

VALUATION STANDARD REVIEW TASK FORCE

Discussion Note: Risk Free Discount Rates under AASB 1038

1 DISCUSSION NOTE STATUS

- 1.1 This note was prepared by the Valuation Standard Review Task Force (TF) of the Institute of Actuaries of Australia ("IAAust") in February 2005. This discussion note does not represent a professional standard or a guidance note of the IAAust and it has been prepared for the purposes of generating discussion on aspects of Risk Free Discount Rates under AASB 1038 that may lead to divergent practices within the IAAust's membership. This note does not constitute accounting advice.
- 1.2 Feedback from IAAust Members is encouraged and should be forwarded to the Task Force (care of the IAAust) or any member of the Task Force.
- 1.3 Please note that the views expressed in this note are those of the individual members of the Task Force. They do not necessarily represent the views of their respective employers or the IAAust as a body.

2 BACKGROUND

- 2.1 In September 2004, the Institute of Actuaries established a task force (TF) to consider the impact of changes to AASB 1038 on existing actuarial standards and guidance.
- 2.2 The revisions to AASB 1038 have raised a number of issues that require early public discussion. The TF will release a series of discussion notes to facilitate this discussion, accelerate the feedback process and provide market participants with an early indication of the direction of the TF's thinking.
- 2.3 This note concentrates on the choice of discount rate under the revised AASB 1038. 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.
- 2.4 The TF's conclusions (and influencing arguments) are presented first with relevant legislation being referenced afterwards.

3 SUMMARY OF CONCLUSIONS

- 3.1 The selection of the 'risk-free' discount rate is at the discretion of the Member but should 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 It is appropriate that the chosen rate is adjusted for its underlying default risk and any risk premium associated with this default risk.
- 3.4 No allowance should be made for 'own credit risk'.
- 3.5 Although government bonds may be a suitable rate, the inter-bank swap curve is an alternate starting point.
- 3.6 It may be appropriate to add a liquidity margin to the default-risk adjusted rate.
- 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 A liquidity margin may be determined by considering the margin between the inter-bank swap curve and average return of corporate bonds of similar credit rating (both default risk and associated risk premium adjusted).
- 3.9 Despite the possibility that the resulting discount rate may be greater than the default adjusted rate available on the actual assets backing the liabilities, the resulting discount rate should be used when assessing liability adequacy.
- 3.10 If investment expenses are allowed for through a deduction from the discount rate then the deduction should reflect the expected investment expenses of the actual backing assets.
- 3.11 Guaranteed benefits of participating insurance contracts should be discounted at a 'risk-free' rate when considering the adequacy of the VSA.

- 3.12 The decision on whether to adopt a single discount rate or a term dependent discount rate should have regard for the materiality of outcomes.

4 DISCUSSION

- 4.1 The TF discussed how to arrive at a 'risk-free' discount rate in a practical manner giving due consideration to the requirements of the accounting standards.
- 4.2 The following were strong considerations for the TF: -
- The discount rate used to value cash flows should be independent of the rate that is obtainable on any particular assets chosen to meet those liabilities.
 - 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.
 - The choice of investment strategy should not affect the value of liabilities (even where liability adequacy is an issue)
 - 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).
 - The wording of paragraphs 8.7, 8.8 and 8.8.2 of AASB 1038.
- 4.3 The TF concluded that the concept of 'risk-free' discount rates extends beyond the government bond rate 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.
- 4.4 This is further enforced by the letter from the Chairman of the AASB the President of the IAAust which makes it clear that the AASB put in section 8.8.2 to ensure that the phrase "risk-free rates" was not narrowly interpreted to be government bond rates.
- 4.5 In modern financial economics the fair value of a liability is 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 fair value risk discount rate for the liability would be that implied from the discount achievable on the asset (or portfolio of assets).

- 4.6 This discount rate would normally be a term dependent discount rate which avoids the reinvestment risk associated with more traditional gross redemption yields.
- 4.7 The requirement of paragraph 8.7 of AASB 1038 for the discount rate to be 'risk-free' means that the asset cash flows should be adjusted for risk of default and any associated risk premium before arriving at the implied discount rate.
- 4.8 Since paragraph 8.7 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.
- 4.9 The TF also discussed whether the rate that is used as a starting point has to be a government bond rate. It was noted that paragraph 8.8.2 was not definitive. Additionally, under financial economic theory a number of assets (or portfolios of assets) with different fair values may have cash flows that match the liabilities.
- 4.10 The TF decided that alternate rates that satisfied the requirements of paragraph 8.7 were acceptable. Where a number of alternate rates satisfy the requirements of paragraph 8.7, then the choice of discount rate is at the discretion of the Member.
- 4.11 In particular it was noted that the inter-bank swap curve met the requirements of paragraph 8.7 by being observable, objective and varying with term. Adjusting this curve for appropriate risk of default (associated with the swap curve) would also mean that the resultant curve could be considered 'risk-free'. The Member should also consider whether there is any risk premium associated with this default risk.
- 4.12 The inter-bank swap curve may be more appropriate compared with government bond rates as a starting point as it is less impacted by non-market related supply and demand considerations.
- 4.13 For liabilities whose cash flows are CPI linked, assets whose cash flows are also linked to CPI would give appropriate discount rates. However, it should be noted that CPI linked swap curves do not exist and that the Member may need to use the inter-bank swap curve and adjust for expected inflation.

- 4.14 In adjusting for risk of default, the Member may find it more convenient to make an appropriate deduction from a discount rate derived from unadjusted asset cash flows rather than adjusting the asset cash flows prior to deriving the discount rate.
- 4.15 To assess the risk of default the Member may consider the work of rating agencies in quantifying default probabilities and severity of losses for stocks of similar credit rating. [Note that the rating agencies' work only considers default risk and does not contain any allowance for the market premium associated with default risk.]
- 4.16 It is likely, however, that estimating risk of default from the work of rating agencies and applying this to the inter-bank swap curve will overestimate the risk of default since it includes an element in respect of loss of capital that does not apply to the inter-bank swap curve. One approximate method to allow for this may be through adjusting the severity of loss by considering the ratio of interest payments at risk to total capital at risk (within the work of rating agencies).
- 4.17 The resulting risk of default is expected to be small for the inter-bank swap curve and so it is likely that the risk premium associated with the risk of default is also small.
- 4.18 There was substantial discussion as for what other factors the starting rate should be adjusted. The TF decided that it may be appropriate to allow for a liquidity margin since this would be realised if the asset was held to term.
- 4.19 The TF concluded that expected future cash flows that have been derived using best-estimate assumptions for mortality, lapses, etc. might be considered 'certain' (and therefore illiquid) cash flows due to the low expected variability of the cash flows around the best estimate. The Member is encouraged to consider the expected cash flow volatility when considering the liquidity margin.
- 4.20 Additionally, certain product features may cause the Member to view the cash flows as illiquid: -
- Lifetime annuities without guaranteed surrender terms are not an 'at call' liability since the surrender terms are at the discretion of the company and not guaranteed. Consequently, the cash flows can be considered to be illiquid.

- 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.
- 4.21 Although the nature of the illiquidity is different, financial markets may be used to derive an indication of a suitable margin to apply for the illiquidity of the cash flows being valued.
- 4.22 The Member may consider the margin between the inter-bank swap curve and average return of corporate bonds of similar credit rating to estimate a liquidity margin. The different risk of defaults (since there is just a loss of interest risk on the swap curve) between these two curves was discussed. This may need to be allowed for if the Member considers it material.
- 4.23 The Member should take care to ensure that there is no margin within the resulting discount rate that reflects default risk or a market premium associated with default risk. In contrast to the liquidity margin, the default risk (and its premium) is not certain to be realised if the matching portfolio of assets were held to term.
- 4.24 The TF discussed whether the discount rate should contain any margin for non-investment uncertainties in the expected cash flows. It was concluded that there should be no such margin. It was also noted that this would be counter to paragraph 8.8.1 of AASB 1038.
- 4.25 The TF discussed whether the expected rate obtainable on the actual assets backing the insurance liabilities should have any impact on the liability adequacy test mentioned in paragraphs 8.6.1-8.6.4 of AASB 1038.
- 4.26 In particular, the rather extreme example of a company investing in cash to meeting long-term annuity liabilities was considered. Using a risk-free discount rate derived in accordance with paragraph 8.7 of AASB 1038 could lead to the liabilities being discounted at a higher rate than the assets were expected yield. Where liability adequacy is not an issue there would be no difference between the liabilities and the only difference in a reporting period would be between planned and experience profits. However, if liability adequacy were an issue, then the use

of a risk-free discount rate would lead to inadequate liabilities being established on a best-estimate (not prudential) basis to meet future and lead to expected losses in future years.

- 4.27 However, the TF felt that the revisions to AASB 1038 with respect to discount rates are aimed at placing 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 paragraph 8.1 (a), 8.6.1 and 8.7 means that Member must use the risk-free discount rate in accordance with paragraph 8.7 when assessing liability adequacy. [The TF realise that this conclusion will generate substantial interest and specifically request feed back from Members on this issue.]
- 4.28 A consequence of this approach will be that, whereas under the previous AASB 1038 any expected losses arising from choice of investment strategy relative to the risk-free rate would have been capitalised, under the revised AASB 1038 these losses will emerge as they occur.
- 4.29 The TF considered 'guaranteed benefits' (as defined in AASB 1038) of participating insurance contracts and concluded that these should also be discounted at a 'risk-free' rate when considering the adequacy of the VSA. A separate discussion note will be produced on the consequences of using a 'risk-free' rate on the 'guaranteed benefits' of participating insurance contracts.
- 4.30 Although not related to the choice of discount rates, the TF discussed the common practice of allowing for investment expenses through a deduction from the discount rate.
- 4.31 The TF concluded that the expected future investment expenses of the actual backing assets should be used rather than those associated with the 'risk free' discount rate. In arriving at this decision the TF concluded that: -
- Assumptions as to investment expenses normally cover the services provided by an investment manager rather than actual costs of investing
 - AASB 1038 only requires the discount rates to be 'risk free' with other assumptions being best-estimate

- Any inconsistency between the investment expense assumption and the discount rate will only affect the split between planned and experience profits (where liability adequacy is not an issue)
 - 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
- 4.32 The TF discussed whether a single discount rate or a term dependent discount rate should be used. It was recognised that this was not an issue caused by changes to AASB 1038.
- 4.33 The TF felt that any decision should remain one for individual Member judgment having regard for 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.
- 4.34 For liabilities denominated in overseas currencies then the above principles should be applied using equivalent overseas rates.
- 4.35 Although, term annuities are classified as investment contracts and therefore not accounted for under AASB 1038, the TF recognised that a uniformity of approach between term and lifetime annuities was desirable.
- 4.36 The TF did not believe that accounting standards should cause the industry or individual companies to in anyway change product offerings (either through higher premiums or a withdrawal of a product) unless the standards caused a fundamental reassessment of the real cost of meeting a liability.

APPENDIX: SELECTED REFERENCES

AASB1038: 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.

AASB1038: 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 risk 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 of 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 purpose of this Standard, or they may be an appropriate starting point in determining such discount rates.

Extract of letter from David Boymal (Chairman, AASB) to Graham Rogers

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.

IFRS 4: Paragraphs 27 – 29

- 27 An 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)

AG 79 In applying discounted cash flow analysis, an entity uses one or more a discount rates equal to the prevailing rate 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.

AG 82 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 'riskfree' 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 a LIBOR or 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.

Discussion Draft GN560: Explanatory Information and Implementation Guidance
(Page 11)

“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 circumstance 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.”

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