverability of deferred transaction cost assets, and testing for onerous service contracts is addressed in the PG on those topics, rather than in this PG.

Reliance on information in this PG is not a substitute for meeting the requirements of the relevant IFRSs. Practitioners are therefore directed to the relevant IFRSs (see Appendix A) for authoritative requirements. The PG refers to IFRSs that are effective as of 16 June 2005, as well as to those amended IFRSs not yet effective as of 16 June 2005 but for which earlier application is encouraged. If IFRSs are amended after that date, practitioners should refer to the most recent version of the IFRS.

2. Publication Date

This PG was published on 16 June 2005, the date approved by the Council of the INTERNATIONAL ACTUARIAL ASSOCIATION (IAA).

3. Background

This PG focuses on current estimates developed for use in the application of IFRSs, including measurement of applicable values of investment contracts, service contracts, and certain embedded derivatives. It is expected that it will be expanded at a later date to address applicable issues regarding the adoption of an IFRS incorporating the results of Phase 2 of the INTERNATIONAL ACCOUNTING STANDARDS BOARD'S (IASB) insurance contract project.

In this PG, a *current estimate* is defined as the estimation of the expected value based on current knowledge. In actuarial literature, the term *best estimate* is often used synonymously with *current estimate*. As *best estimate* has a defined meaning under IFRS, which is not consistent with common actuarial usage, the term *current estimate* has been used in this PG. The concept of a current estimate is used widely within RECOGNISED ACTUARIAL PRACTICE, but terminology can vary among countries.

There are various references within accounting literature regarding the use of estimates of future cash flows. In some instances a current expected value (i.e., mean or probability-weighted) is implied, while in others reference is made to a combination of a current estimate of a cash flow together with a corresponding MARGIN FOR RISK AND UNCERTAINTY of that cash flow. This PG when referring to current estimates addresses only the portion of these estimates that does not provide for their corresponding margins for risk and uncertainty. This PG does discuss the development of market assumptions. Some observed market data would include margins for risk

and uncertainty. The actual assumptions used for determining the margins for risk and uncertainty in the carrying amount would depend on the accounting measurement approach.

The following paragraphs indicate applicable IFRS references.

The accounting guidance in INTERNATIONAL ACCOUNTING STANDARD (IAS) 39 refers to:

1. Initial measurement of a FINANCIAL LIABILITY. This refers to original COST, which usually reflects relevant pricing assumptions used at that time (IAS 39.43). The accounting guidance in IAS 39 anticipates that pricing assumptions for the CONTRACT are usually based on current estimates plus the addition of applicable margins for risk and uncertainty as observed in a relevant and reliable market place;
2. Subsequent AMORTISED COST measurements. Reference is made in the definition of EFFECTIVE INTEREST METHOD (IAS 39.9) to *estimated future cash flows*. This accounting guidance thus appears to imply that just current estimates should be used;
3. Subsequent FAIR VALUE measurements. The use of the discounted cash flow approach in IAS 39, AG75, used to measure fair value, appears to imply that current estimates plus the addition of a margin for risk and uncertainty should be used; and
4. Impairment and uncollectibility of financial assets (IAS 39.59). Reference is made to the impact on the *estimated future cash flows*. This accounting guidance relates to the applicable measurement selected for the specific FINANCIAL INSTRUMENT.

The accounting guidance in IAS 18 refers to the method for measuring the services performed for the determination of completion of services. In IAS 18.24, the accounting guidance appears to imply that just current estimates should be used.

The accounting guidance in IAS 37 refers to the term *best estimate*. IAS 37.36 refers to the amount (as opposed to assumption) “recognized as a PROVISION should be the best estimate of the expenditure required to settle the present obligation at the balance sheet date.” IAS 37.37 indicates that “the best estimate of an expenditure required to settle the present obligation is the amount that an enterprise would rationally pay to settle the obligation at the balance sheet date or to transfer it to a third party at that time.” IAS 37.42 goes on to say that risks and uncertainties inevitably surround many events and, therefore, some allowance for existing circumstances normally would be made in reaching a best estimate of a provision. This appears to imply that current estimates plus the addition of a margin for risk and uncertainty should be used. This use of the term *best estimate* is not the same as *current estimate* in this PG. This PG does not address the determination of risk margins.

The accounting guidance insurance contract standard, IFRS 4, refers to the term *current estimate*. IFRS 4.15 and 4.16 use this for the purposes of a liability adequacy test. IFRS 4.24 and 4.28 use this regarding the tests that are applied regarding continuing or changing ACCOUNTING POLICY. The accounting guidance appears to imply that just current estimates should be used. This use appears to be consistent with the use of *current estimate* in this paper.

The most frequently applicable IFRSs pertaining to this PG are outlined in Appendix A.

4. Practice Guideline

The PG approaches the setting of assumptions from two perspectives: (1) data and other assumptions and (2) market-based and non-market-based assumptions. Non-market-based

assumptions are then subdivided between contract specific, portfolio specific, and reporting entity specific. The two perspectives are intended both to be comprehensive to the assumption universe and to illustrate different aspects of establishing current estimates.

4.1 Assumptions

4.1.1 Approach

Data assumptions are the assumptions that are normally made to compensate for insufficiency or unreliability of data. Other assumptions may relate to the legal, economic, demographic, and social environment on which the MODEL and data assumptions depend. The practitioner may wish to consider whether the selections of assumptions are reasonable in themselves and in the aggregate, as well as reasonable at the level of contracts that is subject to broadly similar risks and managed as a portfolio. In case the practitioner starts with assessing the reasonableness of the assumptions separately, the practitioner may need to consider the consistency between the various assumptions.

In assessing the reasonableness of the assumptions, the practitioner may wish to consider that some assumptions may not be material to the outcomes and hence may not require detailed consideration.

With respect to future events, including changes in legislation and future technological change that may affect the amount and timing of future cash flows under an investment contract, a distinction is usually made between reflecting events that may happen at some indeterminate time in the future and reflecting anticipated events that appear reasonably likely to occur based upon appropriate objective evidence. Additional accounting guidance is available in IAS 37.

4.1.2 Selection of a current estimate

The practitioner generally selects current estimate assumptions that do not vary by the measurement basis used, be it for calculating amortised cost, estimating fair value or revenue, or assessing progress of a service transaction. An example is an investment contract with both a SERVICE COMPONENT and a financial instrument component. The same current estimate would be expected to be used for the discontinuance assumption for both COMPONENTS. While the same assumptions may be used, the application of additional accounting requirements, like a deposit floor, might result in the final carrying amount not being derived solely from such assumptions.

4.1.3 Taking into account the model selected

When selecting assumptions, the practitioner generally takes into account the model selected. Non-linearities in the model may mean that expected value assumptions do not lead to expected value estimates. If a single or a series of probability distributions has been derived for an assumption, this will often be represented by a single current estimate assumption unless the model has the capability of accepting a probability distribution. The mean of that distribution would normally be used.

The practitioner normally would consider the impact of the model on the distribution of potential outcomes. Where the BENEFITS being valued contain elements of optionality, or the potential liability outcomes have an asymmetrical distribution, then the value of the contract usually would include an appropriate value reflecting the effect of those OPTIONS and/or asymmetries. All but the simplest mathematical models can exhibit non-linear behaviour, particularly in association with skewed probability distributions. It should also be noted that, for a skewed distribution, the most likely value is not the same as the mean.

4.1.4 Specific to the book of contracts

The practitioner would consider the circumstances of the situation in selecting assumptions. The current estimate assumptions, when taken together, would generally reflect all pertinent areas of future experience and be specific to the contract or book of contracts being measured. The practitioner generally selects assumptions that are appropriately:

1. Comprehensive;
2. Internally consistent;
3. Representative of future expected experience;
4. Reasonable for the contract or book of contracts;
5. Supportable; and
6. Explicit.

4.1.5 Correlation between assumptions

The practitioner generally considers the correlation between current estimate assumptions. For example, where there is a reasonably reliable correlation between non-market assumptions (such as lapses or expenses) and market assumptions (such as investment returns or inflation), this correlation would usually be incorporated in the assumptions used. This means that a particular assumption could be related to another either through the use of a deterministic formula, a stochastic approach, or an analytical approach.

Where a contractual or legal linkage exists, e.g., between the rights and obligations linked through DISCRETIONARY PARTICIPATION FEATURES or reinsurance, the practitioner generally selects assumptions that are consistent with the assumptions of the linked item. A particular economic assumption in a scenario relating to future equity GUARANTEES normally would be applied consistently to both linked contracts, such as for both direct insurance and reinsurance.

4.2 Types of assumptions

4.2.1 Introduction

When setting current estimate assumptions, the practitioner would generally, with respect to each of the assumptions used in the valuation of liabilities, establish the assumptions about future experience that:

1. Are made using professional judgment, training, and experience;
2. Are made having due regard to reasonable available statistics and other relevant information; and
3. Are neither deliberately overstated nor deliberately understated.

The practitioner generally bases assumptions on the most relevant and reliable available source(s).

Assumptions can be categorised as follows:

1. Market assumptions, referring to market assessments of values;
2. Contract-specific or portfolio-specific assumptions, referring to characteristics of the contract to be measured or, in cases where the portfolio is the UNIT OF ACCOUNT or

measurement basis, characteristics of the portfolio containing the contract to be measured or similar contracts or contract portfolios; and

3. Reporting entity-specific assumptions, referring to characteristics specific to contracts issued by the reporting entity.

The last two categories are sometimes referred to as non-market assumptions. Also, the accounting literature refers to entity-specific assumptions when not using observable market data.

Although assumptions can generally be categorised as in the list above, it should be noted that some assumptions are a combination of market assumptions and non-market assumptions.

Current market assumptions usually refer to those assumptions based on observable data on the effective date of measurement, for example market-published security prices or government bond returns. However, often data are not available as of the date of measurement but require data collection over a period of time. In that case, priorities between timeliness and reliability of assumptions have to be established. In any event, the assumptions used are typically the most recently available information that is both relevant and reliable, adjusted to appropriately reflect current conditions, as applicable.

Non-market assumptions should draw on older data and suitable adjusted data from wider sources, to the extent that the most recent, directly relevant data is not sufficiently credible.

Assumptions can be chosen as a derivation of observed data by applying calculation approaches such as linear combinations to observed data. In case the data do not allow such approaches, statistical or stochastic approaches are used.

4.2.2 Market assumptions

Market assumptions include assumptions regarding variables such as interest rates, asset values, credit risk, and inflation, which can be observed in the financial markets (IAS 39, AG82) that incorporate market assessments of expected future cash flows and the time value of money. In addition, market assumptions include market assessments of the volatility and the risk of deviation from estimated expected values of future cash flows, market assessments of prices for servicing contracts, market assessments of the credit risk of the reporting entity (credit rating), etc. “Current” market rates usually refer to those rates observable on the effective date of the measurement.

The practitioner generally selects market assumptions that are consistent with current market prices and other market data, unless there is reliable and well-documented evidence that current market experience and trends are not likely to continue. However, it should be noted that if there was reliable and well-documented evidence that experience and trends were not likely to continue, then, in an efficient market, this data would arguably have already been factored into market prices and data.

Evidence may exist if, for example, a single objectively identifiable event causes severe and short-lived disruption to market prices. In such exceptional cases, the market assumptions could reflect this reliable evidence. However, also in this case, one would expect an objectively identifiable event to be anticipated by the capital markets and, therefore, to be reflected within current market prices. The reporting entity should be able to demonstrate the existence of a subjectively identifiable event that has not been taken into account by other market participants. Accordingly, this exception would be expected to arise only in rare circumstances, if at all.

The practitioner generally selects a discount rate assumption that is consistent with other market assumptions. The accounting guidance in IAS 37 states that the “discount rate should be a pre-tax rate that reflect current market assessments, the time value of money and the risks specific to the liability.” This accounting guidance further provides that the discount rate would “not reflect risks for which future cash flows have been adjusted.”

4.2.3 Contract- or portfolio-specific assumptions

Contract- or portfolio-specific assumptions are assumptions about variables that are not readily observed in the financial markets. These assumptions usually would reflect:

1. Information about the known or estimated characteristics of the contract or book of contracts; and
2. Historical data about the entity’s own experience for a particular book or unit of account, supplemented where appropriate by historical data from other sources. Historical experience data are generally adjusted to the extent that the characteristics of the contract or the book differ (or are expected to differ, perhaps as a result of anti-selection, or for other reasons) from that of the population used as a basis for the historical data. Historical experience data are also adjusted where there is reliable evidence that historical trends will not continue.

Contract-specific assumptions reflect the individual characteristics of a specific contract and are based on experience data from that contract or similar contracts in so far as they are expected to be relevant for the future. In coming to this determination, the practitioner may consider the underlying factors that drive the experience, i.e., acquisition process, customers, and other factors known to influence the characteristics and experience of a specific contract.

If contract-specific assumptions are used and individual characteristics of a contract are not known or not determinable at balance sheet date, experience data from the portfolio can be used, particularly if the portfolio is the unit of account.

To the extent that these data do not provide a sufficiently relevant or reliable source, industry-wide statistics might be considered an appropriate basis for contract- or portfolio-specific assumptions. However, adjustments to reflect the individual peculiarities of the specific contracts or portfolios may be needed. Credibility theory provides a framework for blending this data with the available, directly relevant data.

4.2.4 Reporting entity-specific assumptions

Reporting entity-specific assumptions refers to characteristics used in measurement that are relevant for contracts issued by an entity. These may include characteristics of entity-specific arrangements such as specific capital requirements and credit profile (investment return where contracts are linked to the performance characteristics of the entity). Reporting entity-specific adjustments might include management’s expectations or business plans, as appropriate and if in accordance with the accounting requirements of the measurement approach. Such assumptions are assessed based on the experience data of the specific reporting entity in so far as they are reliable and relevant.

4.3 Specific discussions on non-market assumptions

4.3.1 Setting non-market assumptions for financial instruments and service contracts

When setting non-market assumptions, the practitioner may wish to consider the guidance outlined in the following sections 4.3.2 through 4.3.8. For investment contracts and service contracts, it is normal for the mortality or morbidity elements to be trivial or irrelevant.

4.3.2 Discontinuance assumptions

For many contracts, the practitioner will select contract discontinuance assumptions when the entity is exposed to risk from the potential use of the option that the POLICYHOLDER has to withdraw or persist, or to select the timing or the amount of such contract termination. Discontinuance can take the form of ceasing premium payments (this does not mean that the reporting entity's liability has necessarily been removed) or terminating the contract. Discontinuance may give rise to the payment of surrender or transfer value, to the granting of a paid-up policy, or to lapse without value.

The following considerations can affect the selection of expected assumptions for future discontinuance experience:

1. Benefits and options provided;
2. Contract duration or attained age;
3. Premium frequency and payment method;
4. Premium paying status;
5. Size of contract;
6. Relative advantages of lapsation/withdrawal and persistency to the counterparty;
7. Surrender charges and/or persistency bonuses;
8. Sophistication of counter-party and intermediary;
9. Competitive situation for the product;
10. Claims management practice;
11. Interest rate scenario and other economic factors;
12. Distribution system and other marketing practices; and
13. Expected changes in aggregations as a result of changes in the entity's portfolio mix.

To determine the surrender value or transfer value payable on withdrawal, the practitioner usually would take the following into account:

1. Market assumptions assumed in the projection;
2. Any guaranteed surrender or transfer value scale; and
3. CONSTRUCTIVE OBLIGATIONS incorporated within the contract.

Discontinuance experience normally will have a significant effect on overall profitability to the issuer for many investment contract types. The practitioner may use relevant and reliable discontinuance experience to the extent practical. In the absence of reliable experience data for the

class of risk under consideration (e.g., new products or later durations in the policy), other comparable sources would normally be considered.

4.3.3 Expenses

To the extent the practitioner is involved in performing or reviewing the selection of expense assumptions, the practitioner generally selects assumptions with respect to the future expenses associated with obligations arising from commitments the entity has made on, or prior to, the valuation date, including overhead expenses. The practitioner usually selects assumptions so that the treatment of the transaction and incremental costs based on the measurement method can be appropriately and consistently established.

When setting expense assumptions, it may be useful to take into account both:

1. The entity's strategy for determining the level of service provided to policyholders (and its approach to claims management, if applicable); and
2. The entity's efficiency in providing that level of service (and implementing its approach to claims management, if applicable).

The level of service and approach to servicing policyholders will usually have implications for both expense levels and voluntary contract termination and renewal rates. For established entities, in the general course of events, sufficient data should be available for expense assumptions to be determined on an entity specific basis. When making a non-entity specific assumption, the entity's strategy for determining the level of service provided to policyholders (and its approach to claims management) is usually taken into account. Given its particular service-level strategy, a particular entity may be more or less efficient than other market participants, and the assumption would normally reflect the general level of efficiency in the market. This latter case would also usually imply that it would be inappropriate to reflect management plans to improve efficiency for their existing service level and claims management strategy in the assumptions. The practitioner may wish to consider the effect of an allowance for projected improvements on service and claim levels. Allowance for projected improvements is taken into account only when there is clear and objective evidence that it is appropriate. If entity-specific assumptions are appropriate, such management plans are usually reflected only to the extent that management has specific plans and a track record of being able to carry out such plans.

Usually all administrative cost and consequent commissions would be considered. Where future deposits or premiums are factors in the determination of the liabilities, expenses related to the deposits or premiums would usually be taken into consideration. In addition, where appropriate for accounting measurement, the expenses of administering investments, and other expenses relating to investment earnings normally would be taken into consideration.

It is normally prudent for the practitioner to become familiar with the reporting entity's process by which the reporting entity allocates expenses. Expenses that are pertinent to the valuation would usually include both direct expenses and an appropriate provision for general overhead expenses that are reasonably allocable unless specific accounting guidance requires the exclusion of general overhead. The practitioner may wish to refer to the PG, *Measurement of Investment Contracts and Service Contracts under International Financial Reporting Standards*.

Subject to specific market conditions, the expense assumptions will normally assume that the entity will maintain a reasonable level of new business and, therefore, the assumptions for the closed book, i.e., the book of policies in-force at the measurement date, can normally be based on the

current level of economies of scale. To project improvements in economies of scale beyond the valuation date would usually depend on management expectations and plans and may be appropriate in certain circumstances if there is clear and reliable evidence that such plans are likely to be met and that the entity has exhibited the ability to achieve such cost reductions in the past.

In certain circumstances when the accounting measurement does not require observable market data, such as a start-up or wind-down of an entity, or where the allocation of expenses is unusual, the experience data may not serve as an appropriate basis for future expense assumptions. The practitioner is normally prudent to examine the experience data carefully, so that the resulting assumptions provide for a reasonable level of expenses that pertain to the administration of contracts, investments, and claim settlement, and that serve the objective of the valuation.

Future expense cash flows are usually assumed to vary with assumed rates of general level of expense inflation in a reasonable manner. The starting point will normally be the market price level of inflation consistent with the market assumption with respect to future interest rates. To this, the practitioner would normally add a factor to reflect the issuer's level of expense inflation relative to the market level of price inflation, when justified by the different nature of the entity's business relative to that underlying observable market data, often set consistent with assumptions of future interest rates.

Where external parties provide services such as policy administration or fund management, the practitioner would normally give appropriate consideration to the terms of these agreements, including the possibility of termination of the agreement. Relevant expenses of the entity's holding company or any related company providing inter-group service would also be reflected, although if a market-based measurement approach is used, the equivalent cost available from the observable market place of the amounts charged by an independent third-party would normally be used.

4.3.4 Use of prior experience

Non-market assumptions about future experience are usually based, as a starting point, upon historical data about the entity's own experience for a particular book of contracts or unit of account. If the recent experience of the book of contracts lacks full credibility or such data are not available, assumptions are supplemented where appropriate by older data or data from external sources. For example, this may be based on other books of contracts that are subject to substantially the same risk for the assumption being considered, similarly situated companies, or relevant and reliable industry experience in the same country or from elsewhere in the world. External experience data are generally adjusted to the extent that the characteristics of the contract or the book differ (or are expected to differ as a result of anti-selection) from that of the population used as a basis for the historical data. External experience data are also adjusted where there is reliable evidence that historical trends will not continue or will vary.

Where reliance is placed on published experience tables, the practitioner would give appropriate consideration to the characteristics of the table, including the makeup of the risks whose experience formed the basis of the table, the exposure period, and margins within the table, if any are present. Any modification would take into account the credibility of the relevant evidence.

Judgment may be required to determine the extent to which prior experience is a guide to future experience. For example, adjustments may need to be made for changes in circumstances or changes in the manner that past data were established compared to that required to determine assumptions about future experience. Once such adjustments have been made, credibility theory

provides a framework for giving appropriate weight to recent experience that appears to depart from older experience. Judgment may be needed in setting the credibility parameters, if the required extent of any adjustments is uncertain.

4.3.5 Trends

Non-market assumptions are usually based upon established historical trends. It is recognised that it may take time to discern trends in emerging experience, and to distinguish them from random fluctuations. On the other hand, long-term averaging or smoothing of past experience can suppress important evidence of recent trends. Typically, it is appropriate to allow for the continuation of long-term trends only to the extent justified by the evidence that such a trend exists and is likely to continue. It may be desirable to adopt a prudent approach and to allow greater credibility when the data suggests an unfavourable trend.

In analysing experience data, it is generally appropriate to remove the effects of statistical fluctuations and cyclical influences. To the extent that the adjusted experience reveals an underlying trend, the practitioner usually applies judgment to the projection of that trend in setting the current estimate.

4.3.6 Updating non-market assumptions

The practitioner may wish to consider when non-market assumptions should be updated; generally this is undertaken when differences between actual experience and previous assumptions arise. In assessing the credibility and relevance of these differences, the practitioner is referred to the guidance provided in the previous paragraphs. These differences can arise for several reasons, including:

1. An entity may have chosen an incorrect model of future cash flows. For example, it may have been assumed that future cash flows are distributed according to probability distribution function A, when it is subsequently determined, based on additional information or changed conditions, that they are more consistent with probability distribution function B. Alternatively, an entity may have overlooked a factor that will influence the future cash flows;
2. An entity's estimate of the parameters of an underlying probability distribution may differ from the actual parameters. For example, a practitioner may estimate that a distribution has a mean of 100 and a standard deviation of 10, when it is subsequently determined, based on additional information or changed conditions, that the distribution actually has a mean of 120 and a standard deviation of 15; and
3. Random statistical fluctuations are likely even if the entity has chosen a model that is totally accurate and has correctly estimated the parameters of the distribution under that model. If the risks are uncorrelated, such random fluctuations are smaller for a large population than for a small population. If discernable, the effect of random fluctuations alone would not justify an adjustment of the assumptions.

The practitioner might wish to investigate the reasons for experience adjustments. If experience adjustments suggest that the practitioner has used the wrong model or estimated parameters that differ from the true parameters, the model or its parameters may have to be adjusted. If the indicated experience adjustments arose solely from random statistical fluctuations, the practitioner might not adjust the model or the parameters. However, a change in assumption generally is not

justified as a result of a change in approach to deriving assumptions, without evidence that the resulting assumption is credible and reliable.

4.3.7 Sources

National actuarial associations may be the appropriate source to derive current estimate assumptions, particularly for the following market assumptions:

1. Risk-free yield curve; and
2. Market consistent price inflation.

Certain market assumptions such as those concerning volatility (for example, equity price volatility) may not be readily available because they may depend on a specific mix of asset types. Although this assumption could be viewed as being entity-specific in that it involves a specific asset mix, the assumption used still may be market based.

National actuarial organisations may be an appropriate source to derive publicly available industry-wide experience data in areas such as contract persistency or expenses. This source might provide analysis that could be used to explain the characteristics of non-market experience tables, including the make-up of the risks or type of entity whose experience forms the basis of the table, and the exposure period, margins, assumptions, and methods used in developing the table.

4.4 Disclosure

Actuarial guidance regarding disclosure is provided under the PG, *Disclosure*, to which the practitioner may wish to refer.

Appendix A – Relevant IFRSs

The most relevant International Financial Reporting Standards and International Accounting Standards for this Practice Guideline are listed below.

- IAS 1 (2001 April) Presentation of Financial Statements
- IAS 8 (2004 March) Accounting Policies, Changes in Accounting Estimates and Errors
- IAS 18 (2004 March) Revenue
- IAS 32 (2003 December) Financial Instruments: Disclosure and Presentation
- IAS 36 (2004 March) Impairment of Assets
- IAS 37 (1999 July) Provisions, Contingent Liabilities and Contingent Assets
- IAS 38 (2004 March) Intangible Assets
- IAS 39 (2004 March) Financial Instruments: Recognition and Measurement
- IFRS 1 (2004 December) First-Time Adoption of International Financial Reporting Standards
- IFRS 3 (2004 March) Business Combinations
- IFRS 4 (2004 March) Insurance Contracts

In addition, the IASB *Framework* is relevant.

Appendix B – List of terms defined in the IAA Glossary

The first time that these terms are used in this IASP, they are shown in small capital letters. The definitions of these terms are included in the IAA Glossary.

Accounting policy
Actuary
Amortised cost
Benefit
Component
Constructive obligation
Contract
Current estimate
Discretionary participation feature
Effective interest method
Embedded derivative
Fair value
Financial instrument
Financial liability
Guarantee
Insurance contract
Issuer
International Actuarial Association (IAA)
International Accounting Standard (IAS)
International Accounting Standards Board (IASB)
International Financial Reporting Standard (IFRS)
International Financial Reporting Standards (IFRSs)
Investment contract
Liability adequacy testing
Margin for risk and uncertainty
Model
Option
Practice Guideline (PG)
Practitioner
Professional services
Provision
Recognised actuarial practice
Reporting entity
Service component
Service contract
Unit of account