Seeing Beyond Risk Canadian Institute of Actuaries Institut canadien des actuaires Voir au-delà du risque

Educational Note

Measurement of Investment Contracts and Service Contracts under International Financial Reporting Standards

Practice Council

June 2009

Document 209057

Ce document est disponible en français

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.

Seeing Beyond Risk Canadian Institute of Actuaries Institut canadien des actuaires Voir au-delà du risque

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: Measurement of Investment Contracts and Service Contracts under International Financial Reporting Standards**

Document 209057

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 measurement of investment contracts and service contracts for purposes of preparation or review of financial statements in accordance with IFRS. It was originally published by the IAA as IASP 4.

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.

JT

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.

Table of Contents

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 related to the measurement of INVESTMENT CONTRACTS and SERVICE CONTRACTS for purposes of FINANCIAL STATEMENTS in accordance with the INTERNATIONAL FINANCIAL REPORTING STANDARDS (IFRSs). 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).

This PG excludes from its scope the measurement of insurance contracts, those CONTRACTS with a DISCRETIONARY PARTICIPATION FEATURE, and hedge accounting for investment contracts.

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 expands on the IFRSs provided by the INTERNATIONAL ACCOUNTING STANDARDS BOARD (IASB) regarding the treatment and measurement of FINANCIAL ASSETS and FINANCIAL LIABILITIES related to contracts, generally known as investment contracts; and on the treatment of service contracts issued by INSURERS or similar entities.

The implementation of the amendments to IAS 39 effective early in 2005 has not been consistently introduced in various jurisdictions. In Australia options have been restricted and the EU has not ratified the whole of IAS 39. This PG addresses the amendments as introduced by the IASB and does not take into account amendments in 2005.

The PG describes a set of principles for the recognition and measurement of revenue and expenses as services are rendered for service contracts in sections 4.6 and 4.7. The classification of service contracts is addressed in section 4.1.1 and their related TRANSACTION COSTS in 4.1.3.

The set of principles for the recognition and measurement of revenue and expenses for investment contracts achieves the two objectives of:

1. Determining, as at the reporting date, the valuation of the liabilities under the FINANCIAL INSTRUMENT COMPONENT; and
2. Where applicable, providing for the recognition of revenue and expenses under the SERVICE COMPONENT as services associated with that element are rendered.

Based on the IFRSs, payments received for an investment contract's financial instrument component are not recognised as revenue but are treated like a deposit. Payments made to

the POLICYHOLDER are not expensed but treated as a reduction in liability to the policyholder.

Payments received for a service contract (or where a portion of an investment contract has been separated in part into a service component) relating to a service that will be provided over a period of time are recognised as revenue over the period the service is performed (IAS 18.13).

Investment contracts that provide investment management services need to be separated into two COMPONENTS related to the FINANCIAL LIABILITIY and investment management service components. This would apply to all the elements, for example premiums, BENEFIT payments, expenses, and fees. An example might be a single premium investment contract where investment management of the financial instrument component is provided for by a portion of the investment earnings under the financial instrument component. An annual fee for the service is then transferred to the service component and is payable as an investment management fee to provide an investment management service.

4. Practice Guideline

4.1 Measurement

4.1.1 Classification and subdivision of contracts

Guidance regarding (1) the classification of contracts, including stand-alone service contracts, where the reporting entity is the issuer; and (2) the categorisation of investment contracts between service components and financial instrument components are provided under a separate PG, *Classification of Contracts*, to which the practitioner may wish to refer.

Based on the IFRSs, measurement rules for service contracts also apply to service components. Measurement rules for financial instrument components are those for financial instruments.

In addition, initial transaction costs are separated between the financial instrument and service component. If there is no natural split based on observable market data (an example is the spread between bid and ask market prices, which would naturally be assigned to a financial instrument component), then the subdivision is normally based on the proportion of amounts expected to be recovered from the components. Front-end fees, if there is no natural split and they are demonstrably intended to cover such initial COST, are typically allocated in the same proportion. Based on IFRSs, this allocation applies only if the measurement of initial costs can be made reliably. Otherwise no transaction costs are deferred.

4.1.2 Initial measurement of financial instruments

The method to be used in the initial measurement of a financial instrument is defined, while that for subsequent measurement is subject to some alternatives. "When a financial asset or financial liability is recognised initially, an entity shall measure it at its FAIR VALUE plus, in the case of a financial asset or financial liability not at fair value through profit or loss, transaction costs that are directly attributable to the acquisition or issue of the financial asset or financial liability" (IAS 39.43). As an example, for a typical investment contract, the consideration would be the initial payment and the transaction costs would be incremental costs directly attributable to the acquisition of that contract.

Some believe that IAS 39.43 should be interpreted to mean that transaction costs that are directly attributable to the acquisition or issue of the financial liability should be subtracted from a financial liability. Others believe that fees and costs all relate to the investment management services component and should be deferred rather than subtracted from the liability.

The application of any IFRSs' requirements to fair value measurement (such as a financial asset or financial liability with a demand feature; refer to 4.5.2 of this PG) would apply prior to any adjustment for transaction costs that are directly attributable to the acquisition or issue of the financial asset or financial liability.

Where the reporting entity has not yet become a party to the contractual PROVISIONS of the financial instrument, IFRSs require any payments made or consideration received in respect of the unrecognised contracts to be treated in accordance with the terms of those payments.

4.1.3 Treatment of transaction costs

In respect of financial instruments, IAS 39 prohibits the deferral and amortisation of transaction costs in the financial statements through the concept of a deferred ACQUISITION COST asset. In respect of service contracts and the service components of investment contracts and other financial instruments, the IFRSs permit transaction costs for the service element to be deferred to match the related fees. A practitioner may wish to consider a look-through approach to the service contract and to the nature of the original expenses to ascertain if they are truly incremental and eligible for deferral within the spirit of IAS 39.

The financial instrument IFRSs indicates, "Transaction costs are incremental costs that are directly attributable to the acquisition, issue or disposal of a financial asset or financial liability" (IAS 39.9, definition of transaction cost). A financial instrument may not include debt premiums or discounts, financing costs, or allocations of internal administrative or holding costs (IAS 39, AG13). IAS 39.9 provides that only incremental costs are to be considered.

The service contract IFRSs clarify transaction costs as follows: "Incremental costs that are directly attributable to securing an investment management contract are recognised as an asset if they can be identified separately and measured reliably and if it is probable that they will be recovered." As in IAS 39, an incremental cost is one that would not have been incurred if the entity had not secured the investment management contract" (IAS 18, Appendix A, paragraph 14(b)(iii)).

The reporting entity's ACCOUNTING POLICY may provide guidance regarding how costs are to be so classified. Section 4.10, Allocation of expenses, provides additional guidance.

Entities sometimes contract with third parties to perform certain administrative functions related to the acquisition of new business. Where these costs are directly incremental and related to the acquisition of a contract they would meet the definition of transaction costs in IAS 39.

4.1.4 Host investment contract with embedded derivative

Guidance regarding the identification of an EMBEDDED DERIVATIVE within an investment contract issued by a reporting entity is provided under a separate PG, *Embedded Derivatives and Derivatives*, to which the practitioner may wish to refer.

Based on the IFRSs, when applying AMORTISED COST to the host investment contract and where an embedded derivative requiring separation is included within an investment contract, the fair value at inception of the host contract is the initial fair value, as described above, less the cost of the embedded derivative. The cost of the embedded derivative is the fair value of the embedded derivative, considered as a stand-alone contract, at the inception date of the investment contract. The Implementation Guidance on IAS 39 (items C.1 and C.2) states that the initial fair value of a non-option embedded derivative is zero.

Where the host contract is being measured subsequently at amortised cost, the cash flows related to the embedded derivative would be excluded and the embedded derivative is measured at fair value. If the embedded derivative cannot be separated reliably, then the entire contract would be valued at fair value.

The fair value of embedded derivatives is determined using standard fair value principles as outlined IAS 39, for example, by reference to market prices of identical or similar DERIVATIVES if possible, or by the hierarchy of commonly accepted valuation techniques. If these techniques are available they would be considered. In accordance with IAS 39.11, when the host contract is being measured at fair value there is no separation of the embedded derivative. Where the host contract is being measured on amortised cost and the embedded derivative is not closely related, the IFRSs require separation.

4.1.5 Subsequent measurement

The IFRSs provide some alternatives to be selected. The measurement at subsequent dates depends on the IFRSs measurement approach selected under the reporting entity's accounting policy.

Where an investment contract has a financial instrument component and a service component, they are measured separately and the cash flows have to be separated to allow for the different measurement. The financial instrument component under the IFRSs can be either a financial asset or a financial liability.

IAS 39.47 provides that financial liabilities are measured at amortised cost, using the EFFECTIVE INTEREST METHOD except for financial liabilities measured at fair value through profit and loss. If the reporting entity's policy under IFRSs does not provide direction as to the measurement to be selected or the classification of financial liabilities, then the practitioner may choose to apply an internally consistent approach and document the approach selected.

If an election has been made to use fair value, the IFRSs do not allow a subsequent change in the measurement approach for future financial statements (IAS 39.50). Although IAS 39 is silent where amortised cost has been selected regarding the continuation of existing accounting policies, IAS 8.14 and 8.15 would apply.

The IFRSs provide that under the IASB *Framework*, a financial asset is classified into one of four categories: financial assets at fair value; held-to-maturity; loans and receivables; and available for sale. Based on that classification, the measurement will be at amortised cost using the effective interest method or fair value through profit and loss (IAS 39.45 and 39.46). Some contracts that do not result in invested assets may have to be placed into one of these categories, for example reinsurance of investment contracts. Guidance regarding

the measurement of linked contracts such as REINSURANCE CONTRACTS is provided under a separate PG, *Accounting for Reinsurance Contracts under International Financial Reporting Standards*, to which the practitioner may wish to refer.

If an investment contract is designated as a hedged item, IAS 39 is applicable.

The IFRSs provide no optional treatments for service contracts. The measurement of service contracts is addressed in sections 4.6 and 4.7.

4.2 Application of IFRSs for amortised cost model

4.2.1 Approach

The IASB guidance on cash flows that are not fixed (IAS 39.9, definition of EFFECTIVE INTEREST RATE regarding the use of estimated cash flows, supplemented by AG82(g) and BC94) is that the issuer of the financial instrument should determine amortised cost on the basis of expected (i.e., probability-weighted) surrender patterns. This is consistent with the treatment of assets subject to prepayment risk.

This implies that:

1. If initial fees covering transaction costs are not deferred, but are subtracted from the liability, then they should be treated as one of the cash flow items in calculating the effective interest rate;
2. Cash flows typically would be developed based on expected surrenders;
3. Given the IFRSs, MARGINS FOR RISK AND UNCERTAINTY are not included in the cash flows;
4. The expected cash flows normally would be determined for each duration and, therefore, it would be appropriate to select an appropriate probability distribution for each duration (it might be the same distribution at all durations, if appropriate); and
5. Appropriate requirements under IFRSs, such as a minimum floor (see section 4.3.1), would apply.

4.2.2 Determination of future cash flows

The IFRSs provide that the cash payments used in the determination of amortised cost would be the cash flows over the relevant period of the financial instrument.

4.2.3 Administration costs

In accordance with the IFRSs, administrative costs are not to be included in the projected cash flows. However cash flows consider all contractual terms of the financial instrument. Therefore, any contractual loadings or fees would be included in the projected cash flows (IAS 39.9, definition of effective interest rate).

4.2.4 Renewals

Many investment contracts have renewal payments, either fixed or flexible. The inclusion or exclusion of renewal payments may have a material effect on the carrying amount assigned, particularly if transaction or acquisition costs are large in relation to the first payment because of anticipated margins from expected renewal payments. An example is a single premium deferred annuity initially funded with a transfer from another contract but

with fixed periodic payments expected after issue that are credited at the same rate as new business.

Since inclusion or exclusion of renewal payments may be material, it may be part of the accounting policy of the entity. In the absence of such guidance, the practitioner may recommend a level to the board.

The IFRSs' definition of the effective interest method provides for "estimated future cash payments and receipts," but refers to "over the relevant period." Although IAS 39, AG6, expects this to be over the expected life of the instrument, if the transaction costs or other items relate to a shorter period or if the contract is repriced earlier to market rates, the amortisation period normally would be the shorter period.

The practitioner may establish the relevant period based on the nature of the investment contract and repricing provisions. Normally, a renewal payment is a contractual obligation to pay fixed (i.e., not unilaterally determinable) future payments with a right to surrender those rights or obligations in whole or in part. Hence, it might be seen as a logical consequence from the inclusion of future lapses that future payments would also be considered.

Some investment contracts provide renewal rights or options where renewal payments are, in effect, stand-alone investment contracts issued on the same terms as new business. In this situation, they may be treated as such. If not issued on the same terms as new business, they may be treated as part of the original contract.

4.2.5 Indeterminate elements

While the amortised cost method need not be applied where a discretionary participation feature exists, it may apply to investment contracts with an indeterminate element such as excess interest credits or bonuses. These elements include, for example, those used to increase periodic benefit payments, maturity values or current account values. While some of these contract elements are contractual, the resulting cash flows may not be able to be determined until they actually occur. IAS 39.9, "effective interest method" definition, indicates that these elements should be considered in determining expected cash flows. If a realistic CURRENT ESTIMATE can be made, then the amortised cost approach could be used without adjustment.

Guidance regarding the treatment of investment contracts issued by a reporting entity that contain both a fixed element and a discretionary participation feature is provided under a separate PG, *Discretionary Participation Features*, to which the practitioner may wish to refer.

4.2.6 Treatment of options and guarantee cash flows

Generally, OPTIONS and GUARANTEES that are not embedded derivatives requiring separation would be considered in the determination of cash flows in calculating the amortised cost value of the host contract. The definition of effective interest method states, "…an entity shall estimate cash flows considering all contractual terms of the financial instruments (for example, prepayment, call and similar options) but shall not consider future credit losses" (IAS 39.9). If options and guarantees are not required to be separated, the amortised cost of the financial instrument would not normally reflect changes in the fair value of the options

and guarantees. If the entity changes its estimate of future cash flows, these normally would be discounted at the original effective interest rate.

4.2.7 Selection of the probability distribution

The selection of the probability distribution for a specific duration to determine the estimated cash flow at that duration is addressed below in section 4.9.

4.2.8 Selection of the estimated cash flow assumptions

Guidance regarding the selection of estimated cash flow assumptions is addressed under a separate PG, *Current Estimates*, to which the practitioner may wish to refer.

4.2.9 Determination of amortised cost

"The amortised cost of a financial asset or financial liability is the amount at which the financial asset or financial liability is measured at initial recognition minus principal repayments, plus or minus the cumulative amortisation using the effective interest method of any difference between that initial amount and the maturity amount, and minus any reduction (directly or through the use of an allowance account) for impairment or uncollectability" (IAS 39.9, definitions, and 39.56).

Therefore, to create an appropriate amortisation schedule initially, an effective interest rate is determined. The IFRSs indicate that the practitioner should know (or estimate):

1. The initial measurement of the financial asset or financial liability, which in accordance with IFRSs would be fair value subject to any requirements under IFRSs (or the accounting value at repricing);
2. Original transaction costs incurred (or transaction costs incurred at repricing); and
3. Estimated amount and timing of future cash flows relating to the contract.

Using this information for each contract, the effective interest rate would be the internal rate of return for the period to maturity or to the next repricing date. An amortisation schedule can then be derived. The difference typically is amortised by the application of the effective interest method, which is normally a roll-forward of the initial value to the maturity value using the effective interest rate (IAS 39, AG6).

More than one rate may satisfy the definition. In this situation, normal practice is to select an effective rate of return that is reasonable and appropriately reflects the risk undertaken. As required by the IFRSs, the approach used should be consistent for determining the effective interest rate and then subsequently amortising the liability.

In accordance with the IFRSs, once determined, the effective interest rate is not changed. If an entity revises its estimates of payments or receipts, the entity recalculates the carrying amount by computing the present value of the estimated future cash flows at the financial instrument's original effective interest rate and the adjustment is recognised as income or expense in profit or loss (IAS 39, AG8).

However, where cash flows involve floating rate financial assets or financial liabilities and the cash flows are contractually linked, periodic re-estimation of cash flows is usually undertaken to reflect movements in market rates of interest, which could in turn alter the

effective interest rate and the adjustment is recognised as income or expense in profit or loss (IAS 39, AG7).

4.3 Requirements on amortised cost under IFRSs

4.3.1 Minimum floor

IAS 39, AG30(g) (also BC94), refers to a call option that is not closely related because the exercise price or surrender value is not approximately equal to the amortised cost. The IFRSs indicate that in the event the surrender value is more than the amortised cost of the liability and the surrender value is more than the fair value of the benefit at maturity, the reporting entity should measure the investor's option to surrender at the expected surrender value. This would be an embedded derivative and would be measured as such. This also would provide an effective minimum floor for financial instruments on an amortised cost measurement.

4.3.2 Contract replacement

Occasionally a contract's terms will be modified by common agreement or a contract will be replaced with a new contract prior to its stated maturity date. IAS 39.40 and IAS 39, AG62, discuss when to treat the modification as a new contract. If the modification or difference in terms is considered substantial, the original liability is released and a new liability for the modified contract is established. The new liability typically would be established as if the modified contract were newly issued as of the date of modification. The IFRSs provide that a modification is regarded as substantial if it changes the present value of the cash flows by at least ten per cent.

If the modification changes the present value of cash flows by less than ten per cent, the IFRSs require that the effective interest rate would not change, but the estimated future cash flows would be modified.

4.3.3 Taxes

Financial assets and financial liabilities typically are established without regard to profit (income) taxes, because a separate provision is recognised on the balance sheet (see IAS 12, *Income Taxes)*. However, certain taxes are similar to expenses and are normally excluded from cash flows and implicitly reflected in the interest rate. Premium taxes in some countries are examples. A tax on the amount of investment income attributed to the financial liability could be another. Where a specific contractual element has been included in the contractual fees or loadings to pass through a tax to the policyholder, these will be reflected in the amortised cost. Otherwise, no specific allowance is usually made.

4.4 Application of IFRSs for fair value model

4.4.1 Background

Existing IFRSs do not prescribe a specific fair value methodology but provide some guidance with respect to fair value measurement (IAS 39.48 and IAS 39, AG69–AG82). The key points are:

1. Fair value should be based on the presumption of a going concern;
2. The best evidence of fair value is a quoted price in an active market;
3. When there is an active market with quoted prices, the fair value is measured seriatim; and
4. When there is not an active market, a valuation technique is to be used.

Valuation techniques include using:

1. Recent arm's length market transactions;
2. Current fair value of instruments that are substantially the same;
3. Discounted cash flow analysis; and
4. Option-pricing MODELS.

"If there is a valuation technique commonly used by market participants to price the instrument and that technique has been demonstrated to provide reliable estimates of prices obtained in actual market transactions, the entity uses that technique" (IAS 39, AG74).

When using a valuation technique, "fair value is estimated on the basis of the results of a valuation technique that makes maximum use of market inputs and relies as little as possible on entity-specific inputs" (IAS39, AG75).

"A valuation technique could reasonably be expected to arrive at a realistic estimate of the fair value if:

1. it reasonably reflects how the market could be expected to price the instrument; and
2. the inputs to the valuation technique reasonably represent market expectations and measures of the risk-return factors inherent in the financial instrument" (IAS 39, AG75).

4.4.2 Fair value approach

The selection of the fair value measurement approach in accordance with the IFRSs will depend on the type of investment contract being considered and the availability of an active market.

For some investment contracts, having separated out the service component, the financial instrument remaining may be measured with reference to market prices of comparable instruments. An example may be investment-linked business with unitised funds of marketable securities. Other investment contracts are not normally traded in active markets, and as market evidence related to transactions of reasonably comparable contracts is usually sparse, reporting entities would normally use either the discounted cash flow approach or an option-pricing model where applicable, for the financial instrument. An example may be annuities with interest rate guarantees.

The balance of this section and sections 4.4.3 through 4.4.9 provide guidance for situations where there is no active market and a discounted cash flow analysis is to be used.

A discounted cash flow approach implies:

1. Selection of an appropriate model;
2. Selection of current estimate assumptions;
3. The determination of margins for risk and uncertainty;
4. Availability of market data to calibrate the provisions for risk and uncertainty; and
5. Application of the requirements of IFRSs.

A common approach is first to develop models using risk principles and then calibrate them to the observed market. (As a side benefit, in the future this may provide a method of reconciliation to solvency measures.) Then the specific requirements of the IFRSs rules would be applied. This approach allows for the determination of the appropriate value and provides for the determination of the difference between pricing fair value and the reported accounting value.

In addition, the initial determination of margins for risk and uncertainty based on risk principles, applying margins to cash flows to allow for risk and uncertainty rather than going directly to market calibration, allows for a demonstration that the adjustments to "risk-return factors" for the observable market, are appropriately distributed within the various assumptions. While market prices may be generally available, the allocation to each risk typically is not and therefore usually needs to be imputed. Inappropriate allocation may affect the emergence of income.

It should be noted that margins for risk and uncertainty need reflect only the compensation for risk required by a typical third party to take on the liability. Therefore, it may not be necessary to include a margin in respect of every assumption, and the selected risk margins need not imply a particular level of confidence.

4.4.3 Commonly accepted approaches

While there has been significant research into the subject of fair value measures for insurance contracts and investment contracts, there is no commonly accepted practice for the application of the concepts; many theoretical and practical implementation issues will need to be resolved over time as RECOGNISED ACTUARIAL PRACTICE emerges. Consequently, professional judgment is called for in selecting appropriate models, methods, and assumptions, and practitioners may reasonably differ in their selection.

4.4.4 Selection of an appropriate model

The selection of appropriate model is discussed in section 4.9 below.

4.4.5 Selection of current estimate assumptions

Guidance regarding the selection of current estimates is provided under a separate PG, *Current Estimates*, to which the practitioner may wish to refer.

4.4.6 Expenses to be recognised when using a discounted cash flow technique to measure fair value

The objective of the valuation technique is to estimate what the transaction price would be in an arm's length exchange. IAS 39, AG75, indicates that the technique should rely as little as practical on entity-specific costs. However, given the limited availability of separated fees for some types of contracts, the use of entity-specific costs at least initially would appear the most practical.

Costs of administration of a financial instrument may be estimated using comparisons with current fees charged by other market participants. The market costs would normally be based on direct costs assuming an efficient operation without significant over capacity. Sources for such information are industry surveys or fees charged by third party administrators. However, such information may be neither available nor reliable.

If the costs of administration are significant because of the nature of the reporting entity's investment contract design and features and other market participants would usually face comparable costs, the issuer would consider them in determining the fair value (IAS 39, AG82(h)).

"It is likely that the fair value at inception of a contractual right to future fees equals the origination costs paid for them, unless future fees and related costs are out of line with market comparables" (IAS39, AG82(h)).

Further guidance on expenses is included in section 4.10.

4.4.7 Margins for risk and uncertainty

4.4.7.1 Background

Actuarial principles would usually expect margins for risk and uncertainty to be reflected for each material assumption.

The assessment of the margin for risk and uncertainty for each of the future cash flows would:

1. Take account of the effect of the uncertainty of the model assumptions, data, and other assumptions for the calculation of the policy liabilities;
2. Not take into account the possibility of catastrophe or other major adverse deviation, which is implausible in usual operations; and
3. Take into account that the resulting PROVISION FOR RISK AND UNCERTAINTY would increase the liability.

The margin for risk and uncertainty would reflect the uncertainty associated with that assumption and of any related data.

Uncertainty may result from one or more:

1. Errors of estimation that may be favourable or adverse;
2. Deterioration or improvement; or
3. Statistical fluctuation.

A larger margin for risk and uncertainty is generally appropriate if:

1. There is less confidence in the current estimate assumption;
2. The event is further in the future;
3. The potential consequences of the event assumed are more severe;
4. The occurrence of the event assumed is more subject to statistical fluctuation; or
5. The risk is not diversifiable.

A smaller margin for risk and uncertainty is usually appropriate if the opposite is true.

Margins for risk and uncertainty are not intended to be sufficient to cover short-term statistical fluctuations.

Selection of a relatively large margin for risk and uncertainty in the assumption whose uncertainty most affects the calculation and a zero margin for others might be an appropriate approximation to the approach just described.

The choice of the adjustment for the margin for risk and uncertainty is occasionally complex and may benefit from testing. The testing may determine whether the margin affects the calculation in the appropriate direction. An example is the margin for the withdrawal rate assumption, which may be positive at some duration and negative at other durations.

Where an issuer has the contractual right to mitigate the risk and uncertainty with future adjustments to policyholder dividends, premium rates, and benefits, the issuer would normally reflect this in the estimated cash flows, subject to the offset not being constrained by a contractual obligation, CONSTRUCTIVE OBLIGATION, or one-sided benefit features.

Where an issuer is in a jurisdiction that requires risks to be transferred to a government entity or the existence of a compensation fund within the jurisdiction, the provision for risk and uncertainty would take into account the nature and existence of the required guaranteeing entity.

4.4.7.2 Level of margins for risk and uncertainty

Normally, the liability would initially be measured with a particular level of margins such that the liability would be sufficient to cover all obligations with a certain confidence level or similar measure such as CTE (Conditional Tail Expectation). This may be achieved in different ways, depending on the model selected, as long as the result reflects appropriate uncertainty in the level of margin for risk and contingency for each assumption. As discussed in section 4.4.7.1 above, the margin normally would be expected to be higher if the risk is more uncertain and vice-versa.

The overall level of margins for risk and uncertainty may be part of the accounting policy of the entity. In the absence of such guidance, the practitioner may recommend a level to the board.

If scenarios are chosen by a random generator based on an assumed or estimated stochastic distribution of that random variable, then the liability would usually be selected to maintain the predetermined level of margins.

4.4.8 Calibrating the liability

The board of the reporting entity has ultimate responsibility for the approach to calibration. In the absence of a calibration policy the practitioner may recommend an approach to the board.

4.4.8.1 Market data for calibrating

The IASB is currently evaluating the guidance regarding the calibration of financial instruments issued after 25 October 2002 and the guidance regarding fair-value measurement after the issue date. This PG addresses the current IFRS requirements.

The block of business and observable period should be appropriate. Typically, it is important for the block of business to be appropriately representative of the block being valued. The applicable observable period is usually selected to reflect the nature of the block of business considered. The market prices for some products are more volatile. In other situations, a recent event may have changed the market assessment and the practitioner appropriately reflects the change.

IAS 39, AG76, states, "The best evidence of the fair value of a financial instrument at initial recognition is the transaction price (i.e. the fair value of the consideration given or received) unless the fair value of that instrument is evidenced by comparison with other observable current market transactions in the same instrument (i.e. without modification or repackaging) or based on a valuation technique whose variables include only data from observable markets." If the business is currently being issued, the current pricing basis could form the basis of the observable market place premium if the premium basis is representative of the market. The current estimate assumptions considered could be those used in current pricing. Margins for risk and uncertainty may be different, as may be the way the profit margin has been included. Subsequently, the assumptions derived would not necessarily be consistent with those used for original pricing purposes or management purposes in, for example, setting interest bonuses, although any material deviation from the original pricing assumptions would usually be disclosed.

4.4.8.2 Calibration

The initial liability determined using a consistent level of margins is then calibrated to the observable market data. The approach to calibration will depend on the nature of the model selected and how, in the observable market data, the risk-reward factors have been included.

It is unusual for the calibration of observable data to be an adjustment to the expected assumptions.

Recognised practice is to reflect the observable market data by a direct adjustment to the provisions for risk and uncertainty. Depending upon how the observable price was established and the knowledge of a certain opportunity cost requirement on the jurisdictions or company's required capital formulae, adjustments other than to assumptions for risk and uncertainty may be appropriate. The practitioner typically selects the radix to release over time the portion related to the adjustment to reflect the nature of the observed factor. Selection of a radix may be implicit in the way the margin for risk and uncertainty is set. The following additional radix may be considered individually or in combination:

1. One of the product cash flows such as premium or face amount;
2. The amount of the provision for risk and uncertainty before adjustment;
3. The amount of the liability before margins for risk and uncertainty; and
4. An adjustment to the discount rate.

Another perspective on the method to apply the market observable adjustment is that it may reflect a different level of the margins than used in establishing the pricing assumptions.

In the FINANCIAL REPORTING period in which a financial instrument is first recognised, adopting assumptions different from pricing assumptions (other than because of the requirements of IFRSs) may inadvertently create a gain or loss. The practitioner would need a good reason for such a deviation and is referred to section 4.5.4, which addresses the requirements of IFRSs.

The manner in which adjustments to reflect observable market data are applied can have a direct effect on the emergence of earnings. The amount of the adjustment that relates to reflecting observable market data typically would be released over time, consistent with the associated risk-return factors for that cash flow.

The amount of the adjustment to reflect observable market data may be positive or negative, depending on the market assessment of the risks and other margins included.

Where a stochastic model is involved, the model may be calibrated in a similar manner to reflect observable market data. Given the nature of the model, this may be achieved by means of an adjustment to the model parameters, regarding the margins for risk and uncertainty in the assumptions or discount rate. Again, the choice of the method of calibration may influence the emergence of earnings.

Normally an option-pricing model also follows a similar approach, subject to having selected a specific distribution and the selection of a specific measure such as the mean. While the parameters may be calibrated individually, alternative approaches may be preferable for more complex assumed distributions.

Any adjustment approach selected would typically become a part of the basis for future valuations of the subject financial instruments. The approach would change only if there were compelling evidence that the market prices for similar contracts would have different calibrating factors. The use of initial values would be supported to the extent that the methods and assumptions in the calibrating models continue to be reasonable, sufficiently comprehensive, and representative of reality.

4.4.9 Updating assumptions

Based on a comparison of the valuation model and assumptions for the previous period and those in the current period, the reporting entity can determine the changes to be made to the business that was in effect in the prior accounting period. For example, if the adjustments to reflect the observable market have changed, these would be considered. It would be prudent to assess adjustments to reflect the observable market given the manner chosen to release over time the risk-reward factors. The IFRSs require assumptions (expected assumptions, margins for risk and uncertainty and calibration adjustments) from period to period to be consistent, i.e., variations may be based only on observable market data. Note that for this

purpose observable market data may include the company's own experience data in those instances where that is the data that the market would use if it had access thereto. For example, assumptions about discontinuance should be consistent with the most recent relevant and reliable data, which will often be the company's experience data.

4.5 Requirements on fair value under IFRSs

The requirements under IFRSs would be applied after having established the fair value of the policy liability without following IFRSs' requirements for the financial statement purposes. The following sections 4.5.1 through 4.5.4 address the IFRSs' requirements.

4.5.1 Application of discount rate

The discount rate in the context of this section is the yield on the replicating portfolio of assets that reflect the nature, structure, and term of the cash flows. The portfolio of assets upon which this would be determined would typically be selected to effectively eliminate any additional risk beyond that inherent in the liability cash flows.

If an investment spread over this rate has been observed in market data used for calibration, the margins for risk-reward factors based on section 4.4.8 would usually have been established taking into account the risk of achieving that spread. In the measurement of the liability in accordance with the IFRSs, the discount rate used in the calculation of the expected present value of the cash flows would be adjusted to reflect the risk that the reporting entity will default on the liability (IAS 39, AG79 and AG82).

There is no common practice at this time as to how to apply the adjustment referred to in the previous paragraph. An approach that can be taken when the market in which the contract is traded is not deep and wide is to use a replicating portfolio of instruments that are traded in deep, wide markets.

A replicating portfolio is a portfolio of financial instruments whose cash flows, within a specified tolerance level, replicate the cash flows of the contract that needs to be measured. The market value of the contract normally would be equal to the market value of the replicating portfolio. Alternatively, the fair value of the replicating portfolio can be used to determine the discount rates that are needed to calibrate a discounted cash flow model to the market.

The adjustment required by IAS 39, AG79 and AG82, is currently the subject of some discussion. The adjustment should reflect the probability of defaulting on the financial instrument rather than the defaulting of the entity. There are at least two general methods currently in use for allowing for the potential default on the financial instrument that the practitioner may wish to consider. The direct method is to build the probability of default directly into the estimation of expected cash flows. These cash flows should then be discounted on a basis that is not adjusted for default. The indirect method is to increase the discount rate. This approach implies a particular pattern of default that may or may not be appropriate.

4.5.2 Minimum deposit floor

IAS 39.49 requires at each valuation date a fair value that is at least equal to the amount payable on demand, discounted from the first date the amount could be required to be paid.

One view of this requirement is to apply the minimum floor before the adjustment for transaction costs (see 4.1.2).

4.5.3 Taxes

Financial assets and financial liabilities are established without regard to profit (income) taxes, because a separate provision is recognised on the balance sheet. (See IAS 12, *Income Taxes)*. However, certain taxes are similar in nature to expenses and normally are treated as such. Premium taxes in some countries would be one example. A tax on the amount of investment income attributed to the financial liability could be another.

If an allowance for discounting of profit (income) taxes has been observed in market data used for calibration, the margins for risk-reward factors based on section 4.4.8 would usually have been established implicitly, taking into account such expenses.

4.5.4 Updating assumptions

With respect to initial measurement, IAS 39, AG76, limits the choice of assumptions such that these may lead to gains only at inception if those assumptions only reflect data from observable markets. The 1 January 2005 *Amendment to International Accounting Standard 39* provides further clarification of the application guidance on IAS 39. Paragraph AG76 requires that a gain or loss shall be recognised after initial recognition only to the extent that it arises from a change in a factor (including time) that market participants would consider in setting a price.

This could imply that in the case where updated assumptions result in a gain, the update may not be allowed.

4.6 Application of IFRSs for service contracts

4.6.1 Approach

IFRSs are structured around each type of service transaction involving the rendering of services. When the outcome of the services can be estimated reliably, revenue is recognised by reference to the stage of completion of the services. A reliable estimate can be achieved if the following conditions are satisfied:

1. The amount of revenue can be measured reliably;
2. It is probable that the economic benefits associated with the transaction will flow to the enterprise;
3. The stage of completion of the transaction at the balance sheet date can be measured reliably; and
4. The costs incurred for the transaction and costs to complete the transaction can be measured reliably (IAS 18.20).

This implies that:

1. As recognition of revenue usually depends on the type of service for which the fees are assessed, the fees need to be allocated among services according to the nature and substance of the services provided;
2. Reliable cash flows are needed to measure the expected revenue and the stage of completion of the transaction needs to be reliably determined;

3. Margins for risk and uncertainty will not normally be included in the cash flows;

4. It may be appropriate to determine the expected cash flows and, therefore, to select an appropriate probability distribution for each duration; and

5. Requirements under IFRSs apply.

4.6.2 Segmentation of fees by services provided

IAS 18.11 indicates that revenue is measured at the fair value of the consideration received or receivable.

Other contracts of the reporting entity that are not insurance contracts, derivatives, or investment contracts, where the selling price includes an identifiable amount for subsequent service, would also be considered to be service contracts. An example could be a group Administrative Services Only (ASO) contract that includes charges for administration fees and claim payment fees. Similar contracts on the non-life side exist, where services regarding the administration of claim payments are established (IAS 18, Appendix A, paragraph 11).

When origination fees are received on issuing financial liabilities that are measured at amortised cost, origination fees are normally treated in a similar way to related transaction costs incurred. When the reporting entity can separate in a reliable manner such fees related to the right to provide services, the IFRSs provide that such front-end fees are deferred in the same manner as transaction costs. If it can be shown that such fees are directly related to the transaction cost, they can be netted with simultaneously incurred transaction cost. Otherwise, deferral of front-end fees and of transaction costs are to be separated, the first a liability, the second an asset, with no off-set allowed (IAS 18, Appendix A, paragraph 14(a)(iii)).

Fees charged for managing investments are recognised as revenue as the services are provided (IAS 18, Appendix A, paragraph 14(b)(iii)).

4.6.3 Determination of future cash flows

The estimated cash flows used to separately and reliably measure the expected revenue and the stage of completion of the transaction are the contractual cash flows over the contract's life. An example would be investment management fees that would be received over time. Under an investment contract with a service component, such fees might arise from the related financial instrument.

4.6.4 Selection of the probability distribution

The selection of the probability distribution for a specific duration to determine the estimated cash flow at that duration is discussed in section 4.9. It is desirable to achieve consistency in the selection of the model to measure the financial instrument component and the service component of the investment contract, the estimated cash flows for measuring the expected revenue, and the stage of completion of the transaction.

4.6.5 Selection of the estimated cash flow assumptions

Guidance regarding the selection of estimated cash flow assumptions is addressed under a separate PG, *Current Estimates*, to which the practitioner may wish to refer. It is desirable to achieve consistency in the selection of the current estimates of future cash flows for the

financial instrument component and the service component of the investment contract and the estimated cash flows for measuring the expected revenue and the stage of completion of the transaction.

4.6.6 Determination of capitalised expense and amount of revenue

Subject to meeting the definitions in the IFRSs, the amount of the transaction costs is capitalised on the balance sheet. The transaction cost is amortised in proportion to the nature of the service fees as outlined in the IFRSs. This involves a projection of the total fees to amortise the transaction cost over the life of the contract, for example, a portion of the investment management fees.

The fees that are related to the performance of a specific service would be included in revenue when the service is performed. A charge to move funds between accounts typically would be recognised when the funds are moved. The amount of the fees might not be collected at the same point in time, and they would either be deferred if collected in advance or set up as a payable if collected in arrears.

As assumptions are reviewed, such as in the case of an investment contract with a service component, the assumptions related to both the financial instrument component and the service component may be reviewed and the amortisation of deferred transaction costs may be adjusted to reflect those amended assumptions for the current and future periods.

Amortisation of deferred transaction cost and the test on recoverability can be based on a portfolio level.

Further guidance on expenses is included in section 4.10.

4.7 Requirements on service contracts under IFRSs

The IFRSs provide for a test of the recoverability of deferred TRANSACTION COSTS. This recoverability test would be completed at a portfolio level and determined in accordance with IAS 18, Appendix, paragraph 14(b)(iii).

Guidance regarding the LIABILITY ADEQUACY TEST is provided under a separate PG, *Liability Adequacy Testing, Testing for Recoverability of Deferred Transaction Cost Assets and Testing for Onerous Service Contracts*, to which the practitioner may wish to refer.

4.8 Disclosure

Guidance regarding disclosure is provided under a separate PG to which the practitioner may wish to refer.

4.9 Criteria for model selection

The practitioner typically selects an appropriate model to use with the data and assumptions so that the model overall is sufficiently comprehensive and reasonably represents the observed data.

In selecting a model for a particular measurement, the practitioner usually seeks to establish an appropriate balance between the complexity needed for reasonable representation of reality and the simplicity needed for a practical calculation.

4.10 Allocation of expenses

4.10.1 Overview

Allocation of the expenses of the reporting entity is integral to the principles described in this PG. Under the methodologies described in this PG, the expenses of the reporting entity would be allocated amongst:

1. Each of the classifications and subdivision of contracts;
2. Each category of expense, i.e., transaction expenses, other acquisition expenses, maintenance, overhead, and investment management cost; and
3. Each related product group.

Allocation of expenses is the ultimate responsibility of the board of the entity and may be addressed in the accounting policy. If allocation of expenses is addressed in the accounting policy then the methodology should be consistent with the policy. If not, the practitioner may wish to recommend an approach to the board.

The practitioner would normally apportion expenses not able to be directly allocated between the expense categories and between product groups. This section provides a set of principles within which the allocation is normally undertaken and against which the mechanics of the apportionment process are usually assessed. It is not the objective of this section to be prescriptive either in terms of the mechanics of the apportionment process or in the specifics of the allocation of particular types of expenses.

The allocation of certain expenses to expense categories or particular types of contracts may require greater judgment than others. Allocation of such expenses is usually based on a considered analysis of the particular circumstances of the reporting entity, including the objective in incurring that expense and the outcome achieved.

There may be circumstances in which an expense derives from an activity outside the normal business activities of the entity and is not recurrent in nature. It is generally appropriate to recognise the non-recurrent nature of such expenses in undertaking the allocation for the purposes of this PG.

The principles described in this section are equally applicable to the circumstances of allocation of both actual expenses and expected expenses of the entity.

4.10.2 Allocation to an expense product subdivision and category

Each expense product subdivision normally includes all relevant expenses, whether direct or indirect, and in aggregate the expense product subdivisions normally include the total expenses of the reporting entity, with the exception of non-recurrent expenses. Total expenses for this purpose are typically total operating expenses as disclosed in the reporting entity's financial statements but generally exclude unusual or non-recurrent items.

It is usually appropriate for this purpose to treat the management of the assets of the entity as if they are a separate notional expense subdivision with respect to all of the entity's business to which associated expenses may be allocated.

To the extent an expense is directly attributable to a particular expense category or a particular expense product subdivision, it is so allocated.

An expense that is not directly attributable to a particular expense category or a particular expense product subdivision is appropriately allocated. That allocation reflects:

1. The functional activities to which the expense relates; and
2. An appropriate relationship between those functional activities and either an appropriate expense category or a particular expense product subdivision.

In undertaking the allocation, the practitioner conducts an assessment of:

1. The purpose of the entity in incurring a particular expense; and
2. The contribution of that expense to the business of the entity, while retaining the integrity of the measurement process.

The practitioner considers for a particular expense product subdivision whether expenses that would still be incurred by the entity irrespective of substantial changes in the volume of new business written are appropriate to allocate to overhead or maintenance expenses. In accordance with IAS 18, Appendix A, paragraph 14(b)(iii), only expenses that directly vary in line with new business volumes and are incremental on a per contract basis are allocated to transaction costs for a service contract or financial instrument.

4.10.3 Apportionment process

Processes of apportionment may be appropriate, to a greater or lesser extent, in undertaking the allocation of expenses. These processes would usually be based on recent analyses of the operations of the business and the identification of appropriate expense drivers and related expense apportionment ratios.

4.10.4 Service agreements

Where activities of the entity are being provided externally, through a service agreement or other contractual arrangement, the entity's expenses relating to those activities would usually be allocated in a manner that is reasonably consistent with the principles of this section. Such tests take into account the allocation between the expense classifications and subdivisions of contracts, categories, and related product groups. Where the service entity fees are unreasonable as a basis for the allocation, an alternative allocation applying the principles of this section on a transparent basis may be determined.

The practitioner usually would request information required to undertake this allocation from the service provider. Where practical difficulties arise in accessing the required information, other methods, such as reference to appropriate industry benchmarks, may be employed.

4.10.5 Non-recurrent expenses

It is usually appropriate in the context of expense allocation undertaken for the purposes of this PG, to include non-recurrent expenses. To be classified as a non-recurrent an expense would be:

1. Material in amount;
2. Not incurred as part of the normal ongoing operations of the entity; and
3. Not regularly recurring in nature.

Non-recurrent expenses, while allocated to expense categories for financial statement purposes, need not be explicitly allocated (to expense category or an expense product subdivision) for the purposes of this PG.

Appendix A – Relevant IFRSs

The most relevant International Financial Reporting Standards and International Accounting Standards are outlined below.

- IAS 1 (2001 April) Presentation of Financial Statements
- IAS 8 (2004 March) Accounting Policies, Changes in Accounting Estimates and Errors
- IAS 12 (1998 January) Income Taxes
- 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 (2005 January) Financial Instruments: Recognition and Measurement
- IFRS 1 (2003 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
Acquisition cost
Actuary
Amortised cost
Benefit
Component
Constructive obligation
Contract
Cost
Current estimate
Derivative
Discretionary participation feature
Effective interest method
Effective interest rate
Embedded derivative
Fair value
Financial asset
Financial instrument
Financial liability
Financial reporting
Financial statements
Guarantees
Insurance contract
Insurer
International Actuarial Association (IAA)
International Accounting Standard (IAS)
International Accounting Standards Board (IASB)
International Actuarial Standard of Practice (IASP)
International Financial Reporting Standard (IFRS)
International Financial Reporting Standards (IFRSs)
Investment contract
Issuer
Liability adequacy test
Margin for risk and uncertainty
Model
Option
Policyholder
Practice Guideline (PG)
Practitioner
Provision

Provision for risk and uncertainty
Recognised actuarial practice
Reinsurance contract
Reporting entity
Service contract
Service component
Transaction cost