Institute of Actuaries of Australia

PRACTICE GUIDELINE 199.03

ECONOMIC VALUATIONS

March 2011

INDEX

1. INTRODUCTION

1.1 Application

1.1.1 This Practice Guideline applies to any Member performing an Economic Valuation of an Economic Asset.

1.1.2 This Practice Guideline does not apply to a Member:

(a) undertaking an assessment in accordance with a Professional Standard of the Institute;

(b) undertaking an assessment only of liabilities or prudential reserves in accordance with another Practice Guideline of the Institute;

(c) pricing products or services, or determining funding rates for liabilities; or

(d) placing a value on the assets of an Entity in accordance with any Professional Standard of the Institute (whether required to do so or not), where such work is being performed in conjunction with a corresponding valuation of the liabilities of the Entity.

1.1.3 Where a Member is asked to perform an Economic Valuation as a component part of a larger exercise, this Practice Guideline applies to the component part of the larger exercise for which the Member takes responsibility.

1.1.4 This Practice Guideline applies to an Economic Valuation made jointly by a Member and another person or firm. In such cases, the Member retains overall professional responsibility for the Economic Valuation, including any delegated component, and this Practice Guideline applies to the entire Economic Valuation. This does not preclude the Member from relying on the specific expertise of another professional (for example, tax expertise).

1.2 Classification

1.2.1 This Practice Guideline has been prepared in accordance with Council's Policy for Drafting and Developing Practice Guidelines. It must be applied in the context of the Institute's Code of Professional Conduct.

1.2.2 This Practice Guideline is not mandatory.

1.2.3 Nevertheless, if the Professional Services provided by a Member are covered to any extent by this Practice Guideline, a Member should consider explaining any significant departure from this Practice Guideline to the Principal, and document such explanation.

1.3 Background

Economic valuations are carried out for many purposes, including but not limited to:

(a) providing management information for an organisation;

(b) contributing to the assessment of the value of a business (or part of a business) for the purpose of sale or acquisition, which would include the value of any employee benefits (for example, superannuation);

(c) disclosure in the accounts of an organisation or elsewhere;

(d) supporting a cost-benefit analysis of a project or opportunity;

(e) supporting capital budgeting work;

(f) supporting social, health or environmental impact studies and assessments;

(g) as the basis of determining performance-related payments to employees;

(h) capital raising and capital reconstruction; and

(i) supporting market valuation of an Economic Asset.

1.4 Purpose

This Practice Guideline sets out the considerations that bear on the work involved in carrying out Economic Valuations of Economic Assets. It describes general principles and procedures for carrying out and reporting on the Economic Valuation which represent generally accepted practices and techniques.

1.5 Previous versions

This Practice Guideline replaces Guidance Note 552 (Economic Valuations) which was issued in July 2004.

1.6 Legislation and other requirements

1.6.1 Legislation and other requirements which may be relevant to the work covered by this Practice Guideline include:

(a) the Corporations Act 2001 (Cth);

(b) the Financial Services Reform Act 2002 (Cth);

(c) taxation law;

(d) Australian Securities & Investments Commission regulations and practice notes; and

(e) accounting standards.

1.6.2 A reference to legislation or a legislative provision in this Practice Guideline includes any statutory modification, or substitution of that legislation or legislative provision and any subordinate legislation issued under that legislation or legislative provision.

1.6.3 If there is a conflict between this Practice Guideline and any legislation, then the legislation takes precedence, and best practice is to document any Material differences in the Member's Report. In this context, legislation includes regulations, prudential standards, subordinate standards, accounting standards, rules issued by government authorities, and standards issued by professional bodies which have the force of law.

2. COMMENCEMENT DATE

This Practice Guideline takes effect from 1 October 2011.

3. DEFINITIONS

3.1 In this Practice Guideline:

'**Code**' means the Code of Professional Conduct of the Institute.

'**Economic Asset**' means any resource, property, right or interest that can potentially generate future cashflows and/or value (positive or negative). This includes liabilities (contingent or otherwise) for one party which represent assets for another party.

'**Economic Valuation'** means the process by which an 'Economic Value' is assessed and its result reported.

'**Economic Value**' means the present value or cash equivalent at the valuation date (allowing for time and risk) of all the future cashflows and/or other measures of value that are expected to be derived from ownership or use of an Economic Asset for a specified purpose by a specified user.

'**Member's Report**' means a formal document conveying the results of the work performed to which this Practice Guideline applies, and includes transmission of such by electronic means.

3.2 Other capitalised terms in this Practice Guideline have the same meaning as set out in the Code.

3.3 A word that is derived from a defined word has a corresponding meaning.

4. PURPOSE, USE AND SCOPE CONSIDERATIONS

4.1 Needs of the Principal

Before commencing an Economic Valuation, the Member should:

(a) review the purpose and context of the Economic Valuation with the Principal; and

(b) seek to understand the intended use(s) and user(s) of the valuation results and any constraints the intended use(s) and user(s) might impose on the Member in undertaking the Economic Valuation.

4.2 Scope of Economic Valuation

4.2.1 The Member, in seeking to understand the scope of the Economic Asset that is to be valued, should consider:

(a) the components of the Economic Asset to be valued; for example, to what extent an Economic Valuation may make allowance for business which is yet to be transacted, goodwill or particular business units/products; and

(b) the extent to which the Economic Valuation is to make allowance for the indirect impact of the use(s) of the Economic Asset on the value of other relevant assets in which the intended user(s) of the Member's Report have an interest (for example, synergy benefits, remediation costs and so forth).

4.2.2 Similarly, the Member should ascertain the Materiality limits that apply to the Economic Valuation, bearing in mind:

(a) the quality of the data;

(b) the intended use(s) of the Economic Valuation;

(c) the degree of uncertainty; and

(d) the sensitivity of the overall result to different assumptions.

4.2.3 The context in which an Economic Valuation is being performed by the Member will affect the degree of detail and precision involved. For example, the guidance given in this Practice Guideline would generally be applied differently in the context of a limited scope valuation as discussed in section 4.5. This is particularly relevant in respect of the guidance given on the selection of appropriate models and the reporting of the results of the Economic Valuation.

4.3 Nature of Economic Asset

The Member, in seeking to understand those aspects of the nature and behaviour of the Economic Asset which are relevant to the Economic Valuation, should become familiar with:

(a) the financial drivers of the Economic Asset and its environment;

(b) the accounting treatment used for the Economic Asset; and

(c) relevant features of the industry(s) in which the Economic Asset operates.

4.4 Market value and fair value

4.4.1 Members may, from time to time, be asked to provide advice on the market value or fair value of an Economic Asset or on the Economic Value of an Economic Asset in the context of a project evaluation or wider economic appraisal.

4.4.2 A market value may differ significantly from an Economic Value, with many factors affecting the market value that are not necessarily encompassed within an Economic Value. These include, but are not limited to:

(a) the current state of markets, including supply and demand factors for both relevant Economic Assets and capital;

(b) the current sentiment of markets, including consumer and business confidence, and political and economic events and uncertainty; and

(c) transaction-specific factors, such as: transaction costs; the impact of a transaction on earnings ratios, earnings growth, balance sheet strength and the perception of the market of these; and the strategic rationale for a transaction.

4.4.3 Various accounting standard bodies have issued guidance on fair value, and it is a concept that continues to develop. The annexure to this Practice Guideline provides some relevant background material. In undertaking an Economic Valuation, the Member should consider whether that guidance is specifically or generally applicable. Many economic valuations that Members undertake would be Level 3 valuations under the accounting definitions of fair value (Annexure C). Some ratio methods could be Level 2 valuations.

4.5 Limited scope valuations

4.5.1 Members may be asked to provide limited scope Economic Valuations based on a limited analysis of the key drivers of the Economic Value, as rough indications of Economic Value.

4.5.2 Where such limited scope Economic Valuations are carried out or approximations are used, the Member should:

(a) confirm the limited scope of the Economic Valuation with the Principal; and

(b) adequately disclose in the Member's Report the limitations of the methods, models and data used.

4.6 Responsibility for assumptions

4.6.1 The Member should take responsibility for the selection of all assumptions used in the Economic Valuation, other than those assumptions which are mandated by legislation or which are set by the Principal.

4.6.2 If there are assumptions for which the Member does not take responsibility, the Member should disclose those assumptions (together with any Material implication for the Economic Value of using those assumptions) in the Member's Report.

4.7 Responsibility for valuation results

The Member should:

(a) satisfy himself or herself as to the Material accuracy of the results given the purpose, scope and proposed use(s) of the Economic Valuation; and

(b) perform appropriate validation tests and reasonableness checks on the valuation result and key intermediate results.

5. VALUATION APPROACH

5.1 Valuation steps

The fundamental steps undertaken when performing an Economic Valuation are:

(a) understand the purpose, use and scope of the Economic Valuation;

(b) understand the Economic Asset;

(c) select appropriate methods and models;

(d) determine data requirements, research and analyse available data;

(e) set the assumptions;

(f) build, calibrate and test models;

(g) calculate the results;

(h) analyse the results; and

(i) communicate the results.

5.2 Transparency

5.2.1 Generally accepted practice is for the models, methods and assumptions used for the Economic Valuation to be (as far as practical) transparent, enabling valuation results and sensitivities in the results to changes in particular assumptions to be understood by the intended user(s) of the Economic Valuation.

5.2.2 In selecting the method and models, the Member should be satisfied that the method and models chosen will, if appropriate data and assumptions are used, produce credible Economic Valuation results, given the operating environment of the Economic Asset being valued.

5.3 Allowing for uncertainty

5.3.1 Generally accepted practice is that:

(a) the valuation method(s) used by the Member allow for the impact of uncertainty in realising the projected cashflows on the Economic Value of the Economic Asset; and

(b) the Member satisfies himself or herself that the form of the allowance for uncertainty adopted is appropriate for the particular circumstances and consistent with the type of uncertainty involved. For example, if uncertainty grows the further out in time considered, it may be appropriate to allow for it in a discount rate. On the other hand, if it is concentrated in the short term or diminishes over time, then it may be more appropriate to allow explicitly for the range of possible cashflows and their associated probabilities.

5.3.2 The value and allowance for uncertainty may vary depending on whether, and the extent to which, the uncertainty can efficiently be diversified. Generally accepted practice is for the valuation method and assumptions to have regard to the implied value the market(s) place on diversifiable and non-diversifiable risk.

5.3.3 Where the assumptions contributing to the allowance made for uncertainty are set to be appropriate in aggregate, generally accepted practice is for the Member's Report to disclose that these assumptions will not necessarily give rise to appropriate allowance for uncertainty for a segment of the business.

5.3.4 When using more than one form of allowance for uncertainty, the Member should satisfy himself or herself that the allowance made avoids potential double counting or omission of significant sources of uncertainty.

In particular cases where there are two or more mutually exclusive outcomes, averaging results may be misleading and the Member should consider separately the outcomes of each scenario.

5.4 Dealing with options

5.4.1 In undertaking the Economic Valuation, the Member should satisfy himself or herself that appropriate allowance has been made for options or other sources of non-linear outcomes in the cashflows being modelled.

5.4.2 The Member is encouraged to make explicit allowance for options and non-linear outcomes when the impact of such outcomes is likely to be Material to the Economic Valuation result. This allowance could be achieved by using approaches such as option pricing techniques or stochastic modelling.

5.5 Common Economic Valuation methods

5.5.1 Common Economic Valuation methods likely to be used by Members include:

(a) ratio methods;

(b) risk premium methods (including discounted cashflows);

(c) risk neutral or certainty equivalent methods; and

(d) asset replication methods.

Key aspects of these methods are discussed in the balance of this Section 5.

5.5.2 The Member should satisfy himself or herself that the method(s) used to perform the Economic Valuation are appropriate for the particular circumstances. The method(s) used will usually depend on the size and/or Materiality of the Economic Asset, the complexity of the operations of the Economic Asset, the quality of data available, the intended use(s) of the Economic Valuation and the needs expressed by the Principal.

5.6 Ratio methods

5.6.1 Commonly used ratio methods include:

(a) earnings ratios (for example, price earnings ratios);

(b) stock ratios (for example, percentage of funds under management); and

(c) flow ratios (for example, percentage of new business flows).

5.6.2 Ratio methods rely on:

(a) a high level of stability and predictability in the ratio between the Economic Value and the value driver from past periods to future periods; and

(b) an ability to derive multiples that adequately allow for growth and uncertainty.

5.6.3 Ratio methods are most useful:

(a) for approximate valuations;

(b) in circumstances where the Economic Asset is simple, has no asymmetry and the net cashflows flowing from it are expected to grow uniformly;

(c) as a 'rule of thumb' check on the results of more sophisticated methods; and

(d) to assist in the communication of Economic Valuation results.

5.6.4 Ratio methods are least useful:

(a) where the Economic Asset or its operating environment have a complex nature;

(b) where there is an asymmetry of potential outcomes; and

(c) where variations in business mix can have a Material impact on the Economic Value.

5.6.5 When using a ratio method, the Member should:

(a) consider the limitations inherent in the method and be satisfied that the ratio method chosen is appropriate given the scope of the Economic Valuation being performed;

(b) be satisfied that any parameter on which the ratio method valuation is based is appropriate and is not unduly distorted as at the valuation date. For example, in applying a price earnings ratio, it would be usual to adjust earnings to a level that is considered maintainable; and

(c) be satisfied that the ratio chosen is appropriate to the business characteristics and risk profile of the Economic Asset being valued.

5.7 Risk premium methods

5.7.1 Risk premium methods allow for market uncertainty through the interaction of a risk-adjusted discount rate, the expected earning rate on

capital and the quantum of capital employed in the Economic Asset (in cases where capital is relevant).

5.7.2 The key advantages of risk premium methods are that such methods:

(a) produce projected cashflows that align with real world cashflows and hence are relatively easy to understand and validate;

(b) generally utilise well-established techniques and modelling practices;

(c) facilitate analysis and explanation of the progression of value over time, particularly in the context of comparison of actual versus expected experience;

(d) allow complex cashflows and interrelationships between cashflows to be reflected in the valuation model(s); and

(e) facilitate roll-forward/roll-backward valuations and the projection of Economic Value at future or past dates.

5.7.3 When using a risk premium method, the Member should satisfy himself or herself that the overall allowance for uncertainty in the Economic Valuation:

(a) is appropriate, given the characteristics of the Economic Asset being valued;

(b) does not produce misleading Economic Valuation results. Misleading results can arise when changes in the risk profile of an Economic Asset are reflected in the projected future cashflows without appropriate adjustment to the risk discount rate; and

(c) does not produce misleading results from projecting expected returns from an Economic Asset at a higher rate than the discount rate that is applied to those returns.

5.7.4 The Member should consider the appropriateness of applying risk premium methods in circumstances where:

(a) Material mismatches exist between the liabilities and any assets supporting them;

(b) Material mismatches exist between the drivers of revenues and the drivers of expenses; or

(c) the potential cashflows being valued have an asymmetric distribution and the existence of this asymmetry could have a Material impact on prospective costs or benefits.

In these situations, selection of an appropriate single risk adjusted discount rate may be difficult.

5.8 Risk neutral or certainty equivalent methods

5.8.1 Risk neutral methods allow for market uncertainty in the probability distribution associated with cashflows. Certainty equivalent methods allow for market uncertainty by adjusting the cashflows. In either case, the discount rate used is a risk free rate.

5.8.2 Risk neutral methods are particularly applicable where investment or market related gearing exists, be it:

(a) a Material mismatch between liabilities and backing assets (for example, guaranteed liabilities backed by equities);

(b) a Material mismatch between revenue and expenses (for example, where fee revenue is related to investment markets, but expenses are not); or

(c) for determining an appropriate charge for uncertainty in respect of individual segments of business with different characteristics.

5.8.3 These methods will not produce cashflow projections on a realistic basis. This means that projected cashflows will not be suitable for other purposes, such as business planning. It also means that the communication of the projection results to user(s) and the validation of the risk neutral cashflows may be challenging, as they will not necessarily reconcile to real world cashflows.

5.8.4 In applying these methods, the Member should satisfy himself or herself that the degree to which each cashflow is market-related can reasonably be ascertained or approximated and that the risk neutral probabilities or certainty equivalent cashflows are appropriate.

5.9 Asset replication methods

5.9.1 Asset replication methods can be usefully applied wherever a replicating asset, or basket of assets, can be found for projected individual cashflows or a group of cashflows of the Economic Asset. They may have particular application for assessing the value of market-related guarantees or options embedded within the Economic Asset.

5.9.2 In applying such methods, the Member should satisfy himself or herself that replicating assets appropriately reproduce the cashflows being valued and that all of the relevant valuation cashflows are either reproduced by the replicating assets or otherwise dealt with.

5.9.3 Asset replication methods can be difficult to apply in practice because of difficulty in locating well-traded market assets that have the duration and shape of the cashflows of the Economic Assets being valued.

5.10 Roll-forward/roll-backward valuations

5.10.1 In some circumstances, it may be appropriate to provide an Economic Valuation for a date different to that at which key data has been captured and detailed models produced. Such an Economic Valuation is commonly referred to as a roll-forward or roll-backward valuation.

5.10.2 Generally accepted practice is for the roll-forward/roll-backward method to be consistent with the use(s) to which the Economic Valuation will be put and with the overall Materiality requirements of the Economic Valuation.

5.10.3 Generally accepted practice is to make appropriate allowance for:

(a) Material business experience and cashflows that have occurred over the roll-forward/roll-backward period, including:

(i) the time value of money over the roll-forward/roll-backward period;

(ii) differences between actual experience and the expected experience implied by the base Economic Valuation;

(iii) any release of value from, or injection of value into, the Economic Asset (for example, dividend payments or capital transfers) or Material contracts or guarantees entered into or cancelled during the period; and

(iv) changes to the environment in which the Economic Asset operates which were not anticipated in the base Economic Valuation and that would have a Material effect on the assumptions used to derive the Economic Value of the Economic Asset; and

(b) the impact of correlation effects between assumptions in determining any adjustments.

6. Models used to perform an Economic Valuation

6.1 Introduction

6.1.1 There are four major types of models commonly used by Members in undertaking Economic Valuation work:

(a) *cashflow models:* a model of the future cashflows expected to be generated by the Economic Asset;

(b) *probability models:* a model of contingencies that affect the Economic Asset. These may include models of event occurrence,

claim incidence, contract termination and take-up of product features and options;

(c) *economic models:* a model of the economic variables and their interrelationships that affect the Economic Asset. These typically include factors such as future investment earnings and rates of inflation; and

(d) *risk allowance models:* a model used to generate the assumptions required to allow for the impact of uncertainty on the Economic Value.

6.1.2 The Economic Valuation of an Economic Asset may involve the use of a combination of models.

6.2 Choice of model

6.2.1 The Member should:

(a) choose models for the Economic Valuation that are appropriate to the valuation being performed and the purpose(s) for which the results of the Economic Valuation will be used;

(b) ensure that there is consistency between the economic framework in which the Economic Valuation is being performed and the models chosen;

(c) understand the limitations of the models chosen for the Economic Valuation; and

(d) use models that are consistent within themselves and with each other.

6.2.2 Where models are not consistent and this has the potential to Materially affect results, the Member should disclose the inconsistency in the Member's Report on the Economic Valuation.

6.3 Cashflow model

6.3.1 The Member should choose a cashflow model that appropriately:

(a) reflects all Material cashflows and, in determining the cashflows to be modelled, the Member should consider the key drivers of the Economic Value of the Economic Asset; and

(b) allows for options, guarantees or other asymmetric features of the cashflows, where these are Material to the Economic Valuation.

6.3.2 The Member should be satisfied that the cashflows taken into account when performing an Economic Valuation are consistent. In particular, generally accepted practice is to properly allow in the Economic

Valuation for benefits that are mutually exclusive, or which can only be realised by incurring additional costs.

6.3.3 The Member should use terminal values in the cashflow model chosen by him or her only where the Member is satisfied that this is appropriate taking into account the purpose of the Economic Valuation, the Materiality of the terminal value and the nature and reliability of future cashflow projections.

6.3.4 Generally accepted practice is that the cashflow model:

(a) projects cashflows over appropriate time intervals; and

(b) allows for the timing of the cashflows within the chosen intervals with appropriate accuracy.

Time intervals should generally not exceed one year, although shorter intervals may be appropriate.

6.4 Probability model

6.4.1 Some of the cashflows being modelled may be contingent on the occurrence of particular events. This is particularly true for Economic Assets within the field of insurance.

6.4.2 In such situations, the Member should satisfy himself or herself that probability distributions or point estimates used in the models are reasonable and sufficiently accurate for the purpose of the Economic Valuation, paying particular attention to outcomes that may have a low probability of occurrence, but a high economic impact should they occur.

6.4.3 It may be appropriate to adopt a stochastic approach to modeling aspects of the experience, particularly where there is Material interaction or dependencies between components being modeled.

6.4.4 In undertaking stochastic modelling or simulations, the Member should:

(a) be satisfied that the underlying distributions assumed are reasonable; and

(b) perform a statistically significant number of simulations, particularly where uncertainty in the 'tail' of a distribution or process is being considered.

6.5 Economic model

6.5.1 Some of the cashflows in the cashflow model may be dependent on the value of certain economic variables. These typically include variables such as future investment earnings, rates of inflation and the impact of taxation, although other relevant influences on the Economic Asset may

need to be modelled such as demographic, social, technological or environmental trends.

6.5.2 Where Material to the valuation result, generally accepted practice is for the economic model to appropriately reflect:

(a) relationships and correlations between economic and other variables;

(b) market volatility; and

(c) the period over which cashflows Material to the Economic Valuation are expected to occur.

6.6 Risk allowance model

6.6.1 A range of models exist to allow for uncertainty within the Economic Valuation. These will often be particular to the valuation method chosen, for example:

(a) Capital Asset Pricing Model (CAPM) or similar models for determining risk-adjusted discount rates;

(b) state price deflator models for converting cashflows to the valuation date cash equivalent using 'real world' probabilities; and

(c) explicit risk models for determining appropriate margins to apply to cashflows.

6.6.2 The Member should choose a risk allowance model which:

(a) takes into account observed market data and relationships;

(b) is consistent with the other models and assumptions used in the Economic Valuation;

(c) is appropriate to the nature and extent of the uncertainty; and

(d) is appropriate to the business characteristics of the Economic Asset.

7. DATA

7.1 Introduction

7.1.1 Key data regarding the operations and experience of the Economic Asset is likely to come from:

(a) internal management reports;

(b) interviews with management;

(c) administrative systems;

(d) board reports;

(e) financial statements; and

(f) published industry data.

7.1.2 The data available and its quality will influence the choice of the method(s) and model(s) used for the Economic Valuation.

7.1.3 The Member should be mindful of possible distortions in the data arising from, for example:

(a) recent acquisitions, disposals or mergers;

(b) changes to systems, reports or classifications;

(c) consolidation or segmentation across entities;

(d) changes in the business or management of the Economic Asset;

(e) market or competitive changes;

(f) regulatory changes; or

(g) random fluctuations.

Material distortions should be documented in the Member's Report.

7.2 Relevant data

Generally accepted practice is that:

(a) all data used is relevant to the purpose of the Economic Valuation;

(b) where relevant data is not available, the Member should explain the implications for the Economic Valuation in the Member's Report; and

(c) if data was obtained at a date other than the valuation date, then the Member's Report should include a description of how the data was adjusted to reflect the expected position at the valuation date, together with commentary on the effect of any approximations involved.

7.3 Data reliance and review

7.3.1 Generally accepted practice is that a Member:

(a) review the data obtained for reasonableness, internal consistency and completeness; and

(b) in doing so, consider whether distortions exist in the data and whether adjustments to the data are appropriate to eliminate possible distortions in the Economic Valuation or to allow for expected changes in future conditions under which the Economic Asset will be operating.

7.3.2 Where the Member uses sampling, the Member should use a sufficient number and distribution of samples such that the Economic Value will be fit for its intended use(s) given the nature, homogeneity and complexity of the Economic Asset.

7.4 Consistency of data, methods and models

Generally accepted practice is that:

(a) the data used to populate the chosen model(s) is consistent with the method(s) chosen and the design of the model(s) used for the Economic Valuation; and

(b) if the data does not, or is insufficient to, support the use of a particular method or model, the Member should consider whether a more appropriate approach ought to be used.

8. SETTING ASSUMPTIONS

8.1 Choice of assumptions

8.1.1 There will often be a range of assumptions that the Member could determine as being acceptable for a particular Economic Valuation.

8.1.2 The Member should use a set of assumptions in the Economic Valuation that is:

(a) internally consistent;

(b) free of intentional bias by the Member; and

(c) appropriate to the purpose, scope and proposed use(s) of the Economic Valuation.

Generally accepted practice is for Material correlations between assumptions to be appropriately reflected.

8.1.3 The Member is also encouraged to use assumptions that:

(a) are explicit rather than implicit where these have a Material impact on the assessment of Economic Value;

(b) make allowance for expected future changes in the operating environment such as pricing cycles, experience improvements, margin squeeze, inflation and so forth;

(c) take account of the recent operating experience of the Economic Asset, where this is available; and

(d) are reflective of the key drivers of the value of the Economic Asset.

9. REPORTING

9.1 Professional requirements

9.1.1 Any reporting in respect of Professional Services must comply with the requirements laid down in clause 7 of the Code.

9.1.2 Members are encouraged to consider, if appropriate, the guidance provided in Practice Guideline 199.01 (Prescribed Actuarial Advice Reporting), as per clause 1.1.2 of that Practice Guideline.

9.1.3 The balance of this Section 9 provides additional guidance to Members on reporting with respect to the subject matter of this Practice Guideline. Ultimately, however, the appropriate level of disclosure is a matter of judgment and will depend on many factors, including:

(a) the complexity of the Economic Asset being valued;

(b) the scope of the assignment given to the Member; and

(c) the preferred communication style of the Principal and the intended user(s) of the Economic Valuation.

9.2 Purpose of the valuation

9.2.1 Where the Member believes the Economic Valuation might be used for purposes other than those intended, the Member should disclose any qualifications or limitations on the usage of the Economic Valuation. For example, where the result of an Economic Valuation could reasonably be construed to be a market value or fair value when this was not the intended purpose, the Member could include a statement to that effect in the Member's Report.

9.2.2 An Economic Valuation may be an element in determining a market value or fair value, or as part of a project evaluation. Where the Member prepares an Economic Valuation that may be expected to be used in that way, the Member should:

(a) where appropriate, ensure that the valuation technique and assumptions are consistent with the guidance provided for a Level 3 valuation within the fair value framework (refer Annexure C);

(b) take steps to ensure that any qualifications or limitations on the use of the Economic Value for that purpose are communicated to the Principal and disclosed in the Member's Report; and

(c) note any Material factors which are not considerations in performing the Economic Valuation, but which are likely to be important in the work of which the Economic Valuation is a part (such as non-traded, non-cashflow costs and benefits or indirect costs and benefits).

9.3 Results and limitations

9.3.1 In some situations, the Member may consider it more appropriate to disclose a range in which the Economic Value may lie, rather than a single Economic Value. Where a range is disclosed, the Member should provide advice on how to interpret the range (for example, by explaining the factors that might be likely to result in an Economic Value towards the higher or lower end of the range).

9.3.2 The Member should consider whether to place any limitations on the distribution or use(s) of the Member's Report.

9.4 Analysing and portraying uncertainty

9.4.1 The Member should:

(a) identify the Material elements of uncertainty in the Economic Valuation results; and

(b) draw these to the attention of the Principal in the Member's Report.

9.4.2 Methods that might be used by the Member to convey the degree of uncertainty in the Economic Valuation include those discussed in the balance of this section 9.4 of this Practice Guideline.

9.4.3 Sensitivity testing

In undertaking sensitivity testing, the Member should:

(a) choose sensitivities which focus on the assumptions which are most Material to the results, have high degrees of uncertainty and/or are likely to be of most interest to the Principal and intended user(s);

(b) choose assumption variations that are reasonably likely without being extreme (unless variations in the 'tail' of a distribution or process are being considered);

(c) if possible, vary each of the key assumptions so as to examine roughly equivalent confidence levels around each of those assumptions, or derive the required change in each key assumption for a given change in value;

(d) have regard to non-symmetrical outcomes and cusp points;

(e) treat correlated assumptions (for example, inflation, interest and lapses) consistently; and

(f) consider whether the results of stochastic modelling may be useful.

9.4.4 Scenario testing

In undertaking scenario testing, the Member should:

(a) choose scenarios which are internally consistent;

(b) choose scenarios which represent a range of operating conditions to which the Economic Asset could reasonably be expected to be exposed; and

(c) include scenarios where any Material non-symmetrical features of the Economic Asset will be appropriately tested.

9.4.5 Stress testing

In undertaking stress testing, the Member should:

(a) choose sets of conditions which appropriately examine the stress scenarios that are likely to be Material to the Economic Valuation or of interest to the Principal and intended user(s);

(b) treat correlated assumptions appropriately; and

(c) consider the extent to which the behaviour or management of the Economic Asset may change under conditions of stress.

9.5 Components of value

Where appropriate given the scope and intended use(s) of the Economic Valuation, generally accepted practice is for the component parts of the Economic Value to be separately disclosed. Depending on the Economic Asset and valuation method, the components considered might include:

(a) future new business, separate from existing business;

(b) lines of business;

(c) net assets (however defined by the model);

(d) market or customer segments;

(e) distribution channels;

(f) synergy benefits;

(g) value of franking credits and other taxation effects; or

(h) any other items (for example, guarantees or contracted rights) to which intended user(s) of the Economic Value may ascribe

particular significance.

9.6 Analysis of change in value

9.6.1 Where a prior Economic Valuation exists and sufficient information concerning its composition and determination is available to the Member, the Member should analyse the change in Economic Value since the most recent valuation, unless the scope of the assignment explicitly excludes this task.

9.6.2 The analysis of change would generally identify:

(a) the change in value expected since the prior valuation date using the method, data and assumptions that were applied in the prior valuation;

(b) the effect of changes in the valuation method;

(c) the effect of changes in the valuation model;

(d) the effect of changes in the valuation assumptions. Detail of the effect of the more Material individual assumption changes would usually be shown separately;

(e) the effect of operating experience during the period; and

(f) the effect of capital movements and dividends.

ANNEXURE: OTHER GUIDANCE ON FAIR VALUE AND ECONOMIC VALUATIONS

A. Overview

In recent years, the accounting standards bodies (International Accounting Standards Board ("IASB") and Financial Accounting Standards Board ("FASB")) have issued guidance on fair value. In the aftermath of the financial crisis of 2008/09, additional guidance has been provided on dealing with distressed or illiquid markets. The CFO Forum, a grouping of insurance chief financial officers, has provided guidance on economic valuations which is also relevant to Members' practice.

B. Accounting fair value - definition

B.1 Fair value is a key concept in international accounting standards. In theory, if each asset and liability of a company's balance sheet could be determined using fair value principles, then the excess of assets over liabilities would represent the economic value of the entity. For a variety of practical concerns, this is not achieved under current accounting standards.

B.2 Under the Statement of Financial Accounting Standards No 157 (Fair Value Measurements) issued by the FASB ("FAS 157"), "fair value" is defined as "the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date" under current market conditions.[1] The features of this definition are:

(a) *exit price*: an estimate of the price to sell an asset or to transfer a liability. It is not the price to buy the asset or to incur the liability;[2]

(b) *market participant perspective*: a fair value measurement is a market-based measurement, not an entity-specific measurement. Therefore, a fair value measurement uses the assumptions market participants would use when pricing the asset or liability, including assumptions about risk;[3]

(c) *orderly transaction*: "[a]n orderly transaction is a transaction that assumes exposure to the market for a period prior to the measurement date to allow for marketing activities that are usual and customary for transactions involving such assets or liabilities; it

1 FAS 157, clause 5 (at page FAS 157-6).

2 FAS 157 at page FAS 157-2.

3 FAS 157 at pages FAS 157-2 to FAS 157-3.

is not a forced transaction (for example, a forced liquidation or distress sale)";[4] and

(d) *timing of transaction*: the transaction to sell an asset or to transfer a liability occurs at the measurement date, taking into account market conditions at that date and the market's expectations about future economic events related to the asset or liability.

C. Accounting fair value – market inputs

Consistent with the market participant perspective of a fair value price, accounting standards[5] place emphasis on the use of market inputs in estimating the fair value for an asset or liability. However, recognising that market inputs (including quoted prices, credit data, yield curve, etc) may not always be available or appropriate, the fair value framework uses a three level fair value hierarchy to reflect the level of judgment which may be involved in estimating fair values.[6] Briefly:

(a) Level 1 valuations use quoted prices in active markets for identical assets or liabilities, where the reporting entity must have access to that market. Information at this level is based on direct observations of transactions involving the identical assets or liabilities being valued, not assumptions;

(b) Level 2 valuations are valuations based on market observable inputs. Information at this level is based on observable market data which is sufficiently applicable to the reported items to allow the fair values to be estimated. Examples of observable market inputs include: quoted prices for similar assets, interest rates, yield curve, credit spreads, prepayment speeds, etc; and

(c) Level 3 valuations estimate fair value using a valuation technique and use significant assumptions or inputs which are based upon information that is not observable in the market and, therefore, necessitates the use of internal information. That is, the assumptions and inputs used are the reporting entity's own assumptions and inputs.

D. Accounting fair value - distressed and illiquid markets

D.1 Situations in which there is little, if any, market activity for an Economic Asset at the measurement date may require that additional consideration be given to the valuation approach.

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4 FAS 157, clause 7 (page FAS 157-7).

5 FAS 157.

6 Refer the discussion at FAS 157, clauses 22 to 31 (pages FAS 157-10 to FAS 157-12).

D.2 Indicators that a market is dislocated include:

(a) there are few recent transactions;

(b) price quotations are not based on current information or vary substantially either over time or among market makers;

(c) indexes that previously were highly correlated with the fair values of the asset or liability are demonstrably uncorrelated with recent indications of fair value for that asset or liability;

(d) there is a significant increase in implied liquidity risk premiums, yields or performance indicators;

(e) there is a wide bid-ask spread or significant increase in the bid-ask spread;

(f) there is a significant decline or absence of a market for new issuances (that is, a primary market) for the asset or liability or similar assets or liabilities; and

(g) little information is released publicly.

D.3 Such indications of dislocated markets may cause the Member to use more of the entity's own assumptions or historic market inputs, in preference to market inputs that may be distorted by the market dislocation.

E. CFO Forum

E.1 The CFO Forum is a grouping of mainly European-based chief financial officers. Further details are available on its website www.cfoforum.nl. In October 2009, the CFO Forum issued two papers entitled "Market Consistent Embedded Value Principles" and "Market Consistent Embedded Value Basis for Conclusions" which are available on its website.

E.2 Although these papers provide specific guidance to ensure consistency in the reporting of the embedded value, certain of the guidance is generally applicable to economic valuations. The following points in particular are worth noting, namely that:

(a) the value of in force policies may be considered to consist of the present value of future profits, the time value of options and guarantees, frictional costs of invested assets and the cost of residual non-hedgeable risks;

(b) stochastic methods are generally required to value options and guarantees;

(c) an economic valuation of a corporate structure should consider the frictional costs of investing assets in a corporate structure. These costs include tax costs and investment costs in excess of those that would be incurred if the assets were held directly by an investor;

(d) the cost of hedgeable risks may be determined by valuing the associated hedges (effectively a Level 2 fair value method as defined by accounting standards); and

(e) the cost of non-hedgeable risks be compared to the cost of holding additional capital to cover these risks. Little guidance is provided as to how these costs may be determined.

END OF PRACTICE GUIDELINE 199.03