Institute of Actuaries of Australia

LIFE INSURANCE & WEALTH MANAGEMENT PRACTICE COMMITTEE

Technical Paper: Risk-free Discount Rates under AASB 1038

March 2010

Contents

1. TECHNICAL PAPER STATUS

1.1 This Technical Paper was first published (as a Discussion Note) in February 2005 and was prepared by the Valuation Standard Review Task Force of the Institute of Actuaries of Australia ("Institute").

It was then updated in October 2008 by the Institute's Life Insurance and Wealth Management Practice Committee ("LIWMPC") and again updated in February 2010.

This Technical Paper does not represent a professional standard of the Institute and it has been prepared for the purposes of generating discussion on aspects of risk-free discount rates under AASB 1038 issued by the Australian Accounting Standards Board ("AASB") that may lead to divergent practices within the Institute's membership. This Technical Paper does not constitute accounting advice.

1.2 Feedback from Institute Members is encouraged and should be forwarded to the Life Financial Reporting Sub-committee of the LIWMPC.

2. BACKGROUND

2.1 This Technical Paper concentrates on the choice of discount rates under the revised AASB 1038 (effective 1 January 2005). These discount rates would apply to valuing protection insurance, lifetime annuity and other life insurance business where policyholder benefits are not contractually linked to the performance of the assets held.

2.2 This Technical Paper does not apply to determining discount rates under other Australian Accounting Standards.

2.3 The determination of risk-free discount rates became particularly topical following the investment market turmoil in late 2007 and early 2008. This led some market observers to question conventional thinking regarding the allowance for risk and liquidity in market yields. The conclusions in this Technical Paper reflect consideration of those developments. Nevertheless, new information and research is becoming available all the time and this field is changing rapidly. Members should take account of this when developing assumptions for risk-free rates.[1]

2.4 It is noted that the appropriate risk-free rates to be used for valuing liabilities are an assumption and hence their determination requires judgment. There is no readily available measure that is universally accepted as the definitive measure of risk-free interest rates. It is also noted that changes in discount rates only impact the timing of emergence of profit, not the absolute amount.

2.5 In the interests of consistency of market disclosure and compliance with the

[1] Risk-free rates also figure in APRA Prudential Standards for the types of business covered in this Technical Paper, relating to the Valuation of Policy Liabilities, Solvency and Capital Adequacy. In the case of the latter two Prudential Standards, the risk-free rate must not exceed the mid swap rate.

requirements of AASB 1038, it is desirable that consistent methodologies should be adopted for determining risk-free discount rates across the industry and through time.

2.6 Conclusions (and influencing arguments) are presented first with relevant legislation being referenced afterwards.

3. SUMMARY OF CONCLUSIONS

3.1 The selection of 'risk-free' discount rates is at the discretion of the Member and need not be interpreted solely as a government bond rate.

3.2 Discount rates should be derived from observable and objective rates that vary with term.

3.3 A range of information sources exist for this purpose including government bond yields (Commonwealth and State), yields on high quality bonds and inter-bank swap rates. A Member may wish to compare risk-free rates determined from multiple sources prior to finalising his or her assumption.

3.4 It is appropriate that the chosen rates are adjusted for underlying default risk and any associated credit risk premium.

3.5 No allowance should be made for 'own credit risk'.

3.6 It may be appropriate to add a liquidity margin to the default-risk adjusted rates.

3.7 The nature of the liability and the interaction of the cash flows should be considered when determining a liquidity margin to be added.

3.8 It should be noted that credit risk default probabilities, credit risk premiums and liquidity premiums change over time and can fluctuate significantly in the short term. Any adjustments made to current market interest rates in respect of these components in developing the risk-free rate assumptions should be consistent with market conditions at that time.

3.9 Despite the possibility that the resulting discount rates may be greater than the default adjusted market yield on the actual assets backing the liabilities, the resulting discount rates should be used when assessing liability adequacy.

3.10 If investment expenses are allowed for through a deduction from the discount rates, then the Member should judge whether it is more appropriate for the deduction to reflect the expected investment expenses of the actual backing assets or – if different - the notional costs of administering a portfolio of risk-free assets.

3.11 Guaranteed benefits of participating insurance contracts should be discounted at 'risk-free' rates when considering the adequacy of the policy liabilities.

3.12 The decision on whether to adopt a single discount rate or term-dependent discount rates should have regard for reinvestment risk, taking into account the nature of the liabilities, the shape of the yield curve and the materiality of outcomes.

4. CONSIDERATIONS

4.1 The following strongly influenced the LIWMPC's considerations:

(a) the discount rates used to value cash flows should be independent of the rates that are obtainable on any particular assets chosen to meet those liabilities;

(b) two companies having the same product with the same expected cash flows by nature, term and structure should place materially the same value on their liabilities;

(c) the choice of investment strategy should not affect the value of liabilities (even where liability adequacy is an issue);

(d) total profits (either long-term or in a reporting period) are determined, *inter alia*, by the investment strategy: for a given investment strategy, the choice of discount rates merely affects the split between planned and experience profits (as long as liability adequacy in a reporting period is not an issue); and

(e) the wording of paragraphs 8.7, 8.8 and 8.8.2 of AASB 1038.

5. STARTING POINT

5.1 The concept of 'risk-free' discount rates extends beyond the government bond rates of appropriate duration. Paragraph 8.8.2 of AASB 1038 clearly states that although government bond rates may, in some cases, provide appropriate discount rates, in other cases they may only be a starting point.

5.2 This is further reinforced by the 23 August 2004 letter from the Chairman of the AASB to the then President of the Institute (see Appendix 1) which makes it clear that the AASB included paragraph 8.8.2 of AASB 1038 to ensure that the phrase "risk-free rates" was not narrowly interpreted to be government bond rates.

5.3 Financial contracts and insurance policies are always an asset of one party and a liability of another. The fair value of a liability should therefore be equal to the fair value of an asset (or portfolio of assets) whose cash flows match those of the liability in nature, structure and term. Therefore, the risk discount rates used to value the liability would be that implied from the yield achievable on such an asset (or portfolio of assets). While the accounting standards do not require fair values to be used for insurance liabilities, it would be preferable for life insurance liabilities to be more or less consistent with the fair value of assets and the fair value of life investment liabilities on the same balance sheets.

5.4 These discount rates would normally be term-dependent discount rates which avoid the reinvestment risk associated with gross redemption yields.

5.5 Members should not assume that market prices are necessarily consistent with each other. For example, swap rates quoted by different banks may differ and quoted prices may vary depending on the trading volumes upon which they are based and these influences may lead to volatility of quoted prices over time.

5.6 Historical data should be used with caution as it depends on the time period to which it relates and may not reflect the current market view.

6. SHALLOW MARKET ADJUSTMENTS

6.1 The yield of a bond (for example, corporate bonds and government bonds) will be impacted by imbalances between the supply and demand for that instrument and other similar instruments.

6.2 Where the supply of a bond is lower than the demand for that bond, the quoted yield may be bid down by buyers, creating a scarcity discount. A scarcity discount, therefore, reflects the reduction in yield buyers are willing to receive in order to encourage holders of the bond to sell.

6.3 Alternatively, if the supply of the bond is higher than the demand for the bond, the quoted yield may be bid up by sellers, creating a liquidity premium. A liquidity premium, therefore, reflects the increase in yield sellers must offer buyers to encourage them to enter the market and purchase the bond from a seller.

Scarcity discounts

6.4 A common starting point for setting risk free discount rates is government bond rates. However, at some times the overall supply of government debt can be significantly lower than the demand for it, which may lead to a "scarcity discount" in quoted prices.

6.5 There is a range of views as to whether a scarcity discount exists for Australian Government bonds. Appendix 3 lists a number of references covering various views (this list is not intended to be comprehensive).

6.6 It is noted that, at the time of writing, the supply of government debt is generally increasing and the level of any scarcity discount, if it exists, may decline in future.

6.7 If government bond rates are used as the starting point, the Member can therefore consider adding an appropriate "shallow market" margin to the quoted rates.

Liquidity premiums

6.8 Another starting point is corporate bond rates. However, the overall supply of debt by that issuer may be significantly higher than the demand for it, leading to a "liquidity premium" in quoted prices.

6.9 The existence of a liquidity premium in the price of corporate bonds has been the subject of a vast number of research papers. The UK consultancy firm Barrie and Hibbert has recently published a paper[2] which consolidates the results and findings from a broad range of research.

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2 "Liquidity Premium - Literature review of theoretical and empirical evidence", Barrie & Hibbert Research Report, September 2009. To access the report, click here.

6.10 This paper concludes that "while there is some mixed evidence, the consensus from the academic literature seems clear: liquidity premia do exist in the corporate bond markets, can be substantial, but vary significantly through time".

6.11 The paper also considers the various techniques that have been adopted for quantifying the liquidity premia.

6.12 If corporate bond rates are used as the starting point, the Member can therefore consider deducting an appropriate "shallow market" margin to the quoted rates.

7. CREDIT RISK ADJUSTMENT

7.1 The requirement of paragraph 8.7 of AASB 1038 for discount rates to be 'risk-free' means that the asset cash flows should be adjusted for risk of default and any associated risk premium.

7.2 Since paragraph 8.7 of AASB 1038 does not refer to the company's ability to pay the claims, it would be inappropriate to allow for the possibility that obligations to policyholders are not met. In other words, no allowance for 'own credit risk' should be made. This is consistent with most companies in the market having an extremely low risk of default to policyholders, reflecting the strong prudential regulations in Australia.

7.3 Paragraph 8.8.2 of AASB 1038 is not definitive as to whether the rates that are used as a starting point have to be government bond rates.

7.4 Alternative rates that satisfied the requirements of paragraph 8.7 of AASB 1038 are acceptable. Where a number of alternative rates satisfy the requirements of paragraph 8.7 of AASB 1038, then the choice of discount rates is at the discretion of the Member.

7.5 It is noted that the inter-bank swap curve meets the requirements of paragraph 8.7 of AASB 1038 by being observable, objective and varying with term. Adjusting this curve for an appropriate risk premium (associated with the swap curve) would also mean that the resultant curve could be considered 'risk-free'.

7.6 The inter-bank swap curve may be more appropriate than with government borrowing rates as it generally reflects a low credit risk and is less impacted by supply and demand considerations that may distort the yield on government instruments.

7.7 For liabilities whose cash flows are CPI linked, assets whose cash flows are also linked to CPI would give appropriate discount rates. It is noted that a CPI linked swap market has recently developed in Australia and this swap curve represents an additional information source to the market yields on CPI linked securities.

7.8 In adjusting for the risk premium, the Member may find it more convenient to make an appropriate deduction from discount rates derived from unadjusted asset cash flows rather than adjusting the asset cash flows prior to deriving the discount rates.

7.9 To assess the risk premium the Member may consider the work of rating agencies in quantifying default probabilities and severity of losses for stocks of similar credit rating. The rating agencies' publications of default risk are typically expected or actual historic

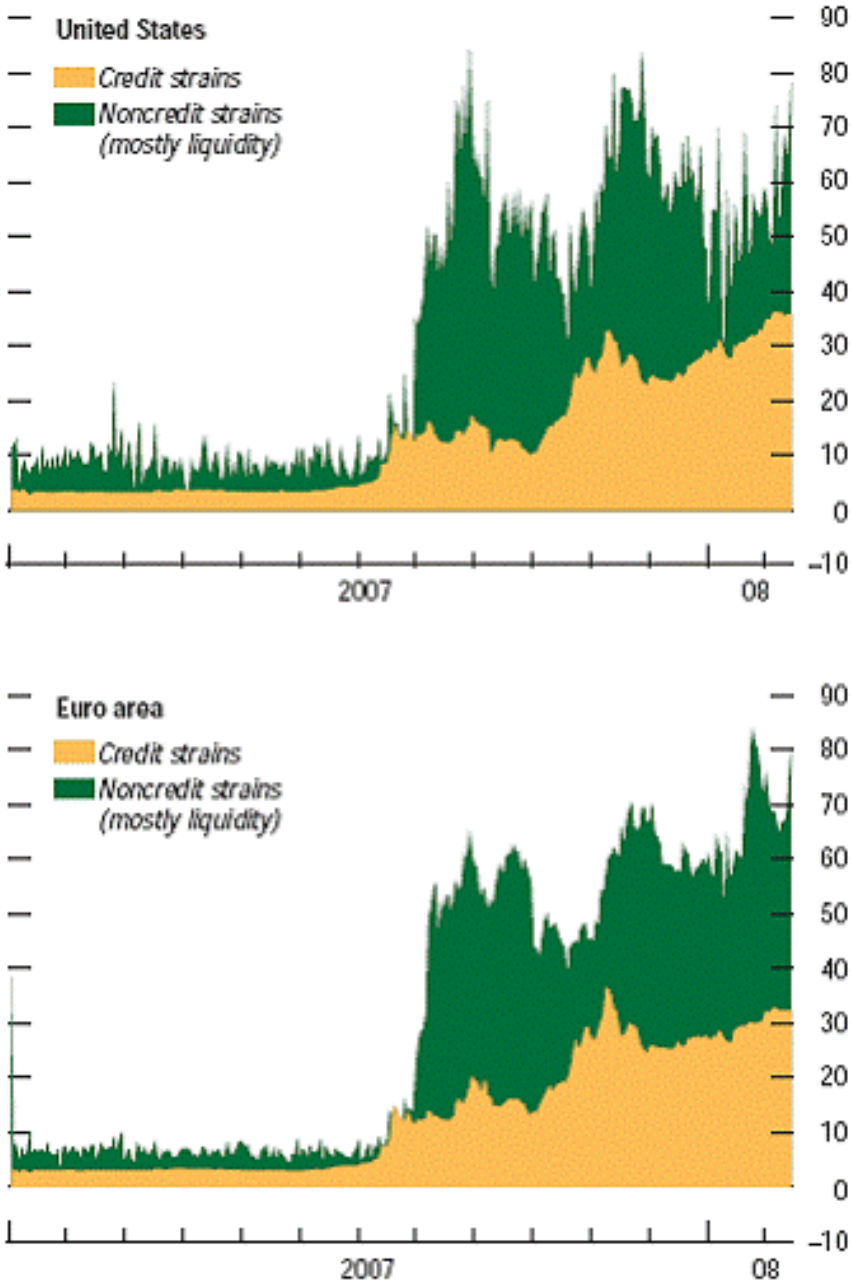
values which may be useful in estimating the expected value (mean) of future defaults.

When using this data, Members should be aware that there is a market premium associated with default risk. This market premium is added to the expected value (mean) of future defaults in deriving an estimate of the risk premium.

Other market data may be available which provides estimates of risk premiums directly, such as spreads on credit default swaps. The following charts illustrate the increase in one-year credit default swap spreads for banks that determine the LIBOR that occurred in 2008. The graphs also illustrate one way of estimating noncredit margins associated with LIBOR.

Figure 1.20. Decomposing Interbank Spreads

(In basis points)



Sources: Bloomberg L.P.; and IMF staff estimates.

Note: Credit strains are derived by averaging the one-year credit default swap spreads of the banks that determine dollar LIBOR and euro LIBOR rates. These results are then subtracted from the spread between LIBOR and overnight index swaps (OIS) to determine noncredit strains, which are likely to be liquidity related.

7.10 It should be noted that estimating the credit risk premium using credit default swaps cannot be applied directly to the inter-bank swap curve. This is because the inter-bank swap curve is currently built up from forward rates that include only the credit risk for 3 - 6 month terms, depending on the terms of the swap contract. It might be reasonable to deduct the 6 month credit default swap spread.

7.11 Historically, the resulting risk of default was determined to be small for the inter-bank swap curve and so it was assumed that the long-term risk premium associated with the risk of default was also small. However, since mid 2007, the spread between Commonwealth Government bond yields and inter-bank swap rates has widened significantly (similar to the trend shown in the charts above).

7.12 This suggests that the market has increased both the default and illiquidity premiums in the inter-bank swap rates. As noted in paragraph 7.1, risk-free discount rates should be exclusive of any allowance for default risk (liquidity premiums are discussed in Section 9).

7.13 The adjustment for credit risk should reflect market conditions as at the valuation date and, like any assumption, should be carefully considered where the credit risk adjustment has a material impact on the valuation results. It is noted that the credit risk components of market yields can vary over time and are more difficult to estimate when markets are thin or volatile.

8. NOMINAL AND REAL YIELDS

8.1 The above considerations, observations and conclusions apply to the determination of both nominal and real risk-free discount rates.

8.2 It is noted that, historically, the supply of inflation indexed Australian Government bonds has been lower than for nominal Australian Government bonds. Therefore, historically, the scarcity discount associated with inflation indexed bonds may have been higher than for nominal Australian Government bonds (refer to references in Appendix 3 for further details). It is anticipated that the supply of indexed Australian Government bonds will increase in future years,[3] which may impact the magnitude of the difference in future.

9. LIQUIDITY OF LIABILITIES ADJUSTMENT

9.1 The term liquidity premium refers to the extra return demanded by investors as compensation for holding assets that may be difficult to convert into cash. It may be reasonable to allow for a liquidity premium when determining risk-free discount rates depending on the features of the liability cash flows. Such a premium will vary according to the nature of the liabilities For example:

(a) Lifetime annuities without guaranteed surrender terms are not 'at call' liabilities since the surrender terms are at the discretion of the company and not

[3] Click here for reference.

guaranteed. Consequently, the cash flows can be considered to be illiquid.

(b) For risk products, the balance of future income and outgo normally represents an asset to the life company. The balance of future income and outgo for an individual policy is dependent upon the actions of the policyholder and normally cannot be influenced (except indirectly) by the life company. Therefore, the asset could be considered to be illiquid as well, subject to policyholder behaviour.

9.2 Whilst the inclusion of a liquidity premium is theoretically sound, liquidity premiums can be difficult to estimate in practice and can vary over time. Financial markets may be used to derive an indication of a suitable margin to apply for the illiquidity of the cash flows being valued, although liquidity premiums will rarely be observable in the market without additional credit risk margins. Judgment will be required to estimate that part of the total margin in respect of the asset's illiquidity. The use of a liquidity premium greater than that observed in financial markets would require careful justification.

9.3 As for any material valuation assumption, an assumed liquidity premium that has a material impact on the valuation of liabilities should have a robust basis and be regularly reviewed for reasonableness.

9.4 Appendix 2 outlines overseas developments regarding liquidity of liabilities adjustments, and setting risk-free discount rates more generally.

10. COMPARISON OF EXAMPLE STARTING POINTS

10.1 There are clearly advantages and disadvantages associated with each of the different possible starting points for determining risk-free rates. The table below compares three possible starting points, although others are possible, such as semi-government bonds. The comments in the table are applicable under current Australian conditions only.

	Commonwealth bond rates	Inter-bank swap rates	Corporate bonds
Shallow market adjustment	A "scarcity discount" adjustment may be required if the supply of bonds is significantly lower than demand.	Active market (at least at the short end) so no adjustment generally needed.	A "liquidity premium" adjustment may be necessary. Major bank bonds and Corporate bond indices normally reflect high trading volumes (at least at the short end), so generally adjustment is needed only if less actively traded bonds are chosen, or during periods where credit market liquidity falls.
Credit risk adjustment	Generally considered to be	Difficult to assess. One option is to	Difficult to assess. One option is to determine

	Commonwealth bond rates	Inter-bank swap rates	Corporate bonds
	minimal credit risk so adjustment is straightforward (or nil).	determine 6 month default risk from the cost of bank credit default swaps.	default risk from the cost of credit default swaps. Another is to consider the work of rating agencies in quantifying default probabilities and severity of losses for stocks of similar credit rating. Also, an adjustment may be required to allow for the market risk premium associated with the cost of default.
Liquidity of liabilities adjustment	Difficult to assess. One approach is to consider liquidity margins for assets of a similar liquidity and duration.		

10.2 With all the adjustments, they are likely to vary over time and therefore care is needed when determining the need for, and magnitude of, the adjustments. This is particularly relevant when using historic data to set the adjustments, as historic data may not reflect the market's expectations of the future.

10.3 For each of the adjustments, consideration should be made as to whether a spot or curve assumption should be adopted.

11. LIABILITY ADEQUACY

11.1 The discount rates adopted for the liability adequacy test are worthy of particular discussion. In particular, the rather extreme example of a company investing in cash to meet long-term annuity liabilities was considered.

11.2 Using risk-free discount rates derived in accordance with paragraph 8.7 of AASB 1038 could lead to the liabilities being discounted at higher rates than the assets were expected to yield. Where liability adequacy is not an issue, there would be no impact on the balance sheet and the only impact in a reporting period would be between planned and experience profits. However, if liability adequacy were an issue, then the use of risk-free discount rates would lead to inadequate liabilities being established on a best-estimate (not prudential) basis to meet future outgoes, and lead to expected losses in future years.

11.3 However, the aim of AASB 1038 with respect to discount rates is to place a value on the liabilities independent of the investment strategy of the company concerned. Therefore, the adequacy or otherwise of liabilities should also be assessed independently of a company's investment strategy. Additionally, the wording of paragraphs 8.1(a), 8.6.1 and 8.7 of AASB 1038 means that the Member must use risk-free

discount rates in accordance with paragraph 8.7 of AASB 1038 when assessing liability adequacy.

11.4 'Guaranteed benefits' (as defined in AASB 1038) of participating insurance contracts should also be discounted at 'risk-free' rates when considering the adequacy of the policy liabilities.

12. INVESTMENT EXPENSES

12.1 It is common practice to allow for investment management expenses (IME) through a deduction from discount rates.

12.2 There are differing views as to whether this deduction should reflect expected future IME of the actual backing assets or those associated with a 'risk-free' portfolio. Factors that might be taken into account in choosing the investment management expenses assumption are set out in the table below:

Item	IME based on riskier assets	IME based on risk-free portfolio
LPS 1.04 requirements	Aligns with requirement to cover current-year maintenance expenses	Aligns with requirement to cover the cost of managing a risk-free portfolio
Explicit expenses	Aligns with explicit expense approach	Aligns only if explicit expenses based on risk-free earning rate
Loss recognition	More prudent	Assumes extra costs offset by higher returns
AASB 1038 requirements	Aligns with requirement for best-estimate expenses	Requires investment expenses to be treated separately from other expenses
Assumption setting	Aligns with expense apportionment	Requires separate expense apportionment, with no allocation of overheads to IME
Discount rate assumption	Does not align with risk-free portfolio	Aligns with risk-free portfolio
Law of one price	Liability dependent on actual asset mix (and own-company expenses)	Liability independent of actual portfolio (but not own-company expenses)

12.3 The following points are noted:

(a) Assumptions as to investment expenses normally cover the charges made by an investment manager rather than actual costs of investing.

(b) The decision is most critical where profit margins are small or nil. In other cases:

(i) any inconsistency between the investment expense assumption and the discount rates will only affect the split between planned and experience profits; and

(ii) a change in investment strategy (with a consequential change to investment expense assumptions) would not normally lead to a change in liabilities since there would be a re-equation of profit margins.

13. OTHER CONSIDERATIONS

13.1 There should be no margin for non investment uncertainties in the expected cash flows. This would be counter to paragraph 8.8.1 of AASB 1038.

13.2 The decision as to whether a single discount rate or term-dependent discount rates should be used should remain one for individual Member judgment having regard to the materiality of outcomes. However, the Member is reminded of the reinvestment risk associated with a single discount rate and that the reinvestment risk on a portfolio may change with change in the shape of the yield curve or a change in the duration of the portfolio.

13.3 For liabilities denominated in overseas currencies, most of the above principles should be applied using equivalent overseas rates. As discussed above, the risk-free rate adopted should not include a credit premium for own credit risk. In some overseas countries, quoted yields may include a significant premium for sovereign risk. The Member should consider whether it is appropriate to adjust the risk-free rate for sovereign risk.

13.4 A consistent methodology should be adopted for determining the risk-free rates to be assumed for valuing all liabilities within the life company. Although term annuities are classified as investment contracts and therefore not accounted for under AASB 1038, uniformity of approach between term and lifetime annuities is desirable.

14. DISCLOSURES

14.1 The approach to determining the risk-free discount rates applicable to each portfolio of liability cash flows should be set out in the Financial Condition Report. This should include details such as: the market observed rates used as a starting point; adjustments for credit risk; and adjustments for liquidity.

For example, the approach could be articulated as follows:

Discount Rate = Market Observed Rate

+/- Adjustment for reinvestment risk[4]

+/- Shallow market adjustment

[4] For example, where the Market Observed yield curve is a bond yield curve rather than a spot yield curve.

- Credit Margin Assoc with Observed Rate

\+ Liquidity Margin appropriate for liability being valued

14.2 The source and/or method of calculation of each item above should be described.

14.3 Generally, the steps in deriving the discount rate set out above would be carried out across the entire yield curve. Therefore, in describing the process as set out above, the Member could use example points on the yield curve.

14.4 If the Member chooses to adopt a "spot" yield rather than a yield curve, then his or her reasons for doing so should be described, together with the tests carried out to ensure that the impact is not material.

APPENDIX 1: Selected References

AASB 1038: Paragraphs 8.6

8.6 Life insurers shall perform a *liability adequacy test*.

8.6.1 Situations may arise where the present value of the planned margin of revenues over expenses for a group of related products will be adjusted as a result of changing underlying assumptions to the extent that the planned margin is eliminated and becomes a planned loss. That is, a review of expected future cash flows indicates that the present value of estimated future expenses for a group of related products exceeds the present value of estimated future revenues. In such circumstances, the excess of the present value of expenses over revenues arising during the reporting period is recognised in the income statement in the reporting period in which the assessment is made. The loss reflects a higher present obligation due to adverse future experience, which is now expected in future years. Whilst the future cash flows giving rise to the loss are yet to occur, this treatment is justified on the basis that entering into life insurance contracts is an event that gives rise to a present obligation to meet the expected future claims.

8.6.2 A group of related products, for the purpose of the calculating the planned margin, performing the liability adequacy test and for disclosure, would be products that have substantially the same contractual terms and were priced on the basis of substantially the same assumptions.

8.6.3 In reviewing expected future cash flows, the insurer takes into account both future cash flows under insurance contracts it has issued and the related reinsurance contracts.

8.6.4 Where an intangible asset has arisen under paragraph 13.1.1(b), a loss arises when the present value of planned margins of revenues over expenses is less than the related intangible asset. This test is to be performed for groups of related products and the intangible asset is allocated, on a reasonable basis, across these groups. Any loss is recognised as an expense in the income statement. In recognising the loss in the income statement, the life insurer first writes down the related intangible asset and then reflects any additional liability in the life insurance liabilities.

AASB 1038: Paragraphs 8.7 - 8.8

8.7 To the extent that the benefits under life insurance contracts are not contractually linked to the performance of the assets held, the life insurance liabilities shall be discounted for the time value of money using risk-free discount rates based on current observable, objective rates that relate to the nature, structure and term of the future obligations.

8.8 To the extent that the benefits under life insurance contracts are contractually linked to the performance of the assets held, the life insurance liabilities shall be discounted using discount rates based on the market returns on assets backing life insurance liabilities.

8.8.1 In applying paragraph 8.7, the discount rates adopted are not intended to reflect risks inherent in the liability cash flows, which might be allowed for by a reduction in the discount rate in a fair value measurement, nor are they intended to reflect the insurance and other non-financial risks and uncertainties reflected in the life insurance liabilities. The discount rates are not intended to include allowance for the cost of any options or guarantees that are separately measured as part of the life insurance liabilities.

8.8.2 In applying paragraph 8.7, typically, government bond rates may be appropriate discount rates for the purposes of this Standard, or they may be an appropriate starting point in determining such discount rates.

Extract of 23/8/04 letter from David Boymal (Chairman, AASB) to Graham Rogers (then President of the Institute)

The Board has included requirements in both AASB 1023 and AASB 1038 to discount insurance liabilities only for the time value of money. The terminology applied in the Standards is "using risk-free discount rates that are based on current observable, objective rates that relate to the nature, structure and term of the future obligations". This is in accordance with a recommendation of the HIH Royal Commission and with the spirit of discounting adopted in most International Accounting Standards Board (IASB) Standards. I do acknowledge, however that much work remains to be done to make the IASB Standards (and the Australian equivalents) consistent as regards discounting, and that little is likely to change until a fundamental project is undertaken on the subject at an international level – something the AASB is encouraging the IASB to do.

The Board appreciates your concerns about risk-free rates being interpreted as meaning sovereign government bond rates. For this reason, the Board agreed to include commentary in both standards that notes "Typically, government bond rates may be appropriate discount rates for the purposes of this Standard, or they may be an appropriate starting point in determining such discount rates." In other words, government bond rates are not necessarily the answer and no doubt many entities will seek actuarial advice on determining risk-free rates suitable for their circumstances.

AASB 4: Paragraphs 27 – 29

27. Insurer need not change its accounting policies for insurance contracts to eliminate future investment margins. However, there is a rebuttable presumption that an insurer's financial statements will become less relevant and reliable if it introduces an accounting policy that reflects future investment margins in the measurement of insurance contracts, unless those margins affect the contractual payments. Two examples of accounting policies that reflect those margins are:

    a) Using a discount rate that reflects the estimated return on the insurer's assets; or

    b) Projecting the returns on those assets at an estimated rate of return, discounting those projected returns at a different rate and including the result in the measurement of the liability.

28. An insurer may overcome the rebuttable presumption described in paragraph 27 if, and

only if, the other components of a change in accounting policies increase the relevance and reliability of its financial statements sufficiently to outweigh the decrease in relevance and reliability caused by the inclusion of future investment margins. For example suppose that an insurer's existing accounting policies for insurance contracts involve excessively prudent assumptions set at inception and a discount rate prescribed by a regulator without direct reference to market conditions, and ignore some embedded options and guarantees. The insurer might make its financial statements more relevant and no less reliable by switching to a comprehensive investor-oriented basis of accounting that is widely used and involves:

(a) Current estimates and assumptions;

(b) A reasonable (but not excessively prudent) adjustment to reflect risk and uncertainty;

(c) Measurements that reflect both the intrinsic value and time value of embedded options and guarantees; and

(d) A current market discount rate, even if that discount rate reflects the estimate return on the insurer's assets.

29. In some measurement approaches the discount rate is used to determine the present value of a future profit margin. That profit margin is then attributed to different periods using a formula. In those approaches, the discount rate affects the measurement of the liability only indirectly. In particular, the use of a less appropriate discount rate has a limited or no effect on the measurement of the liability at inception. However, in other approaches, the discount rate determines the measurement of the liability directly. In the latter case, because the introduction of an asset-based discount rate has a more significant effect, it is highly unlikely that an insurer could overcome the rebuttable presumption described in paragraph 27.

IFRS 4: Basis for Conclusions

BC134 In the Board's view, the cash flows from an asset are irrelevant for the measurement of a liability (unless those cash flows affect (a) the cash flows arising from the liability or (b) the credit characteristics of the liability). Many existing measurement practices for insurance liabilities conflict with this principle because they use a discount rate based on the estimated return from the assets that are deemed to back the insurance liabilities. However, the Board concluded that it could not eliminate these practices until phase II gives guidance on discount rates and the basis for risk adjustments.

AASB 139 Application Guidance: AG 79 and AG 82 (extract)

AG79. In applying discounted cash flow analysis, an entity uses one or more discount rates equal to the prevailing rates of return for financial instruments having substantially the same terms and characteristics, including the credit quality of the instrument, the remaining term over which the contractual interest rate is fixed, the remaining term to repayment of the principal and the currency in which payments are to be made. Short-term receivables and payables with no stated interest rate may be measured at the original invoice amount if the effect of discounting is immaterial.

AG82. An appropriate technique for estimating the fair value of a particular financial instrument would incorporate observable market data about the market conditions and other factors that are likely to affect the instrument's fair value. The fair value of a financial instrument will be based on one or more of the following factors (and perhaps others).

(a) *The time value of money (i.e. interest at the basic or risk-free rate)*. Basic interest rates can usually be derived from observable government bond prices and are often quoted in financial publications. These rates typically vary with the expected dates of the projected cash flows along a yield curve of interest rates for different time horizons. For practical reasons, an entity may use a well-accepted and readily observable general rate, such as LIBOR or a swap rate, as the benchmark rate. (Because a rate such as LIBOR is not the risk-free interest rate, the credit risk adjustment appropriate to the particular financial instrument is determined on the basis of its credit risk in relation to the credit risk in this benchmark rate.) In some countries, the central government's bonds may carry a significant credit risk and may not provide a stable benchmark basic interest rate for instruments denominated in that currency. Some entities in these countries may have a better credit standing and a lower borrowing rate than the central government. In such a case, basic interest rates may be more appropriately determined by reference to interest rates for the highest rated corporate bonds issued in the currency of that jurisdiction.

(b) *Credit risk*. The effect on fair value of credit risk (i.e. the premium over the basic interest rate for credit risk) may be derived from observable market prices for traded instruments of different credit quality or from observable interest rates charged by lenders for loans of various credit ratings.

Discussion Draft GN560: Section 3.4 Discount Rate

3.4.1 The gross rate used to discount expected future cash flows must be based on current, observable, market-based, objective rates that directly relate to the nature, structure and term of the cash flows being valued. It must be independent of the expected investment earnings applicable to the assets backing the benefit being valued, except in respect of benefits that are themselves dependent on such investment earnings.

3.4.2 In most circumstances this will be achieved by discounting at a rate equal to the expected investment earnings applicable to the replicating portfolio of assets which best matches the cash flows being valued, having due regard to the nature of the cash flows and the associated risks.

For non-investment linked benefits, cash-flows and liabilities, this will typically involve discount rates consistent with market yields on high-grade fixed interest assets less default allowance.

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"In relation to discount rates the rates must be independent of the actual assets, except where the benefits under the contract are themselves dependent on the performance of the assets.

On that basis the requirements in section 3.4 are consistent with the requirements of AASB 139, paragraphs AG79 and AG 82. In addition, they are consistent with the discount rate requirements to apply to insurance contracts under AASB 1038, paragraphs 8.7 and 8.8.

A key point to note is the absence of any explicit reference to the term "risk-free". While that is essentially the concept that is conveyed, it avoids any misconceptions that the discount rate must be the prevailing yield on sovereign debt, which is often the way that the term "risk-free" is interpreted for many common asset valuation methodologies. For example, the yield on high quality corporate debt, appropriately adjusted for credit risk, may well be suitable in circumstances where the liability under a fixed rate product is not at call.

This then avoids the potential for losses to be recognised at inception on products where liquidity is not an issue and where the liquidity margin is passed to the investor through the pricing of the product."

APPENDIX 2: Overseas developments

A high-level overview of some of the recent overseas developments that may be of interest to life insurance actuaries includes:

(a) The Solvency II capital calculations will require the use of risk-free rates in setting technical provisions and determining risk margins. A recent consultation paper by the Committee of European Insurance and Occupational Pensions Supervisors[5] ("CEIOPS") (the organisation charged by the European Commission with setting implementing measures for Solvency II) suggests that unadjusted government bond yields should be considered the benchmark, unless government bond markets do not meet certain requirements to be considered "risk-free". The majority of CEIOPS believe the relevant risk-free interest rate should not include a liquidity premium.

(b) The International Actuarial Association has published a paper which includes comments on risk-free discount rates.[6] It notes that, "to the extent that it is appropriate for discount rates to be based on the liquidity characteristics of the expected cash flows inherent in the liability (or asset), the discount rates instead should correspond to interest rates that are somewhat greater, that is, based on securities that are less liquid than the risk free securities." Additional discussion on the relative amount of liquidity in various different types of general and life insurance liabilities is provided.

(c) The Market-Consistent Embedded Value©[7] principles set out by the CFO Forum originally included the use of swap rates as the risk-free discount rate for valuing liabilities. On 20 October 2009, the CFO Forum issued an update to the MCEV principles. The revised principles permit the use of a liquidity premium in the discount rate for liabilities which are not liquid, with liquid liabilities continuing to use swap rates. The CFO Forum defines a liquid liability as "[a] liability is liquid if the liability cash flows are not reasonably predictable". Towers Perrin has released a short note discussing the updated principles.[8]

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5 CEIOPS-CP-40-09, "Advice for Level 2 Implementing Measures on Solvency II: Technical Provisions - Article 85 b - Risk-free interest rate term structure", CEIOPS, July 2009. To access reference, click here

6 "Measurement of Liabilities for Insurance Contracts: Current Estimates and Risk Margins", the ad hoc Risk Margin Working Group of IAA, April 2009. To access reference, click here

7 Copyright © Stichting CFO Forum Foundation 2008

8 "Revised MCEV Principles Include Liquidity Premium", Towers Perrin, October 2009. To access reference, click here

APPENDIX 3: CGS Scarcity Discount References

(a) "CGS as a proxy for the risk free rate. A report for the JIA", Competition Economists Group, January 2009. To access reference, click here

(b) "Treasury Bond yield as a proxy for the risk free rate", Australian Government Treasury, August 2007. To access reference, click here

(c) "Bias in Indexed CGS Yields as a Proxy for the CAPM Risk Free Rate", NERA, March 2007. To access reference, click here

(d) "Absolute Bias in (Nominal) Commonwealth Government Securities", NERA, June 2007. To access reference, click here

(e) "Weighted Average Cost of Capital", NSW Treasury, January 2009. To access reference, click here

(f) "Comments on the CEG Report: Establishing a proxy for the risk free rate", John Handley, 12 November 2008. To access reference, click here