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Project **Insurance Contracts**

Topic **Measurement objective and risk adjustment**

Purpose

1. This paper discusses, as a follow-up to the December joint meeting,:
 - (a) whether the proposed building block approach would apply (i) to both future cash inflows and cash outflows arising from insurance contracts, or (ii) only to future cash outflows.
 - (b) whether the measurement objective should reflect the cost of fulfilling the obligation (as proposed by staff in December papers) or a different fulfilment notion and how the proposed risk adjustment relates to the measurement objective.
 - (c) further guidance on the risk adjustment, including the sources of information an insurer might use to estimate it.

Summary of the staff's recommendations

2. The staff recommends that
 - (a) a building block approach as described in paragraph 6 of this paper should be used for measuring the net combination of rights and obligations of insurance contracts rather than the obligation; the resulting contract position should be presented net.
 - (b) the measurement objective for insurance contracts should refer to a value rather than cost.

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- (c) the risk adjustment should be the amount the insurer requires for bearing the uncertainty that arises from having to fulfil the (remaining) net obligation from an insurance contract; this risk adjustment should be updated (remeasured) each reporting period.

Structure of the paper

- 3. The rest of this paper is divided into the following sections:
 - (a) Background (paragraphs 5 through 7)
 - (b) Insurance contract or obligation (paragraphs 8 through 19)
 - (c) Measurement objective (paragraphs 20 through 27)
 - (d) Risk adjustment (paragraphs 28 through 36)
- 4. This paper does not address the following issues, which will be considered separately:
 - (a) we will ask the boards to discuss at a future meeting whether the unearned premium approach provides an approximation of the insurance liability during the pre-claims period.
 - (b) whether the measurement should include future cash flows that depend on policyholder behaviour (eg cancellation and renewal options).
Agenda paper 6C (FASB Memorandum 35C) deals with this.

Background

- 5. At the December joint meeting, the staff provided the boards with a summary of reasons why this project has been pursuing an approach that measures insurance liabilities by reference to future cash flows, rather than an approach that applies the principles being developed in the project on revenue recognition.
- 6. The boards then discussed the measurement approach and tentatively decided that it should portray a current assessment of the insurer's obligation, using the following building blocks:
 - (a) the unbiased, probability-weighted average of future cash flows expected to arise as the insurer fulfils the obligation;

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- (b) the time value of money;
 - (c) a risk adjustment for the effects of uncertainty about the amount and timing of future cash flows; and
 - (d) an amount that eliminates any gain at inception of the contract.
7. The boards also tentatively decided that:
- (a) the risk adjustment should measure the insurer's view of the uncertainty associated with the future cash flows. The boards discussed various sources of information that an insurer might use to estimate this amount (eg the price the insurer would charge if it were taking on identical obligations with the same remaining risk exposure, or reinsurance prices) and asked the staff to investigate this question further.
 - (b) the measurement of an insurance liability should not be updated for changes in the risk of non-performance by the insurer.

Insurance contract or insurance obligation

8. An insurance contract results in:
- (a) the future cash inflows (premiums)
 - (b) the future cash outflows (claims, benefits, and expenses), and
 - (c) a margin, as the difference between cash inflows and cash outflows estimated at inception, subsequently adjusted for (i) release for performance under the contract and, in some cases, (ii) remeasurements. [Using the building blocks mentioned in paragraph 6, the margin would consist of a risk adjustment and a residual margin].
9. The contract position of an insurance contract can be summarised as:
- (a) the future cash inflows **less** the part of the risk adjustment that relates to the uncertainty in the cash inflows (contract rights) and

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- (b) the future cash outflows **plus** the part of the risk adjustment that relates to the uncertainty in the cash outflows **plus** the residual margin (contract obligations).
10. During the December meeting, some Board members seemed to presume that the measurement approach would be applied to the contract. But other Board members may have presumed that it would apply only to the obligation, or even a specific part of that obligation (the obligation for incurred claims), with a different measurement applied to the other elements of the contract position.
 11. The discussion paper *Preliminary Views on Insurance Contracts* (DP) took the position that the building blocks mentioned in that paper should be used to measure an insurance contract. That is, the building blocks would be applied to the net combination of (i) the future cash inflows, (ii) the future cash outflows and (iii) the margin. Those building blocks would cover the whole ‘lifecycle’ and therefore include:
 - (a) the obligation to investigate and (if valid) pay out claims that are expected to arise from the remaining coverage provided to the policyholder (the pre-claims obligation)
 - (b) the resulting obligation to investigate and (if valid) pay out claims that were made by the policyholder (the incurred claims obligation). [For insurance contracts, the incurred claims typically result in an obligation to the customer (policyholder) who received the coverage under the insurance contract. In other words, the incurred claims obligation is simply a transition of the already existing pre-claims obligation, rather than an obligation arising from a new contract with another counterparty].
 12. Thus, the insurer would measure the net contractual obligations (insurance liability) or net contractual rights (insurance asset) under an insurance contract using the building block approach proposed in the DP. Typically, that net contract position results in an insurance liability throughout the life of the contract.
 13. Staff believes that the DP position described in paragraph 11 is still valid:

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- (a) both cash inflows and cash outflows arise from the same contract and often a strong interrelationship exists between the cash inflows (rights) and cash outflows (obligations); neither becomes unconditional until a party performs. The policyholder will only continue premium payments if the insurer keeps providing coverage. Similarly, the insurer is obliged to perform (provide coverage to the policyholder) only as long as the policyholder continues to pay. Moreover, for some contracts (most obviously life insurance) if the insured event has occurred, continued coverage is not possible and the policyholder will not pay further premiums. An insurance contract is (therefore) typically designed and managed on that (ie net) basis. We have not identified any benefit for users from applying different measurement approaches for the two interrelated elements of a combined contract position.
- (b) one of the objectives of the measurement for insurance contracts is to report changes in expected future cash flows. That implies that if one were to apply a different measure to the contract rights and the contract obligations (or a subset of those obligations), both measurements would have to be current measures based on building blocks anyway. The complexities and costs of applying different current measures to contract rights and contract obligations are unlikely to justify the benefits (if any) from it.
14. The staff therefore recommends that the building block approach be used to measure the net combination of rights and obligations of insurance contracts rather than the (gross) obligation (or a subset of the obligation) from insurance contracts. The staff believes that the use of these building blocks reflect the characteristics and complexities underlying an insurance contract appropriately.

Question #1 for the boards

Do the boards agree that a building block approach as described in paragraph 6 of this paper should be used for measuring the net combination of rights and obligations of insurance contracts rather than the obligation?

Presentation of the contract position

15. In their DP on Revenue Recognition, the boards expressed the preliminary view that the combination of the rights and obligations (ie the net rights and obligations) gives rise to a **single** asset or liability, depending on the relationship between the entity's rights and obligations. That combination of rights and obligations would be presented on a net basis in the statement of financial position. In their deliberations of the comment letters to the DP on Revenue Recognition, the boards reaffirmed that preliminary view.
16. Staff believes this would also be appropriate for insurance contracts.
 - (a) As discussed in the previous section, insurance contracts also create a single asset or liability because of the strong interrelationship between rights and obligations and the fact that those rights and obligations are both between the same parties.
 - (b) The risk adjustment (building block (c) in paragraph 6) deals with the uncertainty for both cash inflows and cash outflows. If one were to present the contract position of an insurance contract gross, the part of the risk adjustment that relates to the cash inflows would have to be separated and presented separately with those cash inflows. However, splitting this risk adjustment into a part that relates to the cash inflows (rights) and a part that relates to the cash outflows (obligations) is arguably not useful to users, difficult and burdensome.
17. Staff therefore concludes that the contract position of an insurance contract should be presented net. When we discuss the topic of disclosures, we will address whether the insurer should disclose the gross amounts from the rights and obligations separately.
18. Staff notes one specific type of contract, a financial guarantee insurance contract, that does not create a single net asset or liability because the inflows and outflows do not depend on each other and they are not with the same counterparty. These guarantees are often pre-funded. Where guarantee

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premiums are paid by the borrower throughout the period of the loan this is, in effect, a financing choice. In contrast to other (insurance) contracts¹:

- (a) the *right* (to payment) is exercised against the issuer of the debt security, but the *obligation* is to the beneficiary of the guarantee, generally the holder of the debt security.
- (b) the guarantor's expected or potential contractual cash flows are, therefore, with different counterparties. The inflow is from the issuer of the debt security; the beneficiary is the holder of the debt security.
- (c) the issuer of the debt security cannot cancel the contract (unless it prepays the loan). Thus, the guarantor's right to receive the premium is unconditional. Indeed, we understand that in many cases, the issuer of the debt security obtains no refund (of premiums already paid) if the borrower prepays the debt security.

19. FAS 163 *Accounting for Financial Guarantee Insurance Contracts* deals with financial guarantee insurance contracts and requires the guarantor to account for these contracts as gross assets and gross liabilities; that is, the present value of the premiums receivable is shown separately from the obligation. Staff intends to discuss financial guarantee insurance contracts as part of the scope considerations for the insurance contracts standard and, if necessary, will look at the application of the proposed insurance model to those contracts in a follow-up meeting.

Question #2 for the boards

Do the boards agree with the staff recommendation in paragraph 17 that the contract position of an insurance contract should be presented net rather than gross?

¹ The discussion in this paper on financial guarantee insurance contracts is derived from an analysis prepared by the Revenue Recognition project team for their paper on presentation of contracts with customers (IASB agenda paper 9A, July 2009; FASB Memorandum 120A, August 19, 2009).

Measurement objective

20. In the December paper on measurement, staff proposed that:

A reporting entity should measure an insurance contract equal to its current estimate of the cost to fulfil the present obligation created by that contract.

21. The boards agreed that the measurement of an insurance contract should reflect the fulfilment of that contract. However, there was no clear agreement whether the objective should reflect cost or a different notion; some Board members commented that cost might not be the most appropriate (or relevant) way of capturing the building blocks that the boards selected tentatively for insurance contracts.

22. Issues with using a cost notion are:

- (a) Uncertainty is an important inherent characteristic of an insurance contact. To ensure that uncertainty is appropriately incorporated in the measurement each reporting period, the measurement should include an explicit risk adjustment. For that purpose, simply adding up the (present value of) expected payments would not be appropriate.
- (b) A risk adjustment will result in a profit upon subsequent release if cash flows come out as expected. Including something in the measurement that on average is expected to result in a profit would stretch the definition of cost under the IASB Framework and the FASB Concepts Statements.

23. Staff therefore believes that the measurement for insurance contracts should use a different notion. Alternatives to using a cost notion are:

- (a) Price: refers to an amount for an actual or hypothetical transaction between two parties. It seems less natural to apply a price in the context of a fulfilment notion except if that fulfilment notion is used for estimating a transfer or settlement price (price estimate). Some therefore might see a price as being too much akin to a transfer notion.

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- (b) Value: does not (necessarily) refer to a transfer or settlement notion, but could also be applied in the context of a prescribed measurement of future cash flows. But simply using 'value' is not sufficient; the measurement objective would have to explain what kind of value is intended.

24. If applied in the context of a value, the objective could be:

[an entity's current estimate of] the present value of resources required to fulfil the net obligation created by the insurance contract.

[As mentioned earlier in this paper, an insurance contract typically results in a net contract obligation throughout the life of the contract. However, in some cases an insurance contract might result in a net contract asset. Staff will address in a follow-up meeting whether the measurement of insurance contracts can result in a net asset (i) for an individual contract and (ii) at an aggregation level higher than individual contract.]

25. A reporting entity would estimate that value using present value techniques that consider the four building blocks (see paragraph 6). To further clarify this objective and the use of the building blocks, the boards could provide explanatory language which, for example, clarifies that:

- (a) the measurement is from the entity's perspective, ie resources reflect the entity's view of its own estimated cost to fulfil the contract.
- (b) all available information should be used.
- (c) financial market variables should be consistent with observable market information.

26. We refer to agenda paper 7A (FASB Memorandum 32A) of December 2009 for a more detailed overview of the draft explanatory language for the insurance measurement.

27. One of the measurement approaches previously discussed by the boards was based on the measurement developed in the project to amend IAS 37 *Provisions, Contingent Liabilities and Contingent Assets* (the updated IAS 37 approach). The IASB recently published its Exposure Draft *Measurement of Liabilities in*

IAS 37. For the purpose of the IASB, appendix A includes an overview of the language from that ED and compares that language with the proposed insurance measurement.

Question #3 for the boards

Do the boards agree that the measurement objective for insurance contracts should refer to a value rather than cost? If applied as a value, the objective could be:

[an entity's current estimate of] the present value of resources required to fulfil the net obligation created by the insurance contract.

Risk adjustment

28. In this paper, staff proposes that the objective for the overall measurement is the present value of resources required to fulfil the net obligation from an insurance contract.
29. A characteristic of insurance contracts is the inherent uncertainty of the cash flows. Presuming risk aversion, for both the insurer and investors in the insurer, an insurer would not simply measure a present value of resources at the unbiased estimate of the future cash flows. In addition, the obligation would have to include a risk adjustment that represents an amount for the effects of uncertainty in the amount and timing of future cash flows.
30. The purpose (objective) of a risk adjustment is therefore to convey useful information to users about the (remaining) uncertainty. This reflects the fact that a liability giving rise to future cash outflows with a fixed outcome of X is less onerous than a liability with an uncertain outcome that has an expected value of the same amount of X. In addition, as a more practical point, a risk adjustment would include in the measurement the fact that an insurer usually would not have all the information for determining an unbiased estimate of the expected value of the cash flows. Missing information is likely to lead to bias in one direction, usually an unfavourable direction – insurers do periodically suffer large surprises, but the large surprises usually result in losses, not gains.

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31. Because the measurement objective focuses on the insurer's perspective, the risk adjustment should reflect the insurer's view of the amount of risk and the effect of risk aversion; the insurer would not have to identify market participants' views. The staff therefore recommends that the risk adjustment is the amount the insurer requires for bearing the uncertainty about the resources it will require to fulfil the (remaining) net obligation from insurance contracts. In estimating this amount, the insurer can use inputs like:
- (a) Reinsurance prices.
 - (b) Entry prices for similar contracts, adjusted to the remaining exposure of the contract being measured.
32. The information from those sources may not in all cases be useful as direct inputs to the measurement because it would not be available at reasonable cost or it includes factors that should not be captured in a risk adjustment for the remaining cash flows. For example, the current price for new contracts may be skewed by the insurer's desire to balance its portfolio; the price for those new contracts may not be representative for equivalent contracts in the portfolio as a whole. Nevertheless, those sources could still provide useful information on how the insurer establishes its view of the amount of risk and the effect of risk aversion.
33. The very purpose of the risk adjustment (to measure remaining risk) implies the need for remeasurement. A number of factors can cause significant variability in the cash flows during the life of the contract. Uncertainty in future cash flows may change over time; that is, it may increase or decrease. It is important to ensure that both (a) the end of period risk adjustments are a faithful representation of the risk still present and (b) the change of the risk adjustment during the period is a faithful representation of what has changed in the period.
34. The insurer is able to take on the risk of an individual policyholder by grouping and managing a number of similar risks together. This pooling reduces the random fluctuation in the cash flows (ie the variance in a portfolio of similar contracts is lower than the variance of a single contract). As a result, it would be

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logical to estimate the risk adjustment at a higher level than at the individual contract level.

35. At a future meeting we will discuss whether the insurer should consider benefits from diversification between portfolios when estimating the risk adjustment.
36. For a more detailed description of relevant factors for determining a risk adjustment and an overview of techniques, we refer to appendices B and C respectively. Staff notes that the techniques in appendix C do not supply an objective for the risk adjustment; they simply supply a method for implementing an objective, once agreed.

Question #4 for the boards

Do the boards agree with the staff recommendation in paragraph 31 that the risk adjustment should be the amount the insurer requires for bearing the uncertainty about the resources it will require to fulfil the (remaining) net obligation from an insurance contract?

Do you agree that the risk adjustment should be updated (remeasured) each reporting period?

Do you have any comments on the material on risk adjustments included in appendix B and C?

Language in the IASB's Exposure Draft *Measurement of Liabilities in IAS 37*

- A1. The IASB recently published its Exposure Draft *Measurement of Liabilities in IAS 37* (the IAS 37 ED). This appendix provides some of the language included in the IAS 37 ED and compares that language with the proposed for the measurement of insurance contracts.
- A2. To give an overview of the language in the IAS 37 ED, we included the following excerpts from that ED:
- 36A An entity shall measure a liability at the amount that it would rationally pay at the end of the reporting period to be relieved of the present obligation.
- 36B The amount that an entity would rationally pay to be relieved of an obligation is the lowest of:
- (a) the present value of the resources required to fulfil the obligation, measured in accordance with [an appendix to the draft standard];
 - (b) the amount that the entity would have to pay to cancel the obligation; and
 - (c) the amount that the entity would have to pay to transfer the obligation to a third party.
- 36C An entity might be unable to cancel or transfer some obligations within the scope of this Standard. If there is no evidence that an entity could cancel or transfer an obligation for a lower amount, the entity measures the liability at the present value of the resources required to fulfil the obligation.
- B1 The present value of the resources required to fulfil an obligation shall be estimated taking into account:
- (a) the expected outflows of resources and the time value of money—see [paragraphs B2–B14 of the IAS 37 ED]; and
 - (b) the risk that the actual outflows of resources might ultimately differ from those expected—see [paragraphs B15–B17 of the IAS 37 ED].
- B5 The estimates of the outflows of resources required to fulfil the obligation shall:
- (a) incorporate, in an unbiased way, all available information about the amount, timing and probability of the relevant future outflows.
 - (b) be consistent with observable market prices, if such prices are available.
- B6 The relevant future outflows are those that affect the amount that the entity would rationally pay to be relieved of the present obligation.

- B8 Some types of obligation will be fulfilled by undertaking a service at a future date. Subject to the exception in paragraph B9 [a temporary exception for contracts within the scope of the projects on revenue recognition and on insurance contracts], the relevant outflows for such obligations are the amounts that the entity would rationally pay a contractor at the future date to undertake the service on its behalf:
- (a) if there is a market for a service, the amount is the price that the entity estimates a contractor would charge at the future date to undertake the service on the entity's behalf.
 - (b) if there is not a market for the service, the entity estimates the amount it would charge another party at the future date to undertake the service. The estimates shall include the costs the entity expects to incur and the margin it would require to undertake the service for the other party.
- B15 An entity shall consider the risk that the actual outflows of resources might ultimately differ from those expected. A risk adjustment measures the amount, if any, that the entity would rationally pay in excess of the expected present value of the outflows to be relieved of this risk.
- A3. The measurement objective staff proposes in this paper for **insurance contracts** is:
- [an entity's current estimate of] the present value of resources required to fulfil the net obligation created by the insurance contract.**
- A4. This measurement objective and its explanatory language results in the following differences compared to the language in the IAS 37 ED:
- (a) If there is evidence that an entity could transfer or settle a liability for less than the present value of the resources required to settle it, the IAS 37 ED requires an entity to use that amount. A transfer market does not exist for insurance contracts; insurance companies typically fulfil the contract over time with the policyholder. Therefore, the draft measurement guidance for insurance does not refer at all to a transfer amount or settlement amount.
 - (b) The proposed explanatory language for the measurement of insurance contracts requires that all available information is used and, in addition, that financial market variables should be consistent with observable market information. The proposed IAS 37 measurement requires that the estimates of the outflows of resources required to fulfil the obligation should be consistent with observable market prices, if such prices are available. The guidance for IAS 37 might be seen as requiring a somewhat broader input of market information. However, staff believes that the impact of this difference will be limited in practice because an insurer often would not be able to identify observable market information for inputs other than financial market variables.
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- (c) Like the measurement in the IAS 37 ED, the proposed insurance measurement includes a risk adjustment to convey useful information about the uncertainty in the remaining cash flows. For both measurements, this adjustment would depict the insurer's view of uncertainty. The risk adjustment in the IAS 37 measurement is based on the amount the entity would rationally pay to be relieved of this risk. The proposed insurance measurement looks at the risk adjustment that the insurer requires as a part of fulfilling the remaining obligation. Because for both measurements the objective is to estimate the insurer's view of uncertainty, both approaches to the risk adjustment would use similar inputs and the outcome might be similar in many cases. Moreover, because an insurer often would not be able to identify observable market information about risk adjustments, the insurer would have to estimate the amount it would rationally pay to be relieved of this risk based on fulfilling the remaining obligation.
- (d) For types of obligation that are fulfilled by undertaking a service at a future date, the proposed IAS 37 measurement would include a profit element. The proposed insurance measure would instead implicitly include that profit element in a residual margin that would run off as service is provided. This approach would lead to the same result as using a separate, explicitly measured profit margin if all the following conditions are met:
- (i) The driver used to release the residual margin is broadly consistent with the pattern of provision of the related services.
 - (ii) There is no significant change in either the quantity of service required or the cost of providing the service.
 - (iii) There is no significant change over the life of the contract in the margin required for providing the services.

Factors for determining a risk adjustment

- B1. The objective of including a risk adjustment in the measurement of an insurance contract is to convey useful information to users about the uncertainty associated with the contract. To achieve that objective the estimate of the risk adjustment should consider the effects of uncertainty about the amount and timing of future cash flows.
- B2. To convey useful information about future cash flows, the characteristics of that risk adjustment are likely to include the following:
- (a) The less that is known about the current estimate and its trend, the higher the risk adjustment should be.
 - (b) Risks with low frequency and high severity will have higher risk adjustments than risks with high frequency and low severity.
 - (c) For similar risks, long duration contracts will have higher risk adjustments than those of shorter duration.
 - (d) Risks with a wide probability distribution will have higher risk adjustments than those risks with a narrower distribution.
3. Furthermore, an insurer should select an approach for determining risk adjustments that considers the following factors:
- (a) Numerous techniques exist for determining the risk adjustment. The selection of the appropriate method may vary between types of insurance contracts and different entities. Judgment must be applied in determining the appropriate method for each type of insurance contract. Various techniques are available and the use of the methods may vary by product (see Appendix C). For example, one potential method could focus on a particular confidence level, such as the quantile method. Another method is based on cost of capital, acknowledging that an insurer's ability to sell new business to policyholders depends on holding sufficient capital to enable it to cope with adverse events.
 - (b) Risk adjustments should be explicit, not implicit. That is an important change from many existing practices that rely on estimates incorporating an implicit (and often unstated) degree of conservatism or prudence. Separating explicit estimates of future cash flows from explicit risk adjustments would improve the quality of estimates and enhance transparency.
 - (c) The risk adjustment for an insurance liability should reflect all risks associated with the liability.
 - (d) The risk adjustment for an insurance liability should not reflect risks that do not arise from the liability, such as investment risk (except when investment risk affects the amount of payouts to policyholders), asset-liability mismatch risk, or general operational risk relating to future transactions.
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- (e) The approach should be implementable at a reasonable cost and in a reasonable time, and be auditable.
 - (f) The approach should not ignore the tail risk in contracts with very skewed pay-offs, such as contracts that contain embedded options (eg the interest guarantees and other financial guarantees embedded in many life insurance products) or that cover low-frequency high-severity risks (such as earthquake), or portfolios that contain significant concentrations of risk. For example, if a large portfolio of insurance contracts is subject to significant earthquake risk but the insurer estimates that the probability of an earthquake is only 1 per cent, the approach should not ignore that risk.² Option-pricing methods or stochastic modelling may be needed to provide effective estimates of the risk adjustments associated with these items.
 - (g) The approach should make it easy to provide concise and informative disclosure, and for users to benchmark the insurer's performance against the performance of other insurers.
 - (h) If more than one approach is compatible with the above criteria, it is preferable to select an approach that builds on models that insurers use (or are developing) to run their business. For example, an insurer may be able to build on an economic capital model, an embedded value model or a model developed for solvency, if the resulting approach is compatible with the above criteria.
 - (i) The approach should not overlook model risk (the risk that a model is not a good description of the underlying process) or parameter risk (the risk that a model uses estimates of parameters that differ from the true parameters, or that the parameters may change over time).
4. Although the DP described the risk adjustment as conceptually separate from the other building blocks (expected cash flows, discount rate), the staff believes that the IASB did not intend to preclude 'replicating portfolio' approaches. A replicating portfolio is a portfolio of assets whose cash flows **exactly** match those contractual cash flows in amount, timing and uncertainty. If a replicating asset exists for all (or, more likely, some) of the cash flows, the insurer can include the fair value of these assets in the measurement of the insurance contract, instead of estimating the expected present value of those cash flows and determining an explicit risk adjustment for those cash flows. To avoid double counting, the risk adjustment does not include any risk that is captured in the replicating portfolio.

² The tail risk affects both (1) the expected cash flows and (2) the risk adjustment required for possible variations from the expected cash flows. Estimates of expected cash flows need to capture the effect that tail risk has on (1). The risk adjustment needs to capture the effect of tail risk on (2).

Techniques for Determining the Risk Adjustment

5. Listed below are various approaches that might be used in estimating risk adjustments, taken from the IASB discussion paper, *Preliminary Views on Insurance Contracts* (DP). In the DP, the IASB expressed the preliminary view that none is demonstrably better than all others in all circumstances, or demonstrably worse than all others in all circumstances. This list is not intended to be exhaustive. It may be possible to combine some elements from more than one of these techniques if the resulting combination satisfies the criteria identified above.
- (a) Confidence levels:
 - (i) explicit confidence levels (eg 75 per cent probability of sufficiency).
 - (ii) explicit minimum confidence level, but insurers may use a higher confidence level. [An approach of this type is in use in Australia.]
 - (b) Conditional tail expectation (CTE), sometimes known as tail value at risk (Tail VaR). CTE is the expected value of the tail of a probability distribution. For example, CTE 90 is the expected value of all outcomes beyond the 90th percentile.
 - (c) An explicit risk adjustment within a specified range. Accounting or actuarial guidance specifies the ends of the range for the adjustment (perhaps, as a percentage of the central estimate) and indicates criteria for deciding whether the margin should be set nearer one end of the range. [An approach of this type is in use in Canada.]
 - (d) Cost of capital. The estimated cost of holding the capital that is needed to give policyholders comfort that valid claims will be paid, and to comply with regulatory capital requirements, if any. [The CRO Forum³ suggests that an approach of this type might be suitable for both general purpose financial reporting and for reporting to supervisors. The suggested approach uses a ‘replicating portfolio’ of traded financial instruments to price the expected cash flows (and thereby also the risk adjustments associated with market variables), and a cost of capital approach to determine the risk adjustment associated with non-market variables.]
 - (e) Methods based on the capital asset pricing model or related asset pricing models.

³ The CRO Forum is a forum for the chief risk officers of major European insurers.

- (f) Adjustments to cash flows to place more weight on cash flows in some outcomes (eg 'deflator', 'no arbitrage' and 'market consistent' approaches) or to place more weight on larger cash outflows or smaller cash inflows (eg 'transformation' or 'distortion' approaches).
 - (g) Multiples of one or more specified parameters of the estimated probability distribution (eg multiples of the standard deviation, variance, semi-variance, or higher 'moments' of the distribution).
 - (h) A risk-adjusted discount rate. This approach is relatively simple and may be easy to benchmark against what other entities are doing. It may provide a reasonable indication of the pattern of release from risk if risk is directly proportional to the amount of the liability and the remaining time to maturity. However, insurance liabilities do not always have these characteristics. For example, lapse risk may not affect cash inflows and cash outflows in the same way. Moreover, risk adjustments generally reduce the value of future cash inflows but increase the value of future cash outflows. A single risk-adjusted discount rate is unlikely to capture these differences in risk.
6. The following approaches do not meet the criteria proposed above.
- (a) Implicit (and unspecified) confidence level.
 - (b) Implicit (but unspecified) risk adjustment through use of conservative assumptions that aim to give reasonable assurance at an implicit confidence level that ultimate cash payments will not exceed the recognised liability. Terms sometimes used in this context are 'sufficiency' (eg a high probability that amounts paid will not exceed the reported liability), 'provision for risk of adverse deviation' and prudence.