Project **Insurance contracts**

Topic **Top down approaches to discount rates**

What is this paper about?

1. The purpose of this paper is to clarify how a top-down approach to determine the discount rate for insurance contracts should be applied based on the boards' tentative decision in the 17 February 2011 meeting. It responds to the detailed questions that the staff have received on the application of a top-down approach, from board members, insurance working group members and other interested parties. This paper summarises the staff's understanding of how the boards' tentative decisions would be implemented in applying a top-down approach.

2. The paper focuses on non-participating insurance contracts. However, at its 14 March 2011 meeting, the boards tentatively decided:

   (a) to clarify that the objective of the discount rate used to measure participating insurance contracts should be consistent with the discount rate used to measure non-participating insurance contracts.

   (b) to provide guidance that, to the extent that the amount, timing or uncertainty of the cash flows arising from an insurance contract depend wholly or partly on the performance of specific assets, the insurer should adjust those cash flows using a discount rate that reflects that dependence.

Therefore, some of the considerations in this paper will also be relevant to participating contracts.

Staff recommendations

3. The staff recommends that the boards includes application guidance in the final standard that:

   (a) when an insurer determines the discount rate that **reflects the characteristics of the insurance contract liability** using a 'top-down' approach:

      (i) An insurer determines an appropriate yield curve based on **current market information**. The insurer may base its determination of the yield curve for the insurance contract liability on a yield curve reflecting current market returns for the actual portfolio of assets the insurer holds or for a reference portfolio of assets with characteristics similar to those of the insurance contract liability.

      (ii) If there are **no observable market prices** for some points on that yield curve, the entity uses an estimate consistent with the boards' guidance on fair value measurement, in particular for Level 3 fair value measurement.

   (b) the cash flows of the instruments should be adjusted so that they reflect the characteristics of the cash flows of the insurance contract liability. In adjusting the cash flows, the insurer makes **both** the following adjustments:

      (i) **Type I,** which adjust for differences between the timing of the cash flows of the assets in a portfolio (actual or reference) and the timing of the liability cash flows, ie to ensure the assets are duration matched.

      (ii) **Type II,** which adjust for risks inherent in the assets that are **not** inherent in the liability.

Type I and Type II adjustments may be interrelated. An insurer may apply these adjustments in any order.

(c) an insurer using a top-down approach is likely to have concluded that it is too difficult to apply a bottom-up approach. Therefore as a practical expedient an insurer using a 'top-down' approach need not make adjustments for remaining differences (**Type III** adjustments) between the liquidity inherent in the liability cash flows and the liquidity inherent in the asset cash flows.

Background: the boards' tentative decisions in February 2011

The objective of the discount rate

4. In February 2011, the boards tentatively decided that they would:

   (a) confirm the objective of the discount rate is to adjust the future cash flows for the time value of money and reflect the characteristics of the insurance contract liability.

   (b) not prescribe any particular method for determining the discount rate.

   (c) provide guidance that the discount rate should:

      (i) be consistent with observable current market prices for instruments with cash flows whose characteristics reflect those of the insurance contract liability, including timing, currency and liquidity, but excluding the effect of the insurer's non-performance risk;

      (ii) exclude any factors that influence the observed rates but that are not relevant to the insurance contract liability (eg risks not present in the liability but present in the instrument for which the market prices are observed, such as any investment risk taken by the insurer that cannot be passed to the policyholder); and

(iii) reflect only the effect of risks and uncertainties that are not reflected elsewhere in the measurement of the insurance contract liability.

5. The objective of the approach above is to develop a yield curve that reflects the characteristics of the liability rather than a single blended asset yield adjusted for defaults. In theory, the yield curve should reflect the characteristics of the cash flows. Building block one (expected cash flows) should result in cash flows that have the same characteristics (for the same term). Any risk that these cash flows will deviate from the expected value is captured in the risk adjustment. In the staff's view, one difference between yield curves for two insurers might be the relative size of the cash flow, ie a larger illiquid cash flow might provide a higher illiquidity premium because the insurer might be able to invest in asset classes not available to others but yielding a return that provides a higher expected return than for other instruments subject to the same degree of risk. Other differences may stem from imperfections in the particular top-down approach used.

6. The papers for the insurance working group meeting on 24 March 2011 included a description of how we might implement these tentative decisions. We have reproduced an extract from that paper in Appendix B. Appendix C sets out, for completeness, the existing guidance on the discount rate proposed in the Exposure Draft *Insurance Contracts* (ED).

Top-down and bottom-up approaches

7. The observable market price for any instrument includes the interrelated effects of credit and illiquidity. In meeting the objective of the discount rate, an insurer would divide that interrelated effect to identify the part that relates to credit (which is not relevant to the measurement of the insurance contract liability) and the part that relates to illiquidity (which is relevant to the insurance contract liability). Based on the tentative decision in February, both a top-down approach and a bottom-up approach would achieve the objective of the discount rate:

(a) In a bottom-up approach, the insurer captures the characteristics of the cash flows (the net liability) by starting from a risk-free discount rate and adding to that rate an adjustment to reflect the extent of illiquidity present in the insurance contract liability. Besides identifying the risk free rate, the main task in this approach is determining the illiquidity premium. There are different techniques available to determine the illiquidity premium and practice is still developing.

(b) In a top-down approach, the insurer reflects the characteristics of the cash flows (the net liability) by starting with the expected current market return on assets and deducting from that expected current market return the premium that market participants require for bearing the risks, including credit risk, that are associated with those asset returns but are not present in the liability. In the case of untraded instruments (which may reflect the illiquid character of the cash flows in the building block approach better than instruments with observable market prices), the insurer uses estimates to determine the fair value of these instruments and the components of the yield that ought to be excluded, because they are not relevant for the liability. Having estimated and excluded these asset risks, the top-down approach assumes that any other spread relates to the illiquidity premium.

8. This paper discusses top-down approaches only. However, some of the considerations in this paper may also apply to some techniques used in applying a bottom-up approach.

9. In February 2011, the boards confirmed that both approaches can achieve the objective of the discount rate and that the insurer can decide which approach is best in its particular circumstances, ie either bottom up or top down. However, the boards recognised that both approaches are imperfect, relying on difficult, subjective estimates. As a result, the boards acknowledged that these approaches in practice would be likely to result in different rates when applied to the same liability. Furthermore, the boards noted that it would be difficult to reconcile the

top-down and bottom-up approaches and fully explain any differences. Consequently, the boards indicated that there should be disclosures about the methodology and the discount rates to provide transparency. In particular, the boards indicated that they favour including a requirement to disclose the yield curve used for each major relevant currency. In the staff's view, this discussion indicated that the boards did not intend insurers to apply both the top-down and bottom-up approaches in an attempt to reconcile the results.

Staff analysis

Adjustments needed

10. A top-down approach is not an asset-based approach as many commonly understand the term. In an asset-based approach, the insurer uses actual assets to with some judgemental adjustments determine directly the discount rate without the objective to determine a discount rate that reflects the characteristics of the liability. In a top-down approach, the insurer selects a starting point based on assets, and adjusts that starting point **to arrive at a discount rate that reflects only the characteristics of the liability**. The necessary adjustments depend on the starting point selected: the closer the characteristics of the starting point to the characteristics of the liability, the fewer adjustments are needed to achieve the objective. However, the starting point is not relevant as the **focus of any approach** taken is the **objective of the discount rate**. For example, if the starting point is a judgmental projection of an insurer's income from the assets (investment income) or the book returns, those returns need to be replaced by current market consistent yields derived from the fair value of the instruments.

11. In the staff's view, meeting the objective of the discount rate using a top-down approach implies the following:

    (a) Any starting point may be used, for example the actual portfolio of assets the insurer holds or a reference portfolio of assets it derives. However,

the insurer determines an appropriate yield curve based on **current market information**. This means that if the approach starts with the yield on assets, this yield needs to be derived from the current fair value of the instrument. As a result, if the starting point is a portfolio of assets actually held by the insurer, the yield needs to be derived from the current fair value of those assets, even if the insurer does not measure those assets at fair value.

(b) The cash flows of the actual or reference assets should be adjusted so that they reflect the **characteristics of the cash flows** of the insurance contract liability. This is more straightforward when the assets already have cash flows that are similar to those of the insurance contract liability. All **identifiable** differences between the cash flows of the insurance contract liability and the actual or reference portfolio must be removed.

(c) If there are **no observable market prices** for some points on the yield curve, the entity uses an estimate consistent with the boards' guidance on fair value measurement, in particular for Level 3 fair value measurement. If there is no observable market data, the entity uses its **own market-consistent estimates**.

12. Thus, in order for a top down approach to be consistent with the objectives adopted by the boards, the staff believes that three types of adjustment may be needed, depending on the particular starting point used (the adjustment types do not imply a particular order):

(a) **Adjustment type I:** To adjust for differences in the timing of the cash flows of the assets in a portfolio (actual or reference) and the timing of the liability cash flows. The objective is to develop one yield curve that is applied to the insurance contracts cash flows. We discuss these adjustments in paragraph 13 below.

(b) **Adjustment type II:** To adjust for risks inherent in the assets that are not inherent in the liability (assuming matched cash flows). These risks can be summarised as investment risk. Investment risk can be credit risk, market risk, and other price risk as defined in IFRS 7 *Financial Instruments Disclosures* or in the implementation guidance in the Fair Value Measurements and Disclosures section 820-10-55 of the FASB Accounting Standards Codification®. They may also include any additional returns that market participants might seek. We discuss investment risk in paragraphs 15-27.

(c) **Adjustment type III:** These adjust for any remaining differences between the liquidity inherent in the liability cash flows and the liquidity inherent in the asset cash flows. Although Adjustment type III would be needed conceptually, they would leave the insurer with the same challenges in determining the illiquidity premium to be used in a bottom-up approach. The staff has discussed with practitioners and actuaries how a liquidity premium for liabilities is determined in practice. Some methods to determine the liquidity adjustment for a bottom up approach use similar techniques as the top-down approach It is the staff's understanding that the boards have acknowledged that an insurer in applying a 'top-down' approach need not adjust for any remaining differences between the liquidity inherent in the liability cash flows and the liquidity inherent in the asset cash flows is not necessary, as a practical expedient, for the reasons discussed in paragraph 16(c).

Reinvestment risk

13. For the purpose of this paper, 'reinvestment risk' is the risk that an insurer will in the future achieve a return lower than its current return when it is required to reinvest for assets that have cash flows with shorter durations to match the cash flows of liabilities with a longer duration. Some argue that risks related to reinvestment would be needed to eliminate differences in cash flows (ie that

reinvestment risk would be a **type I adjustment**) because reinvestment risk relates to the mismatch between the cash flows of the insurance contract liability and the actual asset portfolio used. However, in the staff's view, the adjustment for reinvestment risk is relevant for budgeting, to measure the current and future investment income and for asset-liability management, but not to determine the appropriate yield curve that represents the characteristics of the liability. The current yield curve already considers the timing of the cash outflows. Thus, it is not necessary to adjust the asset rate for the reinvestment risk **if cash flows and yields are adjusted** in the way described under adjustment **type I**.

14. Said in other words: Instead of including an element of investment risk, one way to look at the 'reinvestment risk notion' is to see it as a proxy for a type I adjustment. It can be a practical way of adjusting the duration of the asset portfolio for the cash flow duration mismatch (for example for yields in the longer term to expand the curve beyond the observable horizon). The entity applies its judgment in assessing if the adjustment can achieve the overall objective.

Application to specified investment classes

15. In the paragraphs below, we describe how the analysis in paragraphs 11-12 would apply to the following asset classes:

    (a) Debt instruments

    (b) Equity investments

    (c) Real estate investments

    (d) Derivatives

    Some observations equally apply to all investment types and are not reiterated for each type, eg the remarks on the investment management expenses in paragraph 19.

Debt Instruments

16. When the market price for a debt instrument (eg bonds) is observable, the market yield can be disaggregated into the following components:

    (a) *Expected credit losses **(type II)**:* The expected return on the debt instruments needs to reflect the expected credit losses on the instruments. (As in other contexts, we use the term 'expected' here to refer to the expected value, ie the mean.) Thus:

        (i) If the insurer uses the contractual cash flows as the starting point for determining the expected returns (yield), the insurer needs to deduct the expected credit losses.

        (ii) If the starting point is expected (ie mean) cash flows, no further deduction from the yield is needed for expected credit losses.

        Historical default data will be a key component in determining expected credit losses, but this needs to be adjusted to reflect current conditions if applicable.

    (b) *A market risk premium for credit **(type II)**:* Deducting an allowance for expected credit losses from the contractual yield produces an expected bond return. This expected return still contains a premium for bearing asset risk (the amount of defaults is uncertain and hence the expected return is risky). Consequently there needs to be a further adjustment to remove the premium for this credit risk that is reflected in the pricing of the bonds. In the absence of an observable market risk premium for credit alone (ie separate from illiquidity), the entity uses an appropriate technique to determine the market risk premium, consistent with the selection of an unobservable input in a level 3 fair value measurement.

    (c) *Premium for illiquidity **(type III)**:* This premium is part of the bond return. From the perspective of the liabilities' cash flows, it is relevant that the net cash flows are highly illiquid and that the insurer can hold investments through a crisis, and may even be able to invest in assets that

have virtually no liquidity (eg debt provided as a private equity investor). The premium for illiquidity was significant in the financial crisis, when the lack of liquidity increased the observable market yields. Conceptually, the insurer would need to make an adjustment to reflect differences in the degree of illiquidity present in the asset, compared to the degree of illiquidity present in the liability being measured. However, if the insurer is using a top-down approach, it is likely to have concluded that it is too difficult to apply a bottom-up approach. Therefore, the staff believes that it is unlikely that an insurer would be able, in practice, to adjust for differences in the degree of illiquidity.

(d) *A risk free rate of return* (comprising of inflation expectation and a real risk free return excluding inflation).

17. The sum of the items in paragraph 16(a), 16(b) and 16(c) is usually referred to as spread, ie the difference between the total bond yield and the risk free rate of return. In a top-down approach, the staff regards other unidentified components, market sentiment and market inefficiencies as a part of 16(c).

18. Both the expected credit losses and the market risk premium for credit will fluctuate. The staff recognises that the method used to determine credit risk may not require the insurer to determine 16(a) and 16(b) separately. In particular, higher market volatility leads to a higher overall asset spread. In practice the staff expects that both amounts are more stable than the total bond yield. As a result, in a top-down approach, fluctuations in the overall spread, other than those arising from expected credit losses and the market risk premium, would be attributed to the illiquidity component of the asset yield and hence would also be mirrored in the changes in the liability discount rate. This could be a significant proportion of the changes in the overall spread on bonds. In the staff's view, this removes a portion of the volatility from the changes in bond yields, compared to a 'pure' risk-free rate adjusted for liquidity, as proposed in the ED.

19. Deducting other components from **an observable market yield** for a debt instrument (eg investment management expenses of the entity holding the debt instrument) may be relevant to determine the 'earned rate' of a portfolio of assets, but is irrelevant to determining the discount rate that reflects the characteristics of the cash flows, because they merely reflect, for instance, expenses of the investment department are irrelevant for discounting the liability. Market observable rates do not include a component to compensate for the investment management department of an insurer.

20. If there is **no observable market yield** for a debt instrument, the entity uses fair value measurement guidance to determine the fair value. The remaining steps are similar to those laid out in paragraphs 16 and 17. However some debt instruments may provide cash flows that match the illiquidity of the cash flow very well (eg very large borrowings or private equity loans) but may be associated with significant expenses. Market participants would generally require compensation for those expenses in the form of a higher interest rate (or fees). In this case, that additional compensation needs to be excluded because it is an integral part of the net return from the investment and unrelated to the insurance contract liability **(type II).** These expenses are deducted to arrive at a market price and not to reflect investment department cost of the insurer.

Equity investments

21. Cash flows from equity investments have characteristics that are very different from the characteristics of the cash flows of the insurance contract liability in terms of timing and risk. (An exception is when returns to policyholders are contractually dependent on returns on equity instruments, as is the case for contracts with participating features. Agenda paper 3F/60F for the meeting in March 2011 discussed how to determine discount rates for such contracts). Consequently, the inclusion of these investments in the actual or reference portfolio will require significant additional considerations.

22. In the staff's view, the inclusion of equity investments in an actual or reference portfolio would be worthwhile only if the insurer could find a way to distinguish what part of the expected equity return is for bearing investment risk and what part is for illiquidity. This might perhaps be possible in theory, but the staff doubts whether such a distinction is likely to be feasible in practice. Thus, in practice, the insurer would find it simpler – and perhaps more accurate – to include debt instruments rather than equity instruments in the reference portfolio.

23. The staff notes that an insurer would not be precluded from choosing to start from an actual portfolio that included equity investments. In that case, the insurer would need to remove all equity investment risks **(type II**) from the portfolio rates. These investment risks would include not only the credit risks of the entity but also market risk and any other variability in amount and timing of the dividend cash flows and cash flows on ultimate disposal. An expected equity return can only be determined based on the fair value of the instrument and should exclude the expectation of the entity that is not included in the fair value (ie expectations of future appreciation).

24. One way of adjusting the return from equity investments to reflect the characteristics of the insurance contract liability would be to use a total rate of return swap with a subsequent adjustment for the counterparty credit risk. Another way would be to substitute the contribution of the equity investments with the risk free rate of return (as implied by the portfolio theory or capital asset pricing models, which indicate that any return above risk free implies investment risk taken).

25. For equity investments that do not have observable market prices, the entity would use the fair value of the equity investment and the cash flows included in determining the fair value. The entity assesses the potential variability in the cash flows and makes appropriate adjustments to the investments yield **(type II)**.

Real estate investments

26. The same principles as laid out above for equity investments also apply to real estate **(type II)**. However, the projection of cash flows may be easier to achieve than for equity investments. Usually, one additional risk in real estate is the risk of delay in finding a new tenant when contracts expire or lapse, which makes the projection more difficult. Other risks relate to the ultimate selling price if the investor does not retain the property for its entire economic life, obsolescence and unexpected deterioration in the physical fabric or service potential of the building. A projection of future appreciation should not be included in the return because it underlies the specific asset risks of the real estate, and not the insurance contract liability. It is also not compatible with paragraph 3(a)(i): **current market information.**

Derivatives

27. There is a wide variety of derivatives, some of which more closely resemble the characteristics of the insurance contracts cash flows than others. For each derivative included in a top-down approach, the entity needs to assess whether there are risks specific to the derivative that ought to be excluded. The swap rate adjusted for the counterparty credit risk **(type II)** for example can be a good proxy for the risk free yield curve.

Questions

a) Do board members agree with the staff's analysis?

b) Do board members think that the final standard should include application guidance that, when an insurer determines the discount rate that reflects the characteristics of the insurance contract liability using a 'top-down' approach:

i) An insurer determines an appropriate yield curve based on current market information. The insurer may base its determination of the yield curve for the insurance contract liability on a yield curve reflecting current market returns for the actual portfolio of assets the insurer holds or for a reference portfolio of assets with characteristics similar to those of the insurance contract liability.

ii) If there are **no observable market prices** for some points on the yield curve, the entity uses an estimate consistent with the boards' guidance on fair value measurement, in particular for Level 3 fair value measurement.

iii) the cash flows of the instruments should be adjusted so that they reflect the characteristics of the cash flows of the insurance contract liability. In adjusting the cash flows, the insurer makes **both** the following adjustments:

a. **Type I,** which adjust for differences between the timing of the cash flows of the assets in a portfolio (actual or reference) and the timing of the liability cash flows, ie to ensure the assets are duration matched.

b. **Type II,** which adjust for risks inherent in the assets that are **not** inherent in the liability.

iv) an insurer using a top-down approach is likely to have concluded that it is too difficult to apply a bottom-up approach. Therefore as a practical expedient an insurer need not make adjustments for remaining differences (Type III adjustments) between the liquidity inherent in the liability cash flows and the liquidity inherent in the asset cash flows.

Appendix A: Illustrative example

A1. This simple example illustrates the types of adjustments needed in a top-down approach. The example does not imply that this is the only possible approach to determine the appropriate discount rate, but rather illustrates the points to be considered.

A2. An insurer has net cash outflows of CU100 over each of the next 5 years. The insurer has invested in 5 zero coupon bonds (ABCDE) which mature as described:

	Year 1	*Year 2*	*Year 3*	*Year 4*	*Year 5*
Insurance contracts Cash outflow	100	100	100	100	100
Bond	A	B	C and D	E	
Nominal cash inflow	101	101.5	102 102	103	0
Expected cash inflow (after expected defaults)	100	100	100 100	100	0

A3. The insurer makes **type I** adjustments to transform the asset cash flows to match the same term as the liability cash flows. This could be done by substituting the actual bond D with the data of another bond F that matures in year 5 and has an expected inflow of 100. (However, there might not be an investment available for year 5; in this case, the insurer would expand the yield curve in an appropriate way, ie using an actuarial technique). The approach described above results in an appropriate portfolio:

	Year 1	*Year 2*	*Year 3*	*Year 4*	*Year 5*
Insurance contracts Cash outflow	100	100	100	100	100
Bond	A	B	C	E	F
Nominal cash inflow	101	101.5	102	103	104
Expected cash inflow (after expected defaults)	100	100	100	100	100
Market yield	5.00%	5.25%	5.50%	5.75%	6.00%

A4. In the second step, the insurer adjusts the market yield (which is based on the nominal bond value) for the fact that the market expects the cash inflows to be only 100, not 101 (ie expected defaults, **type II**). The market yield additionally

contains a premium for the risk that the expected cash inflows differ from the estimated cash inflows. This market premium should be removed from the market yield (type II).

A5. The resulting rate for each bond will now supply the yield curve to discount the liability based on a top-down approach:

	Year 1	*Year 2*	*Year 3*	*Year 4*	*Year 5*
Bond	A	B	C	E	F
Market yield	5.00%	5.25%	5.50%	5.75%	6.00%
Included premium for expected losses [1)]	1.04%	0.78%	0.69%	0.78%	0.83%
Market premium for credit risk [2)]	0.16%	0.22%	0.31%	0.32%	0.37%
Yield curve	3.80%	4.25%	4.50%	4.65%	4.80%
Risk free yield	3.75%	4.00%	4.10%	4.15%	4.20%

1) This premium is the difference between discounting the contractual cash flows based on the market yield and the discount rate used to discount the expected cash flows to the market price of the bond. For bond A, the market price is CU 96.20, the discount rate to discount the expected cash flows to that market price is 3.96%. The premium is the difference between 5.00% and 3.96%, 1.04%

2) Determined based on the methodology the insurer has adopted.

A6. The market conditions now change, for example through a 100 basis points shift in the market yield curve for the bonds, but the expectation of losses on the bond portfolio (based on a current updated estimate of the entity) does not change. The market risk premium for the credit risk, based on the methodology moves based on the market inputs as described below. The resulting spreads are:

	Year 1	*Year 2*	*Year 3*	*Year 4*	*Year 5*
Bond	A	B	C	E	F
Market yield	6.00%	6.25%	6.50%	6.75%	7.00%
Included premium for expected losses	1.05%	0.79%	0.70%	0.79%	0.84%
Market premium for credit risk	0.35%	0.36%	0.40%	0.51%	0.56%
Yield curve	4.60%	5.10%	5.40%	5.45%	5.60%
Risk free yield	4.25%	4.50%	4.60%	4.65%	4.70%

Appendix B: Extract from agenda paper 4B from the 24 March IWG meeting

Agenda paper 4B from the 24 March meeting of the Insurance Working Group (IWG) described how we might implement the boards' tentative decisions on the discount rate reproduced in paragraph 4. We set out the working draft we included in that paper below. We have not considered whether that wording needs to be updated in the light of the discussion at the IWG meeting and the matters discussed in this paper.

Standard

A working draft of the wording for the standard is as follows (changes from the ED are marked):

Time value of money

30 An insurer shall adjust the future cash flows for the time value of money, using discount rates that reflect the characteristics of the insurance contract liability. Such rates:

(a) ~~are~~ shall be consistent with observable current market prices for instruments with cash flows whose characteristics reflect those of the insurance contract liability, in terms of, for example, timing, currency and liquidity.

(b) exclude any factors that influence the observed rates but are not relevant to the insurance contract liability (eg risks not present in the liability but present in the instrument for which the market prices are observed).

31 This IFRS does not prescribe the methodology used to apply the principle in paragraph 30. However, as ~~As~~ a result of the principle in paragraph 30:~~,~~

(a) if the cash flows of an insurance contract do not depend on the performance of specific assets, the discount rate shall reflect the yield curve in the appropriate currency for instruments that expose the holder to no or negligible credit risk~~, with an adjustment for illiquidity (see paragraph 34)~~. ~~The illiquidity of the cash flows is relevant for the insurance contract liability.~~

(b) ~~32~~ to the extent that ~~If~~ the amount, timing or uncertainty of the cash flows arising from an insurance contract depend wholly or partly on the performance of specific assets, the measurement of the insurance contract shall reflect that dependence.~~ In some circumstances, the most appropriate way to reflect that linkage might be to use a replicating portfolio technique (see paragraphs B45–B47).~~

(c) the discount rate shall reflect the illiquidity characteristics of the cash flows.

33 Estimates of cash flows and discount rates shall be internally consistent to avoid double-counting or omissions. For example, nominal cash flows (ie those that include the effect of inflation) shall be discounted at rates that include the effect of inflation. Real cash flows (ie those that exclude the effect of inflation) shall be discounted at rates that exclude the effect of inflation. Furthermore, the discount rate should reflect only risks and uncertainties that are not reflected elsewhere in the measurement of the insurance contract liability.

~~34 Many insurance liabilities do not have the same liquidity characteristics as assets traded in financial markets. For example, some government bonds are traded in deep and liquid markets and the holder can typically sell them readily at any time without incurring significant costs. In contrast, policyholders cannot liquidate their investment in some insurance contract liabilities without incurring significant costs, and in some cases they have no contractual right to liquidate their holding at all. Thus, in estimating discount rates for an insurance contract, an insurer shall take account of any differences between the liquidity characteristics of the instruments underlying the rates observed in the market and the liquidity characteristics of the insurance contract.~~

Application guidance

We propose to add application guidance on determining the discount rate. This section would be inserted between paragraphs B66 and B67 of the ED.

Time value of money (paragraphs 30-34)

B66A Discount rates that reflect the characteristics of the insurance contract liability may not be directly observable in the market. An insurer adjusts observable market prices of similar instruments to reflect the characteristics of the insurance contract liability. This [Draft] IFRS does not prescribe the methodology for making those adjustments.

B66B In making the adjustments described in paragraph B66A, an insurer includes only those factors that are relevant for the liability:

(a) In some cases, an insurer adjusts expected asset returns that are consistent with the market prices of assets. In doing so, the insurer excludes from those rates factors that are not relevant to the insurance contract liability (a ‘top-down’ approach). Factors that are not relevant to the insurance contract

liability include risk premiums for expected and unexpected[1] defaults (unless those risks can be passed to the policyholder).

(b) In other case, an insurer adjusts a risk-free rate to include factors that are relevant to the insurance contract liability (a 'bottom-up' approach). Factors that are relevant to the insurance contract liability include differences between the liquidity characteristics of the instruments underlying the rates observed in the market and the liquidity characteristics of the insurance contract. Those differences arise when insurance liabilities do not have the same liquidity characteristics as assets traded in financial markets. For example, some government bonds are traded in deep and liquid markets and the holder can typically sell them readily at any time without incurring significant costs. In contrast, policyholders cannot liquidate their investment in some insurance contract liabilities without incurring significant costs, and in some cases they have no contractual right to liquidate their holding at all.

B66C When observable market variables are not available, an insurer uses estimation techniques to determine the appropriate discount rate. For example, the discount rate applied to cash flows that are expected beyond the period for which observable market data is available would be extrapolated from the current market yield curve. However, long-term expectations or averages (eg long-term average asset returns often used for pricing) shall not substitute existing observable current market variables.

B66D In principle the discount rates used for non-participating insurance contracts will result in the same yield curve for all cash-flows discounted.

B66E Paragraph 31B requires that, to the extent that the amount, timing or uncertainty of the cash flows arising from an insurance contract depend wholly or partly on the performance of specific assets, the measurement of the insurance contract shall reflect that dependence. Techniques for capturing any such dependence include:

(a) replicating portfolio techniques as described in paragraph B45.

(b) for those cash flows dependent on the performance of those assets, using discount rates consistent with current market prices for those assets, adjusted for any asymmetry between the insurer and policyholders in

[1] The staff observes that the notion of unexpected defaults is misleading. We intend that the final drafting will include a consistent wording and reference to the market premium for credit risk.

the sharing of those risks associated with those assets.

Appendix C: Extract from ED – paragraphs B42-B66

For completeness, this appendix sets out the existing guidance proposed in the ED.

Market variables and non-market variables

B42 The cash flows shall reflect the manner in which the insurer expects to fulfil the contract. A search for market inputs is not required, except for market variables such as interest rates. Therefore, this application guidance distinguishes between two types of variables:

(a) market variables—variables that can be observed in, or derived directly from, markets (eg prices of publicly traded securities and interest rates).

(b) non-market variables—all other variables (eg the frequency and severity of insurance claims and mortality).

Market variables

B43 Estimates of market variables shall be consistent with observable market prices at the end of the reporting period. An insurer shall not substitute its own estimates for observed market prices.

B44 Market prices blend a range of views about possible future outcomes and also reflect the risk preferences of market participants. Therefore, they are not a single point forecast of the future outcome. If the actual outcome differs from the previous market price, this does not mean that the market price was 'wrong'.

B45 An important application of market variables is the notion of a replicating asset, or a replicating portfolio of assets. A replicating asset is one whose cash flows exactly match those contractual cash flows in amount, timing and uncertainty. In some cases, a replicating asset may exist for some of the cash flows arising from an insurance contract. The fair value of that asset reflects the expected present value of the cash flows from the asset, and it also reflects the risk associated with those cash flows. If a replicating portfolio of assets exists for some or all of the cash flows arising from an insurance contract liability, the insurer can for those contractual cash flows simply include the fair value of those assets in the present value of the fulfilment cash flows, instead of explicitly estimating the expected present value of those particular cash flows and the associated risk adjustment. For cash flows not measured by a replicating portfolio of assets, an insurer estimates explicitly the expected present value of

those particular cash flows and the associated risk adjustment.

B46 This [draft] IFRS does not require an insurer to use a replicating portfolio technique. However, if a replicating asset exists and an insurer uses a different technique, the insurer shall satisfy itself that a replicating portfolio technique would be unlikely to lead to a materially different answer. One way to assess whether that is the case is to verify that applying the other technique to the cash flows generated by the replicating portfolio produces a measurement that is not materially different from the fair value of the replicating portfolio.

B47 As an example of a replicating portfolio technique, suppose an insurance contract contains a feature that generates cash flows equal to the cash flows from a put option on a basket of traded assets. The replicating portfolio for those cash flows would be a put option with the same features. The insurer would observe or estimate the fair value of that option and include that amount in the measurement of the entire insurance contract. However, the insurer could use a technique other than a replicating portfolio if that technique, in principle, is expected to achieve the same measurement of the contract as a whole. For example, other techniques may be more robust or easier to implement if there are significant interdependencies between the embedded option and other features of the contract. Judgement is required to determine which approach best meets the objective in practice in particular circumstances.

Non-market variables

B48 Estimates of non-market variables shall reflect all available evidence, both external and internal.

B49 Non-market external data (eg national mortality statistics) may have more or less relevance than internal data (eg internal mortality statistics), depending on the circumstances. For example, a life insurer shall not rely solely on national mortality statistics, but shall consider all other available internal and external sources of information in developing unbiased estimates of probabilities for mortality scenarios. In developing those probabilities, an insurer shall consider all evidence available, giving more weight to evidence that is more persuasive. For example:

(a) internal mortality statistics may be more persuasive than national mortality data if the internal statistics are derived from a large population, the demographic characteristics of the insured population differ significantly from those of the national population and the national statistics are out of date; in that case,

an insurer would place more weight on the internal data and less weight on the national statistics.

(b) conversely, if the internal statistics are derived from a small population with characteristics believed to be close to those of the national population, and the national statistics are current, an insurer would place more weight on the national statistics.

B50 Estimated probabilities for non-market variables shall not contradict observable market variables. For example, estimated probabilities for future inflation rate scenarios shall be as consistent as possible with probabilities implied by market interest rates. Paragraphs B51 and B52 discuss this further.

B51 In some cases, an insurer concludes that market variables vary independently of non-market variables. If so, the insurer shall prepare scenarios that reflect the range of outcomes for the non-market variables and each scenario shall use the same observed value of the market variable.

B52 In other cases, market variables and non-market variables may be correlated. For example, there may sometimes be evidence that lapse rates are correlated with interest rates. Similarly, there may sometimes be evidence that claim levels for house or car insurance are correlated with economic cycles and hence with interest rates and expense amounts. In such cases, an insurer shall develop scenarios for different outcomes of the variables. The insurer shall calibrate the probabilities for the scenarios, and risk adjustments relating to the market variables, so that they are consistent with observed market prices that depend on those market variables.