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Accounting Standards Advisory Forum

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|-------------|--|--|---------------------|
| Project | Present value measurements – discount rates research | | |
| Paper topic | Findings from the review | | |
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This paper has been prepared by staff of the IFRS Foundation. The views expressed in this paper reflect the individual views of the author[s] and not those of the IASB or the IFRS Foundation. Comments on the application of IFRSs do not purport to set out acceptable or unacceptable application of IFRSs.

Introduction

1. The concept of the time value of money is a core principle of finance. This principle holds that money at the present time is worth more than the same amount of money at a future date. A common valuation technique, the present value measurement technique uses expected future cash flows in a combination with a discount rate in order to arrive at a current period measurement. This method requires two main inputs: estimate of future cash flows, including their amount, timing and variability, and estimate of a discount rate consistent with the cash flows. Each of these inputs can take into account various factors, such as risk and uncertainty.
2. Most accounting measurements use either contractual or observable marketplace-determined amounts as a basis for measurement. However, accounting requirements sometimes require or allow estimated future cash flows as a basis for measuring an asset or a liability. These measurements may be based on the present value technique.
3. IFRS written over the years have required different factors to be reflected in present value measurement in different Standards, which in turn means different discount rates are required or allowed to be used. Views received during the IASB's 2011 Agenda Consultation suggest that the reasons for using different discount rates are not well understood, with some respondents suggesting that such differences cause IFRS requirements to be inconsistent (see paper on stakeholder views for comment letter summary).

4. Responding to these views, the IASB has conducted a research project to examine discount rate requirements in IFRS to identify why those differences exist and assess whether there are any unjustified inconsistencies that the IASB should consider addressing.
5. The research considered the following aspects of present value measurement:
 - (a) When is present value measurement used in IFRS (and when is it not)?
 - (b) Impact of present value measurement on performance reporting
 - (c) How differences in measurement objectives explain the differences in discount rates
 - (d) Individual components of present value measurements
 - (e) Measurement methodology
 - (f) Terms and definitions used in the context of present value measurement
6. The purpose of this ASAF meeting is to present the findings of this research project to date and obtain input on the findings as well as on any need for change identified in each of the areas reviewed.
7. This paper is intended as background reading to provide more details about the issues to be discussed.
8. Contents list and list of tables are included at the end of the document.

Background

9. We use present value measurement techniques (present value measurement) to reflect the time value of money. Present value measurement translates a sum of money to be held at a future date (a future value) into an equivalent in terms of money held today (a present value). So, for example, if an entity is certain that it will have CU105¹ in one year and if the rate of return is 5 per cent, present value measurement converts the future value of CU105 into a present value of CU100.

¹ In this paper, currency amounts are denoted in 'currency units' (CU).

10. This basic description, however, is trivial. One former IASB member has observed that *any* combination of cash flow estimates and a discount rate discounted to the present day gives us a present value. The questions are what is the *objective* of the measurement and what are the *components* of the estimates.
11. Present value techniques are not limited to discounting certain future cash flows using a fixed rate of return. In the real world, there is no certainty about the future. Any of the following may be uncertain:
 - (a) how much money (cash) an item, for example an asset or liability, will generate or require at the future date;
 - (b) in some cases, when the future date will be; and
 - (c) what the purchasing power of a specified sum of money will be at the specified date.
12. Depending on the measurement objective, the uncertainty can be reflected in different ways in a particular measurement. We discuss measurement objectives in IFRS in the following section.

Objective of present value measurement in IFRS

13. IFRS does not set a single objective for the present value measurement techniques—the technique can be used in meeting various measurement objectives. The measurements arrived at in different Standards differ, because they have different measurement objectives. In this paper we will use the terms ‘measurement objective’ and ‘measurement basis’ interchangeably.
14. The existing *Conceptual Framework for Financial Reporting* (the Framework) does not, however, describe present value merely as a technique, but refers to it as a measurement basis in its own right (without any description of what it represents or includes). However, the Framework is being revised and the Exposure Draft describes present value measurement merely as a technique. The specific proposals for the Framework do not refer to present value measurement explicitly but make a broader reference to cash-flow-based measurement techniques.

15. *Conceptual Framework* Exposure Draft (ED) includes the following discussion in paragraph A2:

Cash-flow-based measurement techniques are not measurement bases; they are a means of estimating a measure. Hence, when using such a technique, it is necessary to identify the objective of using that technique (ie which measurement basis is being used)....

16. We have now established that present value measurement itself is not a distinct measurement basis, so what are the measurement bases used in IFRS?
17. Proposals in the *Conceptual Framework* ED consider two main measurement categories, namely historical cost and current value. Current values can be determined from an entity² perspective (value in use and value in fulfilment) or from a market perspective (fair value). This is presented in the following table:

| Measurement bases | |
|--|--|
| Historical cost | Current value |
| Measures based on historical cost provide monetary information about assets, liabilities, income and expenses using information derived from the transaction or event that created them. | Measures based on current value provide monetary information about assets, liabilities, income and expenses using information that is updated to reflect conditions at the measurement date. |
| | Measurement based on: |
| | <div style="width: 45%; text-align: center; background-color: #c0c090;">Market participant's assumptions</div> <div style="width: 45%; text-align: center; background-color: #c0c090;">Entity-specific assumptions</div> |
| | <div style="width: 45%; text-align: center; border: 1px solid #ccc; padding: 5px;">Fair Value</div> <div style="width: 45%; text-align: center; border: 1px solid #ccc; padding: 5px;"> <ul style="list-style-type: none"> • Value in use (assets) • Fulfilment value (liabilities) </div> |

18. Each category is described briefly in the following sections (descriptions taken from the *Conceptual Framework* ED).

² We discuss more about entity vs market perspective in the section Entity versus market perspective later in the paper.

Historical cost

19. Measures based on historical cost provide monetary information about assets, liabilities, income and expenses using information derived from the past transaction or an event that created them. The historical cost measures of assets or liabilities do not reflect changes in prices. However, the measures do reflect changes such as consumption or impairment of assets and fulfilment of liabilities.

Current values*Fair value*

20. Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.
21. Fair value reflects the perspective of market participants. That is, the asset or liability is measured using the same assumptions that market participants would use when pricing the asset or the liability if those market participants act in their economic best interest.
22. Fair value reflects the following factors:
- (a) estimates of future cash flows;
 - (b) possible variations in the estimated amount and timing of future cash flows for the asset or liability being measured, which are caused by the uncertainty inherent in the cash flows;
 - (c) the time value of money;
 - (d) the price for bearing the uncertainty inherent in the cash flows (ie a risk premium or a risk discount). The price for bearing that uncertainty depends on the extent of that uncertainty. It also reflects the fact that investors would generally pay less for an asset (would generally expect to receive more for taking on a liability) that has uncertain cash flows than for an asset (liability) whose cash flows are certain; and
 - (e) other factors, such as liquidity, that market participants would take into account in the circumstances.

23. For a liability, factors (b) and (d) include the possibility that the entity may fail to fulfil the liability (own credit risk).

Value in use and fulfilment value

24. Value in use and fulfilment value are entity-specific values. Value in use is the present value of the cash flows that an entity expects to derive from the continuing use of an asset and from its ultimate disposal. Fulfilment value is the present value of the cash flows that an entity expects to incur as it fulfills a liability.
25. Value in use and fulfilment value cannot be directly observed and are determined using cash-flow-based measurement techniques. In principle, value in use and fulfilment value reflect the same factors as described for fair value, but are determined by using entity-specific assumptions instead of those of market participants. In practice, to provide the most useful information, value in use and fulfilment value may need to be customised, for example:
- (a) to require the use of market participant assumptions about the time value of money or the risk premium; or
 - (b) to exclude from fulfilment value the effect of the possibility of non-performance by the entity.
26. These differences in measurement bases go some way to explain why different discount rates are used within different Standards. For example, a historical cost measure would use the original discount rate, whereas current value would use updated information.
27. However, the measurement objectives within individual Standards that require or allow the use of present value techniques do not always fit neatly in one of the categories proposed in the Framework. As a consequence, the discount rate differences go further. This is recognised in the proposals for the Framework, which discuss the use of cash-flow-based measurement to arrive at a ‘customised measurement basis’.
28. The measurement basis for each Standard that requires or allows the use of present value technique is shown in the table on the following page, and is tentatively mapped to its closest matching category in the ED. It should be noted that many Standards do

not set an explicit measurement objective, and the table infers objectives for those Standards.

| Item measured | Objective explicit | Measurement objective Proposed | |
|--|--------------------|---|-----------------------------|
| | | (as described or inferred) | <i>Conceptual Framework</i> |
| Defined benefit obligation (IAS 19) | ✘ | Present value of ultimate cost | Fulfilment value |
| Impaired non-financial asset (IAS 36) | ✔ | Value in use | Value in use |
| Provisions (IAS 37) | ✔ | Amount required to settle or to transfer the obligation | Fulfilment value |
| Insurance contracts (2013 ED) | ✘ | Present value of net cash flows expected to fulfil | Fulfilment value |
| Lease liability (2013 ED) | ✘ | Cost | Historical cost |
| Financial instruments at amortised cost (IFRS 9) | ✘ | Amortised cost | Historical cost |

Table 1 Individual measurement objectives and the Framework³

29. Before we go on to discuss measurement objectives within individual Standards in more detail, we will now review the circumstances in which present value measurement is used in IFRS.

When is present value measurement used in IFRS financial reporting?

30. Present value measurement is widely used in IFRS financial reporting. Sometimes it is used:
- (a) as one of measurement techniques that can be used to arrive at a measurement;

³ Although fulfilment value is the closest matching measurement basis for the IAS 19 measurement, the IAS 19 measurement is different in some respects, as described later in the paper.

³ Value in use is not a measurement basis per se, but a part of a threshold measurement that cannot be exceeded. See discussion on IAS 36 in later section.

- (b) on its own, as the only method by which to arrive at a measurement; and
- (c) as a threshold test—an asset measurement that cannot be exceeded but that is not used directly when that measurement is not exceeded.

31. These different uses are summarised in the table below:

| Discount rate | ① PV as one of measurement techniques | ② PV as the only measurement technique | ③ PV as a threshold measurement |
|--------------------------|---|---|---------------------------------------|
| Historical discount rate | | Lease liabilities, financial instruments measured at amortised cost | |
| Current discount rate | Assets and Liabilities measured at Fair Value | Provisions, Insurance Contracts, Pensions | Value in use for non-financial assets |
| Discount rate not used | | Deferred tax, Prepayments | Net realisable value for inventories |

Table 2 Use of present value measurements in IFRS

32. The following sections discuss each of the three categories identified in the table. We then discuss other uses of present value measurement as well as cases when discount rates are not used (but could be).

Present value as one of the measurement techniques (1)

33. IFRS sometimes requires or allows assets and liabilities to be measured at fair value. IFRS 13 *Fair Value Measurement* allows the use of various valuation techniques for fair value measurement, with present value measurement being one. However, valuation techniques are allowed only if observable prices for the asset or the liability are not available.

Present value as the only measurement technique (2)

34. Some Standards specifically require the use of present value measurement techniques in meeting the measurement objective of the Standard. These include IAS 17 *Leases* and the forthcoming *Leases* Standard, IAS 19 *Employee Benefits*, IAS 37 *Provisions, Contingent Liabilities and Contingent Assets*, and IFRS 4 *Insurance Contracts* and the forthcoming *Insurance Contracts* Standard. All measurements which use present value as the only measurement method are entity specific.

Initial measurement

35. For most⁴ assets, initial measurement is based on the price paid for the asset at the date of initial recognition and therefore does not require the use of present value measurement.
36. For liabilities, initial measurement at present value is used in the following circumstances:
- (a) liabilities incurred in an exchange transaction in which the value of the asset or service received cannot be measured directly and the payment is to be made in the future. Examples of these are lease liabilities accounted for in accordance with IAS 17 and the proposals in the 2013 Exposure Draft (ED) *Leases*, defined benefit pension liabilities accounted for in accordance with IAS 19 and insurance contracts accounted for in accordance with the proposals in the 2013 ED *Insurance Contracts*.
 - (b) liabilities that are not obtained in an exchange transaction and that do not have an observable price. Examples of these include provisions within the scope of IAS 37.

Subsequent measurement

37. Some liabilities are both initially and subsequently measured using present value measurement (Direct measurements).

⁴ Two exceptions to this are: (i) finance lease assets and (ii) some assets acquired in a business combination.

38. Financial assets and financial liabilities measured at cost typically have a price at their initial measurement that is used as a basis for measurement. However, they are subsequently measured using an effective interest method (amortisation), which requires the use of a discount rate that was determined at initial recognition. That measurement is therefore a present value measurement, although it does not seek to determine the current value. This method simply seeks to allocate the original cost using present value measurement, allowing for any impairment that has occurred.

Present value as a threshold measurement (3)

39. Present value measurement is also used when testing whether assets (measured at cost) have become impaired or have ceased to be impaired, which includes calculating the value in use in accordance with the requirements in IAS 36 *Impairment of Assets*. In IAS 36, value in use is used as a threshold measurement, not a measurement basis; if the asset's carrying amount (which is not determined using present value measurement) is lower than its value in use,—the carrying amount remains unchanged. In addition, an asset is measured at value in use only if the value in use is higher than the asset's fair value less costs to sell (in which case the value in use is the recoverable amount).
40. If the value in use is below the asset's carrying amount, the difference between value in use and the asset's carrying amount is recognised as an impairment loss. If the asset was previously impaired and the new value in use exceeds the asset's carrying amount, part or all of the previous impairment loss is reversed (if this is allowed). However, paragraph 116 of IAS 36 specifies that an impairment loss cannot be reversed if the only reason for that reversal is the passage of time (ie, the unwinding of the discount).
41. The requirements in IAS 36 for impairment testing, including computing value in use, apply to some assets within the scope of other Standards; this includes investments in associates accounted for in accordance with IAS 28 *Investments in Associates and Joint Ventures* and assets reclassified from the available-for-sale category in IFRS 5 *Noncurrent Assets held for Sale and Discontinued Operations*.

42. There are separate impairment requirements for financial instruments in IFRS 9 *Financial Instruments* that require an estimate of any expected future losses, which is discounted using a historical rate (usually a contractual rate). This amount, if any, is recognised separately.

Other uses of present value measurements

43. If the timing of payment for a good or service provided to a customer is not the same as the time when the good or service was provided, IFRS 15 *Revenue from Contracts with Customers* requires sellers to account for the financing component separately from the consideration, if financing is significant. This can result in interest income or interest expense being recognised subsequently.
44. IFRS 5 requires discounting of the expected costs to sell that are included within a measurement of an asset held for sale, if sale is expected to occur beyond one year (see paragraph 17 of IFRS 5).
45. The discount rate is also used in some assessments that do not affect measurements directly, such as assessing whether an exchange transaction has commercial substance, in accordance with IAS 16 *Property, Plant and Equipment*. (See paragraph BC22 of IAS 16.)

When is present value measurement not used in IFRS?

46. Even though IFRS generally requires the time value of money to be reflected in measurements, when material, there are instances in which it does not. Some of these constitute significant parts of the statement of financial position for many entities.
47. IFRS sometimes requires measurement that is based on future cash flows, but that either prohibits or does not require discounting. This includes:
- (a) the measurement of inventories at net realisable value in accordance with IAS 2 *Inventories* does not take into account the time it would take to sell inventories or put inventories into use. IAS 2 does not have a full Basis for Conclusions and does not explain the reason for this; one possible explanation could be that the time value of money was not considered to be material in these circumstances.

- (b) requirements for accounting for deferred taxes do not permit discounting.

Paragraph 54 of IAS 12 *Income Taxes* notes:

The reliable determination of deferred tax assets and liabilities on a discounted basis requires detailed scheduling of the timing of the reversal of each temporary difference. In many cases such scheduling is impracticable or highly complex. Therefore, it is inappropriate to require discounting of deferred tax assets and liabilities.

However, some think that deferred taxes that arise from assets and liabilities measured on a present value basis are automatically discounted. This is because, when the tax base of the item is zero (such as is common for some items, for example in many cases for a decommissioning liability), the deferred tax measurement is derived by multiplying the carrying amount (present value) by the tax rate, and that amount represents the present value of the future tax benefit.

48. IFRS often requires measurement that is based on past cash flows, but does not always consider the time value of money. Such areas include:

- (a) prepaid expenses, which are generally measured as the aggregation of past cash flows. (Note there is mixed practice on this and the IFRS Interpretations Committee (IFRS IC) is currently researching this issue. In its previous discussions, some suggested analogising to the requirements in IFRS 15, which deal with the accounting by the recipient of these payments, and which require the time value of money to be considered); and
- (b) property, plant and equipment and intangible assets carried at cost in accordance with IAS 16 *Property, Plants and Equipment* and IAS 38 *Intangible Assets*. Those Standards do not permit depreciation and amortisation to reflect the time value of money when computing the consumption of future economic benefits. This has been discussed as a part of the IASB's work on some of the more recent projects such as leases (when discussing how to amortise the right-of-use asset).

49. Finally, IFRS does not require discounting when the effect of discounting is deemed to be immaterial, in line with the general materiality concept in the *Conceptual Framework*. Some Standards provide explicit materiality expedients; for example, IFRS 15 does not require discounting if the time between performance and payment is less than one year.

Use of present value measurement – potential inconsistencies

50. Measurement based on past or future cash flows that does not reflect time value of money is not comparable to a measurement that does. Yet, IFRS currently does not require time value of money to be reflected in all measurements.
51. Stakeholders have in particular suggested that it is appropriate to reflect the time value of money in deferred tax (as some analysts and local GAAPs already do) and in prepayments made, which are particularly prevalent in emerging economies and in some industries.
52. On the other hand, present value measurement is often complex to apply in practice and the benefits of consistency have to be weighed against the costs of application.
53. This section discussed when the present value measurement technique is used in IFRS, and when it is not. The following section begins exploration of IFRS present value measurement requirements by considering its effect on performance reporting.

Present value in subsequent measurement and its effect on performance reporting

54. Two factors give rise to changes in a present value measurement—the unwinding of the discount with the passage of time, and the reassessment of the components of the present value measurement. This reassessment can arise from reassessment of the discount rate, of the cash flow amounts or of their timing.

Unwinding of discount/historical cost interest

55. The difference in a present value measurement from one period to another, if nothing else changes, is the effect of the passage of time, which reflects the time value of

money. It is also referred to as the unwinding of discount. The unwinding of the discount generally only arises in measurements that exclusively use present value techniques, ie measurements in column 2 in Table 2 above

56. The discount rate used for unwinding of the discount can be either current, if the measurement objective is current value, or historic/contractual, if the measurement objective is cost. However, in some current value measurements no unwinding of discount is presented but instead historical cost interest is presented in the profit or loss with the difference between the historical cost interest and the unwinding of discount recognised in other comprehensive income. For example, this is in the proposals for insurance contracts and also applies to some financial assets measured at fair value through other comprehensive income under IFRS9.
57. The unwinding of the discount in liabilities is usually recognised in the financial statements as part of finance/borrowing/interest cost, (unless capitalised as a part of an asset). This is specifically referred to in IAS 37, IFRS 4 and, IFRS 5, as well as in IAS 19⁵. IAS 37 notes that the effect of passage of time is to be recognised as borrowing cost (see paragraph 60 of IAS 37), IAS 19 refers to interest (see paragraphs 8 and 123-124 of IAS 19), whereas IFRS 5 refers to ‘financing cost’ (paragraph 17 of IFRS 5) and IAS 17 refers to ‘finance expense’ (paragraph 27 of IAS 17) as well as ‘finance charge’ (paragraph 25 of IAS 17). Thus, different terms are used for this effect, but all could be considered to mean interest.
58. The unwinding of discount for assets is recognised as finance income in leases in IAS 17 (paragraph 39 of IAS 17), and as interest income for financial assets within the scope of IFRS 9 as well as in IFRS 15.
59. Individual Standards do not stipulate where interest is presented in profit or loss, this is instead dealt with in IAS 1 *Presentation of Financial Statements*.
60. IAS 1 requires ‘finance costs’ to be presented as a separate line item in profit or loss (paragraph 82 of IAS 1). However, IAS 1 does not define what ‘finance costs’ are and, as different terms are used throughout Standards, not all interest recognised from

⁵ Note that interest expense in IAS 19 is required to be recognised as a net basis (a net interest) on a net defined benefit liability, if any. Interest on the entire defined benefit liability is only disclosed as a part of a reconciliation in the notes.

unwinding of discount is presented in finance costs line item in the statement of profit or loss, although it is always disclosed as interest in the notes, as required by individual Standards.

61. In particular, in applying IAS 19, entities may choose how to present net interest on a net defined benefit liability (asset). It can be presented either in the finance costs or together with other costs arising from employee benefits. Anecdotal evidence suggests that some entities are separating interest from other employee benefit costs and presenting it as a part of finance costs in the statement of profit or loss⁶

Present value reassessments

62. Continuing the discussion of the effect of present value measurement on performance reporting, the following sections discuss the effect of changes in present value measurements. We consider the effect of changes by each of three main types of uses of present value measurement, as per Table 2 above.

Present value as one of the measurement techniques

63. Changes in fair value measurement (which can be determined using present value technique) are recognised in profit or loss, except for when other comprehensive income is used to reflect some or all changes in fair value, in the following circumstances:

- (a) changes in own credit risk for financial liabilities if the entity elects to measure them at fair value in accordance with IFRS 9
Financial Instruments;
- (b) changes in fair value of financial assets measured at fair value through other comprehensive income in accordance with IFRS 9, excluding the amount recognised in profit or loss, which is the same as the amount that would have been recognised in profit or loss if the asset had been measured at amortised cost.

⁶ Company Reporting: CR Interim Monitor Issue 2015/0405, CR Monitor Issue 2014/0811 (www.companyreporting.com)

- (c) increases⁷ in the fair value of property, plant and equipment carried at revalued amount in accordance with IAS 16 *Property, Plant and Equipment*.

Present value as the only measurement method

64. Present value measurement requirements can either specify use of historical discount rates and cash flows (amortisation), in which case no remeasurement arises (apart from any impairment which is always recognised through profit or loss). Remeasurement arises when present value measurement components have to be updated at every reporting period (direct measurements).
65. This is summarised in the following table:

| Discount rate | Asset/liability | Remeasurement required? |
|-----------------|--|---|
| Historical rate | Financial instruments at amortised cost, Lease liabilities | Not for liabilities ⁸ Assets only if impaired |
| Current rate | Insurance Contracts, Provisions, Pensions | Yes |

Table 3 Remeasurement requirements for direct measurements

66. The effect of remeasurement is reflected in either profit or loss or other comprehensive income, or a combination thereof. This is illustrated in the following table:

⁷ Unless the increase reverses previous a revaluation decrease, which was recognised through profit or loss.

⁸ The discount rate used to measure lease liabilities is typically the historical discount rate determined at lease commencement. However, in some circumstances, the rate is updated (for example, if the lease term changes).

| Effect of remeasurement | Pensions | Provisions ⁹ | Insurance contracts ¹⁰ |
|-------------------------|----------------------------|----------------------------|-----------------------------------|
| | Discount rate | Other comprehensive income | Profit or loss |
| Cash flows | Other comprehensive income | Profit or loss | Profit or loss |

Table 4 Performance impact of present value remeasurement

67. The table shows that the remeasurement is recognised differently, depending on the asset or liability measured. Some think that this creates distortion in how requirements are applied in practice, see the paper 1C on stakeholders views for details.

Present value as a measurement threshold

68. As discussed above, a change in the value in use of an asset does not immediately lead to a change in the carrying amount of the asset. If the change is recognised, it goes to the profit or loss, as an impairment loss or reversal of a previous impairment loss (when IAS 36 allows reversal).

PVM and impact on performance reporting – potential inconsistencies

69. Different presentation of unwinding of discount and reassessment of discount rates can be confusing for a user of financial statements, especially if it is not clear where an item is included.

⁹ Please note that IFRIC 1 requires changes in decommissioning liabilities, for which discounting is most significant due to their size and long-term nature, to be reflected as an adjustment to the cost of the asset and not through profit or loss.

¹⁰ Tentative, the new Insurance Standard is not yet finalised. Also, insurance presentation in the table is much simplified, as effect of reassessment differs depending on the type of insurance contract and some of the changes do not go directly through either profit or loss or other comprehensive income, but are offset against the contractual service margin.

70. The Conceptual Framework ED discusses when the use of other Comprehensive Income might be appropriate.

More on current present value measurements

71. The focus of the remainder of this paper is on the current measurements in IFRS that require or allow use of present value measurement (some referred to as direct measurements). Historical cost measurements that require the use of present value technique use it simply as a way to allocate cost (amortisation). Thus, for these measurements, the following discussion of details of the discount rates and methodology is not relevant.
72. The Standards that we have reviewed are:
- (a) IAS 19, in which present value measurement is required for the measurement of defined benefit obligation and other long-term employee benefits¹¹;
 - (b) IAS 36, in which present value measurement is required to determine the value in use of non-financial assets, to ascertain whether they are impaired (and also can be used to determine fair value of assets in the scope of the Standard).
 - (c) IAS 37, in which present value measurement is required to measure provisions.
73. IFRS 13 is a recent Standard that reflects the Board's latest thinking. However, although we refer to fair value measurement in the paper, it is not within the scope of this review as such.
74. As noted earlier, we started the review by considering the measurement objectives in each of the Standards reviewed. We do not discuss the measurement objective for the forthcoming insurance contract Standard because drafting of the Standard is not finalised.

¹¹ We don't discuss other long-term employee benefits further in the paper because the impact of present value measurement on them is the same as for the defined benefit obligation.

75. In mapping the measurement objectives of individual Standards to the proposed categories in the Conceptual Framework in Table 1 above, all three measurements are described as entity-specific current value measurements. However, the exact measurement objectives, and related present value measurement requirements, are expressed differently and are not fully explicit in each of the Standards reviewed.

IAS 19 Employee Benefits

Measurement objective

76. IAS 19 sets out the requirements for the measurement of employee benefits. This includes liabilities that arise out of defined benefit schemes, which are measured as the present value of future cash flows. The Standard does not set out an explicit measurement objective for a defined benefit obligation. It only mentions estimates of the ultimate cost of providing post-employment benefits. For example, paragraph BC126(b) accompanying IAS 19 notes:

.....This is consistent with the measurement objective that the defined benefit obligation should be determined on the basis of the ultimate cost of the benefits.

77. The Standard explicitly requires discounting and specifies in paragraph 83 how to arrive at a discount rate to use:

The rate used to discount post-employment benefit obligations (both funded and unfunded) shall be determined by reference to market yields at the end of the reporting period on high quality corporate bonds. In countries where there is no deep market in such bonds, the market yields (at the end of the reporting period) on government bonds shall be used. The currency and term of the corporate bonds or government bonds shall be consistent with the currency and estimated term of the post-employment benefit obligations.

78. There is no specific objective of discounting stated nor there is an explanation of what the discount rate aims to represent. IAS 19 makes reference to reflecting time value of money in the discount rate (see paragraph 84 and the Basis for Conclusions for IAS

19) but not as an explicit or sole objective. An explanation of discount rate requirements is included in the Basis for Conclusions¹², paragraph BC 134:

IASC had not identified clear evidence that the expected return on an appropriate portfolio of assets provides a relevant and reliable indication of the risks associated with a defined benefit obligation, or that such a rate can be determined with reasonable objectivity. Consequently, IASC decided that the discount rate should reflect the time value of money, but should not attempt to capture those risks. Furthermore, the discount rate should not reflect the entity's own credit rating, because otherwise an entity with a lower credit rating would recognise a smaller liability. IASC decided that the rate that best achieves these objectives is the yield on high quality corporate bonds. In countries where there is no deep market in such bonds, the yield on government bonds should be used.

79. So, the Standard required two different rates to be used in different circumstances.
80. Some raised concerns about inconsistencies arising from using two different rates. Thus, in 2009, the IASB published an Exposure Draft proposing to remove the requirement to use a government bond rate when there is no deep market in high quality corporate bonds. Instead, the proposal was to require an entity to estimate the rate for a high quality corporate bond using the guidance on determining fair value. However, the responses to the ED indicated that the proposed amendment raised more complex issues than had been expected. The IASB therefore decided that it would address measurement issues, such as the discount rate, only in the context of a fundamental review of IAS 19. The IASB did not proceed with the proposals in that Exposure Draft.

IAS 19 discount rate in practice

81. So, which of the two discount rates is used when applying IAS 19 in practice? The International Actuarial Association (IAA) has conducted a limited survey of its

¹² Please note that the Basis for Conclusions does not form a part of the authoritative guidance.

members to identify which jurisdictions used corporate and which use government bond rates. Their findings are summarised as follows:

| Deep market = high quality corporate bonds used | Mixed practice | Market not deep = government bonds used |
|---|----------------|---|
| Canada | Portugal | Australia |
| Eurozone | Mexico | Brazil |
| Japan | Sweden | Caribbean Region |
| South Korea | | Colombia |
| Switzerland | | Croatia |
| UK | | Czech Republic |
| US | | Hong Kong |
| | | India |
| | | Russia |
| | | South Africa |

Table 5 Depth of corporate bond markets in jurisdictions with highest pension liabilities

82. The analysis shows that companies use government bond rates for measuring defined benefit liabilities in several jurisdictions. However, the proportionate value of pension liabilities measured using government bond rates, compared to estimated total pension liabilities, is small. For example, study on global pension assets conducted by Towers Watson¹³ can be interpreted as showing that 98 per cent of global pension liabilities are accounted for using corporate bond rates. A summary of the study findings interpreted by the International Actuarial Association is shown in the table on the following page:

¹³ Global Pensions Assets Study 2013, Towers Watson

| Jurisdiction | Total pension assets (USD bln) | | Assets funding defined benefit plans/total pension assets (%) | | Estimated defined benefit obligations (USD bln)(1) | | Discount rate used(2) |
|---|--------------------------------|---------------|---|--------|--|---------------|-----------------------|
| | 2013 | 2012 | 2013 | 2012 | 2013 | 2012 | |
| | US | 18,878 | 16,851 | 42 | 42 | 9,911 | |
| UK | 3,263 | 2,736 | 72 | 74 | 2,937 | 2,025 | Corporate bonds |
| Japan | 3,236 | 3,721 | 97 | 98 | 3,924 | 3,647 | Corporate bonds |
| Canada | 1,451 | 1,483 | 96 | 96 | 1,741 | 1,424 | Corporate bonds |
| Netherlands | 1,359 | 1,199 | 95 | 94 | 1,614 | 1,127 | Corporate bonds |
| Switzerland (3) | 786 | 732 | 100 | 100 | 983 | 732 | Corporate bonds |
| Germany | 509 | 498 | 100 | 100 | 636 | 498 | Corporate bonds |
| Australia | 1,565 | 1,555 | 16 | 19 | 313 | 295 | Government bonds |
| France | 169 | 168 | 55 (4) | 55 (4) | 116 | 92 | Corporate bonds |
| Ireland | 130 | 113 | 55 (4) | 55 (4) | 89 | 62 | Corporate bonds |
| Hong Kong | 114 | 104 | 55 (4) | 55 (4) | 78 | 57 | Government bonds |
| Brazil | 284 | 340 | 10 | 10 | 36 | 34 | Government bonds |
| South Africa | 236 | 252 | 10 | 10 | 30 | 25 | Government bonds |
| Total | 31,460 | 29,160 | | | 22,407 | 18,865 | |
| Liabilities measured using corporate bonds/total liabilities | | | | | 98% | 98% | |

(1) Based on Towers Watson asset/liability indicator which estimates liabilities are on average 25% higher than assets at the end of 2013
(2) Based on IAA limited member survey
(3) Switzerland has a return underpin and therefore like defined benefit for this purpose
(4) Average proportion used, no stats available for the jurisdiction
Table 6 Estimated size of corporate bond liabilities in the jurisdictions with most pension liabilities

83. It should also be noted that, as the world is recovering from the most recent financial crisis, the markets are getting more liquid. For example, in some countries, where currently government bond rates are used, a market review has taken place and for example Australian companies¹⁴ have recently concluded that its corporate bond market is now deep and the entities should therefore use corporate bond rates when applying IAS 19.

IAS 19 measurement objective – potential inconsistencies

84. The measurement objective in IAS 19 mostly resembles fulfilment value. However the measurement objective is not explicitly stated in the Standard. Lack of a fully described measurement objective shifts the focus to the detailed discount rate guidance resulting in rules-based accounting and inability to apply judgement.
85. In addition, the specific measurement requirements depart from the measurement objective of fulfilment value, which is an entity-specific measurement, as set out in the Conceptual Framework ED (see paragraph 6). The IAS 19 discount rate is not entity-specific but rather an average rate from a number of market participants and the only risk it includes (credit risk) is not relevant to the liability measured (but instead reflects average risk of market participants whose bonds are used in the measurement). This impairs comparability with other liabilities measured at fulfilment value. We discuss components of discount rates in more detail in the section on Individual components of present value measurement, see paragraphs 124 - 165.
86. Also, use of two different discount rates impairs comparability of pension liabilities between jurisdictions which have, and those that do not have, deep markets in corporate bonds. Empirical research (see Table 6) suggests this is not a big issue at the moment as most pension liabilities are measured using corporate bond rates. However, in recent years defined benefit liabilities have been growing in emerging economies, where corporate bond markets tend not to be deep, and thus the proportion of liabilities accounted for using government bond rates has been rising.

¹⁴ Research commissioned by Group 100 in Australia. http://www.group100.com.au/media/mr_20150415.htm

IAS 36 Impairment of Assets

Measurement objective

87. IAS 36 applies to non-financial assets that are measured either at cost or fair value. The objective of the Standard is to ensure that the amount that the asset is carried at is recoverable, ie not higher than its fair value less costs to sell or its value in use. The Standard does not set an objective for the measurement of the assets within its scope but instead specifies measurement threshold, that the asset's carrying amount may not exceed. If the carrying amount does exceed the threshold, the difference is recognised as an impairment loss.
88. The part of the IAS 36 measurement that we review here is the asset's value in use. The value in use is defined in IAS 36 as 'the present value of the future cash flows expected to be derived from an asset or cash-generating unit'.
89. By referring to present value in the definition of value in use, IAS 36 makes it clear that a discount rate is needed, because any present value measurement requires a discount rate.
90. The definition of value in use does not give further clues as to what should be a part of the measurement. However, the Standard provides detailed requirements on what the value in use should include and which discount rate to use (see the section on Present value measurement components from paragraph 105).

IAS 36 in practice

91. The findings of some studies¹⁵ (with a limited sample) indicate that, when determining recoverable amount in accordance with IAS 36, entities mainly use value in use. This has been confirmed in our limited outreach too.
92. Our limited outreach during the research also suggests that, in practice, value in use is not considered different from fair value determined using a present value technique. Some therefore consider value in use in IAS 36 to be unnecessary addition to complexity – see the paper 2C on stakeholder views for details.

¹⁵ PETERSEN, C. and PLENBORG, T. (2010), How Do Firms Implement Impairment Tests of Goodwill?. *Abacus*, 46: 419–446

IAS 36 measurement objective – potential inconsistencies

93. The objective of value in use in IAS 36 is consistent with the value in use description in the Framework Exposure Draft, so there are no inconsistencies relating to the measurement objective. Also the guidance in IAS 36 is the only IFRS guidance relating to value in use, so there is no Standard with which IAS 36 can be inconsistent.
94. The detailed guidance in IAS 36 does create some questions as to whether value in use is truly entity-specific, for example with respect to tax and risks. In addition, it can be quite difficult in practice to find the rate to apply in value in use calculation and some short-cuts can be used that are not necessarily consistent with the measurement objective. These detailed aspects are discussed in the sections on the discount rate components and the methodology.
95. A bigger question raised is whether value in use is necessary at all, or should only fair value be used. This is discussed further in the section on Entity versus market perspective from paragraph 110.

IAS 37 Provisions, Contingent Liabilities and Contingent Assets

Measurement objective

96. IAS 37 includes requirements for measuring provisions, which are defined in IAS 37 as liabilities of uncertain timing and/or amount. The measurement objective is ‘the best estimate of the expenditure required to settle the present obligation at the end of the reporting period’. The standard goes on to explain that this is ‘the amount that an entity would rationally pay to settle the obligation at the end of the reporting period or to transfer it to a third party at that time’.
97. The amount that an entity would rationally pay to transfer a liability to a third party sounds similar to fair value, which is defined in IFRS 13 as ‘the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date’.
98. However, IAS 37 also notes that the measurement should be at an amount that **an entity** would rationally pay, whereas fair value is the price that would be paid by a

market participant to transfer the liability in the market. IAS 37 is generally interpreted as having an entity-specific measurement objective. Consequently, we have mapped the IAS 37 measurement objective as being closest to fulfilment value.

IAS 37 in practice

99. In a 2011 analysis¹⁶ of 26 European companies, IAS 37 provisions ranged from only 0.1 per cent to 24.2 per cent of total liabilities. The ratio was lowest for banks (no more than 0.4 per cent) and highest for oil and gas and mining companies (at least 20 per cent)..
100. Some have suggested that entities do not fully update the rate in line with the market movements. Consider this extract from recent annual report of company with significant provisions:

We use a long-term bond rate to match the long-term nature of most of our provisions and, although the discount rate is reviewed annually, we do not adjust for changes in that rate which we consider to be more short-term in nature, the effects of which would not be material

IAS 37 measurement objective – potential inconsistencies

101. IAS 37 expresses the measurement objective as both the ‘best estimate of expenditure required to settle...at the end of the reporting period’ and ‘what you would rationally pay to settle or to transfer it to the third party’—these are not necessarily the same things and it may not be clear what they mean. Therefore, different entities may draw different conclusions resulting in diversity in practice.
102. Another feature of the IAS 37 measurement objective is that, although it seems most akin to fulfilment value, it is not expressed in those terms. Fulfilment value is the present value of the cash flows that an entity expects to incur as it fulfills the liability, and this is not how the measurement objective is expressed in IAS 37. This raises a question of which cash flows should be included in the measurement. The section on

¹⁶ Company Reporting analysis of 26 listed European companies, which feature in the Standard & Poor’s Europe 350 dataset with period ends of 31 December 2011.

Individual components of present value measurement from paragraph 105 discusses components in more detail.

103. Overall, however, the question is whether these perceived inconsistencies matter in practice. Measurement of provisions in IAS 37 involves a great deal of uncertainty and requires judgement, so differences are likely to remain.
104. This concludes our review of individual measurement objectives, and next we look at the present value measurement components and then present value measurement methodology.

Present value measurement components

105. As noted earlier, *any* combination of cash flow estimates and a discount rate can be used to arrive at a present value. The questions to be answered are what is the *objective* of the measurement and what are the *components* of the estimates. We have discussed the objectives and are now discussing measurement components.
106. IAS 36 (for value in use) and IFRS 13 (for fair value) describe the components of present value measurement in most detail (compared to other Standards), listing factors a market participant would consider when valuing an asset or a liability. This description includes:
- (a) an estimate of the future cash flow(s);
 - (b) expectations about possible variations in the amount or timing of those cash flows;
 - (c) the time value of money, represented by the current market risk-free rate of interest;
 - (d) the price for bearing the uncertainty inherent in the asset;
 - (e) other factors (such as illiquidity) that market participants would take into account; and
 - (f) for a liability, the non-performance risk relating to that liability, including the entity's (ie the obligor's) own credit risk.

107. Our review uses this list as a reference and discusses each of the components individually and whether and how they are included in various present value measurements.
108. IAS 36 *Impairment of Assets* and IFRS 13 *Fair Value Measurement* require all of these risks and factors to be considered in respective measurements. However, the resulting measurement is different, because IAS 36 requires an entity-specific current value when determining value in use and the fair value is a market-specific current value.
109. Given this, we first consider an entity-specific versus a market-specific measurement perspective. We then discuss each of the individual components of present value measurement and in which present value measurements they are included.

Entity versus market perspective

110. As already stated, fair value is a market-specific measurement whereas the other current measurements under review are entity-specific.
111. However, even though value in use is an entity-specific measurement, the discount rates required by IAS 36 is the same rate as the one used in fair value measurement, ie a market-based rate.
112. The IASB explains this apparent anomaly in paragraph BCZ 54 of IAS 36:

In principle, value in use should be an enterprise-specific measure determined in accordance with the enterprise's own view of the best use of that asset. Logically, the discount rate should be based on the enterprise's own assessment both of the time value of money and of the risks specific to the future cash flows from the asset. However, IASB believed that such a rate could not be verified objectively. Therefore, IAS 36 requires that the enterprise should make its own estimate of future cash flows but that the discount rate should reflect, as far as possible, the market's assessment of the time value of money. Similarly, the discount rate should reflect the premium that the market would require from uncertain future cash flows based on the distribution estimated by the enterprise.

113. The following table summarises the use of entity vs market perspective in present value measurements.

| Standard /Project | Item measured | Measurement attribute | Cash flow perspective | Rate perspective |
|----------------------------|--------------------------------------|-----------------------------------|---------------------------------|---|
| IFRS 13 | Assets and liabilities at fair value | Fair value | market | market |
| IAS 36 | Non-financial assets (impairment) | Value in use | entity | market |
| Insurance Contracts | Insurance liability (or an asset) | Present value of amount to fulfil | entity (consistent with market) | entity for risk ¹⁷ , market for the rest |
| IAS 37 | Provisions | The amount to settle or transfer | entity (implicit) | market |
| IAS 19 | Defined benefit plan obligation | Present value of ultimate cost | entity | market |

Table 7 Entity versus market perspective¹⁸

114. Some discount rate components are considered from the market perspective in all existing entity-specific present value measurements; for example the time value of money is always represented by market’s view of the rate. Other components are not so clear cut. For example, risk premium is considered from a market perspective in IAS 36 and possibly also in IAS 37 (if it is included in IAS 37 measurement at all; see discussion in the section on risk premium below). On the other hand, the proposed Insurance Contracts Standard includes a separate measurement for risk adjustment, which would be determined from the entity perspective.

115. These differences can be explained by the fact that insurance contract measurement is based on the price charged to the customer which reflects the insurance company’s (entity’s) view of the risk—it therefore makes sense that the liability measurement

¹⁷ The risk adjustment in insurance contracts is a separate component. It is not included as a part of the rate.

¹⁸ Some components of the present value measurement, such as risk premium, can be included either in the rate or the cash flows—this is discussed in the methodology section below. For the purpose of the table, they are assumed to be in the rate.

also reflects entity's view of the risk. Also, the entity's view is required to be consistent with the market.

116. So, in practice, how different is the entity perspective from the market perspective? Sometimes they could be the same, as indicated in the *Conceptual Framework* ED, paragraph 6.33:

If an entity is estimating the ...value of a specialised item, there may sometimes be little reason for the entity to assume that market participants would use assumptions different from those the entity itself uses. In that case, measurement from a market participant perspective and measurement from the entity's perspective are likely to produce similar measures.

117. When present value measurement is required to determine fair value, it usually means that all appropriate observable market inputs are not available and unobservable inputs may be needed, including some of entity's own estimates. Paragraph 89 of IFRS 13 says:

An entity shall develop unobservable inputs using the best information available in the circumstances, which might include the entity's own data. In developing unobservable inputs, an entity may begin with its own data, but it shall adjust those data if reasonably available information indicates that other market participants would use different data or there is something particular to the entity that is not available to other market participants (eg an entity-specific synergy).

118. IAS 36 goes on to specify how entity-specific value may be different to market value:

For example, fair value does not reflect any of the following factors to the extent that they would not be generally available to market participants:

- (a) additional value derived from the grouping of assets (such as the creation of a portfolio of investment properties in different locations);
- (b) synergies between the asset being measured and other assets;
- (c) legal rights or legal restrictions that are specific only to the current owner of the asset; and
- (d) tax benefits or tax burdens that are specific to the current owner of the asset.

Potential issues to be considered

119. Table 1 states that, in entity-specific direct measurements, cash flows are determined from an entity perspective, while some or all components of discount rate are determined from a market perspective. This could be misleading. This is because some components of measurement, eg tax or risk, could be included in either the rate or the cash flows. IAS 36, for example, says that the rate should be determined from a market perspective and that tax should be included in the rate (for more on this see the section on methodology and taxes from paragraph 176 below). However, the Standard also states that entity-specific tax benefits should be taken into account (see quote in bullet (d) in previous paragraph). Consequently, it is not entirely clear whether the market rate to be used in measurement reflects tax benefits specific to the entity.
120. There is also a larger question of whether the entity and the market perspectives are really different when there is no market data to observe. Some claim there should be no difference and that adding the entity perspective creates unnecessary complexity. As mentioned in the discussion on value in use measurement objective in IAS 36, this has led some stakeholders to conclude that entity-specific measurements such as value in use are unnecessary. See the paper on stakeholders views for more details on the views expressed. Or, perhaps there are two things being mixed up here:
- (a) Entity-specific measurement which can be seen as reflecting benefits available to the entity which are not available to other market participants such as tax breaks, synergies etc. The resulting measurement is the same as measurement another market participant would arrive at but it is not fair value as it reflects factors specific to the entity.
 - (b) Entity's perspective in measurement which can be seen as reflecting the entity's view of the risks, the cash flows the asset will generate under certain assumptions etc. The entity's perspective could be different from a typical market participant's perspective even though IFRS in some cases stipulate that these should be 'consistent with the market'.
121. IFRS does not make a distinction between entity-specific measurement and entity's perspective in the measurement nor does it define either. It seems that it is the latter

one which is perceived as creating unnecessary complexity. If an entity has the same benefits or burdens as other market participants, some may think that the view taken in measurement should be the same as the view taken by any other market participant, ie there is no need to say the measurement is from the entity’s perspective, even if it is an entity-specific measurement.

122. We will now move on to briefly discuss which individual components are included in which present value measurements under review.

Individual components of present value measurement

123. The following table shows which components of the present value measurement are included in Standards that require the use of current present values (direct measurements).

| IFRS/ Project | Item measured | Measurement description | Central estimate of cash flows | Time value of money | Risk premium | Liquidity premium | Own non- performance risk |
|----------------------------|--------------------------------------|--|---|------------------------------|-----------------|----------------------|--------------------------------------|
| IFRS 13 | Assets and liabilities at fair value | Fair value | Yes | Yes | Yes | Yes | Yes |
| IAS 36 | Non-financial assets (impairment) | Value in use | Yes | Yes | Yes | Yes | n/a |
| Insurance Contracts | Insurance contract | Present value of net cash flows expected to fulfil | Yes | Yes | Yes (separate) | Yes | No |
| IAS 37 | Provisions | The amount to settle or transfer | Yes | Yes | Implicit | Not explicit | Not explicit (in practice no) |
| IAS 19 | Defined benefit plan obligation | Present value of ultimate cost | Yes | Yes | No | Some | Some |

Table 8 Components of present value measurement in various Standards

124. The following sections discuss each of the components, starting with the estimate of future cash flows.

Estimate of cash flows

125. Estimating cash flows involves determining:
- (a) what the future cash flows would be;
 - (b) when those future cash flows would occur; and
 - (c) the probabilities of different scenarios occurring, with respect to both amount and timing.
126. Other decisions are also needed, for example how to reflect variations in future cash flows, and whether cash flows estimates should include profit. These are discussed in the following sections.

Possible variations in estimated amount and timing of cash flows

127. The following are extracts from paragraph A6 – A9 in the ED for *Conceptual Framework*, explaining the different central estimates of future cash flows:

Uncertainties about the amount of any cash flows are important characteristics of assets and liabilities. When measuring an asset or liability by reference to uncertain future cash flows, it is necessary to represent the range of possible cash flows by selecting a single amount. The most relevant amount is usually one from the centre of the range (a central estimate).

Different central estimates provide different information. For example:

- (i) the expected value (the probability-weighted average, also known as the statistical mean) reflects the entire range of outcomes and gives more weight to the outcomes that are more likely. It is not intended to predict the ultimate inflow or outflow of cash (or other economic benefits) arising from that asset or liability.
- (ii) the maximum amount that is more likely than not to occur (similar to the statistical median) indicates that the probability of a subsequent loss is no more than 50 per cent and that the probability of a subsequent gain is no more than 50 per cent.

- (iii) the most likely outcome (the statistical mode) predicts the ultimate inflow or outflow arising from an asset or a liability.

.....

As noted in paragraph A2, a central estimate does not capture the price for bearing the uncertainty that the ultimate outcome may differ from that central estimate.

Profit margin

128. Another question is whether a profit margin should be added to the central estimate of future cash flows. To some, it may not make sense to include required profit in the estimate of the cash flows in calculating the cost of fulfilling the liability, because they believe that an entity should not report that it has earned profit on fulfilling its obligations. However, it may make sense to include profit in the measurement of the amount payable to transfer the obligation, because no party would be prepared to take on the liability without receiving consideration sufficient to compensate it for the activity required to fulfil the liability and for any risks it undertakes. It might also make sense to include profit in the liability which arises from revenue generating transaction. IFRS is not very clear on whether for example the profit is included in measurement for provisions, which may give rise to inconsistencies in the measurement. The following table summarises its use in the Standards reviewed:

| Standard / Project | Item measured | Measurement attribute | Profit margin included |
|---------------------|--------------------------------------|-----------------------------------|------------------------|
| IFRS 13 | Assets and liabilities at fair value | Fair value | Yes (implicit) |
| IAS 36 | Non-financial assets (impairment) | Value in use | Yes (implicit) |
| Insurance Contracts | Insurance liability/asset | Present value of amount to fulfil | Yes |
| IAS 37 | Provisions | The amount to settle or transfer | Not clear |
| IAS 19 | Defined benefit plan obligation | Present value of ultimate cost | No (implicit) |

Table 9 Inclusion of profit margin in measurements

Potential issues to be considered further

129. We will investigate further which central estimates of cash flows are in practice used in different measurements and whether any inconsistencies create issues in practice. IAS 37, for example, permits use of different central estimates whereas IAS 36 requires expected values to be used in determining value in use.

Time value of money

130. In principle, the time value of money is represented by the minimum risk rate or sometimes referred to as the risk-free rate. This is generally how the term is used in Standards in the scope of this review (current present value measurements)—the following table summarises the meaning attributed to it in those Standards.

| Standard | refers to refers to risk-free TVOM represented by TVOM rate which rate? risk-free rate = ? | | | | Relevant paragraphs |
|----------|--|-----|---|--|------------------------------------|
| IFRS 13 | yes | yes | market risk-free rate | government bonds (in illustrative examples only) | B13(c) |
| IAS 19 | yes | no | not specified | n/a | 84 |
| IAS 36 | yes | yes | market risk-free rate | government bonds (in the Basis only) | 30 (c), 55 (a), 56, A1 (c), A16(a) |
| IAS 37 | yes | no | not specified apart from TVOM being a market rate | n/a | 45 - 47 |

Table 10 Use of term ‘time value of money’ in Standards reviewed

Time value of money in practice

131. Some regulators, eg in Europe in Australia publish risk-free rates, which aids consistency of application. Academic research¹⁹ which included survey on risk-free rates used in a number of jurisdictions has looked at variance in risk-free rates used and finds greater variance in the rates used in some of the emerging markets.

¹⁹ Fernandez, Pablo and Ortiz Pizarro, Alberto and Fernández Acín, Isabel, Discount Rate (Risk-Free Rate and Market Risk Premium) Used for 41 Countries in 2015: A Survey (April 23, 2015). Available at SSRN: <http://ssrn.com/abstract=2598104>

Potential issues to be considered further

132. Determining what the risk-free rate is not easy in practice, especially in emerging economies where there is generally little market for government bonds. We note that in some jurisdictions regulators assist in this process.

Risk premium

133. What is risk premium? A generally accepted explanation helps here: investors who buy assets have returns that they expect to make over the time horizon over which they will hold the asset. The actual returns that they make over this holding period may be very different from the expected returns, and this is where the risk comes in. Risk in finance is viewed in terms of the variance in actual returns around the expected return. The price investors are willing to pay for an asset therefore reflects the risk that the returns may be different than expected.
134. Another way of putting it is that the risk premium is compensation for accepting the uncertainty related to the cash flow estimates which is how risk premium is used in IFRS.
135. This means that simply taking into account expected value using real probabilities does not adjust for the risk. To adjust for risk, a separate adjustment is needed, either to the cash flows or the discount rate used, see from paragraph 171 for discussion of methodology.
136. In principle, risk adjustments can increase or decrease a value of assets and liabilities. In existing Standards, however, the risk adjustment usually decreases the value of an asset and increases the value of a liability.

Practice

137. As indicated in Table 8, which provides an overview of components of present value measurement, not all present value measurements in IFRS explicitly include a risk premium.
138. For example, some think IAS 37 is explicit in that risk adjustment is required, whereas others think it is not. This could create diversity in practice.

139. There is also practical argument often cited against including risk premium in measurement, which is that its inclusion makes uncertain measurements even more uncertain and the resulting measurement less reliable.
140. While requirements for calculation of value in use explicitly require risk to be considered, in practice entities often use a weighted average cost of capital (WACC) rate, without necessarily adjusting it for the risks specific to the asset being measured. This is something that regulators often point out (see Agenda Paper 2C on stakeholders' views).

Potential issues to be considered further

141. It appears that there are inconsistencies across Standards with respect to whether risk adjustment is included as a part of the measurement. Even when the risk is included, sometimes it is from an entity perspective and sometimes from a market perspective, which is another potential source of difference—but in practice the difference in perspective may not give rise to different measurement. Some have indicated that just clarifying when risk is included in measurement would be of help.

Liquidity risk

142. Liquidity risk is a relatively new concept in accounting, which is only explicitly addressed in the most recent IASB work (for insurance contracts, for example).
143. IFRS does not discuss liquidity risk in much detail, apart from mentioning it within the context of assessing the activity of a market in IFRS 13. Recent proposals in the Insurance Contracts project also address liquidity risk. The discussion in paragraph BCA75 of the Basis for Conclusions of the 2013 Revised Exposure Draft for Insurance Contracts explains the notion:

Discussions of the time value of money often use the notion of risk-free rates. Many use highly liquid, high-quality bonds as a proxy for risk-free rates. However, the holder can often sell such bonds in the market at short notice without incurring significant costs or affecting the market price. This means that the holder of such bonds acquires two things:

(a) a holding in an underlying non-tradable investment, paying a return that is higher than the observed return on the traded bond; and

(b) an embedded option to sell the investment, for which the holder pays an implicit premium through a reduction in the overall return.

144. This ‘implicit premium’ is liquidity premium. Or, we can talk about illiquidity discount which increases the return to compensate for the lack of liquidity.

145. The IAA Monograph *Discount Rates in Financial Reporting—A Practical Guide*²⁰ discusses liquidity in some detail, with relevant extracts as follows:

Generally, liquidity for the holder of an asset, such as a corporate bond, can be defined as the ability to quickly sell the asset at a predictable price.

At a basic level, the application of an illiquidity premium for asset valuation results in a less liquid asset having a higher rate of return (lower value) than an otherwise identical asset with higher liquidity, as the owner of that asset requires a greater return to compensate for not being able to trade or exchange it for cash during the period of illiquidity.

The concept of an illiquidity premium within the valuation of liabilities requires a different conceptualisation because there is generally not an actively traded..... Because of this, the liquidity of a liability is often defined with respect to options given to the beneficiary. The liquidity of a liability is a function of the basic contract provisions, and especially any options that might exist for the policyholder that would impact the uncertainty regarding the amount and timing of payments.

....

Liquid liabilities have higher uncertainty with respect to the timing and amount of payments. They therefore have a lower

²⁰ Published in October 2013 by the International Actuarial Association.

illiquidity premium, a lower discount rate and a higher liability value.

146. Whilst a distinct notion, liquidity could also be seen as a part of overall risk premium.

Practice

147. Both IAS 36 and IAS 37 describe the discount rate as the rate that reflects the time value of money and the risks specific to the asset/liability. IAS 36 further specifies these risks to include uncertainty risk as well as other market factors, such as illiquidity, that market participants would take into account. IAS 37 mentions uncertainty risk (risk adjustment), but it does not mention liquidity risk. We understand a concept of liquidity risk was not well known to most accountants at the time when IAS 37 was developed. However, if the objective of both measurements is to reflect risks specific to a liability, one could expect the measurements to consider the same factors.
148. We have seen no evidence that liquidity is specifically considered in when applying measurement requirements in IAS 37 nor for value in use in IAS 36.
149. However, measuring provisions is already a difficult task because of their uncertainty and because of the long time scales usually involved. Requiring entities to specifically reflect liquidity risks might bring more costs than benefits. Consider this statement in one of the research reports issued by the credit rating agency Moody's:

Liquidity is recognised to be an important factor in determining asset prices. However, both the basic principle of applying liquidity adjustments to liabilities and the objective measurement of liability characteristics and point-in-time liquidity 'prices' remains controversial and technically challenging.

Potential issues to be considered further

150. The question of whether liquidity adjustments should be included in entity-specific measurements has been considered by the IASB in any detail only in the insurance contracts project. More work is needed to assess whether it is an issue that should be addressed in the context of other liabilities.

151. Including liquidity risk in all entity-specific measurements could have a major impact for both pension liabilities and provisions, which are generally not liquid and would therefore require an illiquidity discount, increasing the discount rate and reducing the liabilities recognised. For value in use, the impact would depend on the liquidity characteristics of the asset measured compared to the liquidity of the entire asset portfolio in the unit for which WACC is determined.

Own credit risk

152. Own credit risk is the risk that the entity may default on its financial obligations. As such, it is usually only relevant to liabilities.
153. The IASB considered dealing with own credit risk through a cross-cutting project in 2009. The following section provides some background.

IASB Discussion Paper on credit risk

154. In June 2009 the IASB published the Discussion Paper *Credit Risk in Liability Measurement* (the DP). The DP sought respondents' views on when and how credit risk should be included in liability measurement.
155. During its October 2009 meeting, the IASB discussed the 102 comment letters received and the next steps.
156. A summary of respondents' views on inclusion of credit risk in the measurement of different liabilities is shown in the following table.

| | Measurement | Include own credit risk? | |
|----------------------------------|-----------------------|--------------------------|------------------------|
| | | Initial measurement | Subsequent measurement |
| Financial liabilities | Fair value | Yes | Yes |
| | Other than fair value | Yes | No |
| Non-financial liabilities | Fair value | Yes | Yes |
| | Other than fair value | | |

| | | | |
|--|--------------------------------------|-----|----|
| | - initial consideration exchanged | Yes | No |
| | - no initial consideration exchanged | No | No |

157. The IASB’s discussion and decisions were summarised as follows:

- (a) The Board considered a summary of the responses to the discussion paper *Credit Risk in Liability Measurement*. The Board decided to stop work on credit risk as a separate project. The Board also tentatively decided:
 - (i) not to reach a general conclusion on credit risk at this time and instead to incorporate the topic into the Conceptual Framework measurement project;
 - (ii) not to change the role of credit/performance risk in the definition of fair value;
 - (iii) to consider the application of the fair value definition in measurements that would otherwise be at fair value; and
 - (iv) to consider the question of credit risk in every project that involves current measurement of liabilities that are not fair value.

IAS 37 and credit risk

158. IAS 37 does not provide detailed requirements with respect to own credit risk—as discussed in Agenda paper 1A all the Standard says is that the discount rate used in measurement should reflect risks specific to the liability.

159. Some asked whether liability recognised in accordance with IAS 37 should reflect own credit risk. This issue was raised with the Interpretations Committee (IFRIC, now ‘IFRS IC’) in 2010. The IFRIC referred the matter to the IASB, which was conducting a project to revise IAS 37 at the time (see the Agenda Paper 1C). However, the IASB halted its project before reaching any decisions on own credit risk.

160. At the time of the IFRS IC discussion, a general view was expressed that most entities excluded own credit risk from the measurement of provisions, because own credit risk

is not considered to be a ‘risk specific to the liability’ (but is instead specific to the entity that has the liability)²¹.

161. During this research project, we have consulted accounting guides issued by major audit firms, spoken to some auditors and reviewed annual reports of entities. On the basis of this limited evidence, it appears that most entities outside Canada exclude own credit risk.
162. This issue was raised with the IFRS IC by entities adopting IFRS for the first time in Canada for whom provisions were significant (as is the case for oil and gas and mining industries). It is our anecdotal understanding that some of these entities interpreted the IFRS IC decision as giving them a choice and have adopted an approach that includes own credit risk in IAS 37 discount rate, which is an approach consistent with Canadian GAAP before IFRS was adopted.
163. It is our understanding that entities outside Canada have continued to exclude own credit risk from IAS 37 discount rate, so divergence in practice is limited.

Potential issues to be considered further

164. All entity-specific present value measurements of liabilities seem to, in practice, exclude own credit risk from the measurement. This is however not explicitly stated in the requirements. Making this explicit may help eliminate any potential diversity in practice.
165. Some maintain that own credit should be a part of all measurements, including entity-specific ones. Consideration of this is outside the scope of this research project.
166. Now that we have briefly discussed each of the components of present value measurement, the following section discusses how these components are brought together in present value measurement—there are many ways in which this can be achieved!

²¹ Although one could also argue that if the liability is that of an entity, anything specific to the entity, such as its credit risk, is also specific to the liability.

Methodology

167. Three main principles apply when applying present value measurement technique using discounted cash flows:
- A. Do not double-count; for example if risk is reflected as an adjustment to the estimates of the cash flows, the discount rate used should be risk-free rate.
 - B. Use internally consistent assumptions; for example, if cash flows are determined after tax, the discount rate used should also be after tax.
 - C. Make sure to include everything; for example make sure to reflect risk.
168. Some Standards prescribe the method by which present value calculation should be performed (eg IAS 37 stipulates the use of pre-tax discount rates and the corresponding pre-tax cash flows) whereas others do not and merely emphasise the principles above. IFRS 13 and IAS 36 provide the most comprehensive guidance for present value methodology.
169. We have identified three main aspects of present value measurement methodology in IFRS, including:
- (a) How are risk adjustments reflected, ie whether as an adjustment to the rate, cash flows (or a separate measurement item)?
 - (b) How is tax accounted for, ie are inputs on a post-tax or a pre-tax basis?
 - (c) How is inflation accounted for, ie are inputs real or nominal?
170. The following table shows how different Standards deal with them:

| Standard/ Project | Item measured | Measurement attribute | Adjustment in rate or cash flows | Rate pre-tax/ post-tax or either | Rate real/nominal or either |
|----------------------|--------------------------------------|-----------------------------------|--|---|-------------------------------------|
| IFRS 13 | Assets and liabilities at fair value | Fair value | either | either | either |
| IAS 36 | Non-financial assets (impairment) | Value in use | either | pre-tax | either |
| Insurance Contracts | Insurance liability/asset | Present value of amount to fulfil | either | pre-tax (implicit) | either |
| IAS 37 | Provisions | The amount to settle or transfer | either | pre-tax | either (implicit) |
| IAS 19 | Defined benefit plan obligation | Present value of ultimate cost | n/a | pre-tax | nominal (unless real more reliable) |

Table 11 Present value measurement methodology in current present value measurements

171. We discuss each of these aspects in the following sections as well as some other methodology considerations.

Adjustments to the rate vs cash flows

172. The resulting measurement is the same regardless of whether adjustments are made to the rate or the cash flows. However, some think it is more reliable to adjust the cash flows because it avoids the assumption that the same risk adjustments are appropriate in each period and arguably makes the risk-adjustment process more accurate²². In particular, it avoids the misperception that the risk-adjusted discount rate for a liability will normally be higher than the risk-free rate, which would result in misstatement. However, some investors prefer to see adjustments made to a rate, because they report that they find that easier to understand.

²² Some have compared including the risk in the rate with making a guess.

173. Further, if the unwinding of the discount occurs, such as in accounting pensions and provisions and also for insurance contracts, the resulting interest cost will be affected by whether the risk-adjustment is included in the discount rate or not – consistency there is therefore important. This is not an issue for value in use and fair value calculations where there is no unwinding.

Potential issues to be considered further

174. Wherever risk adjustment is required to be included in present value measurement in IFRS, it is allowed to be made either in the cash flows or in the rate. In that sense we have not identified any inconsistencies.
175. However, unwinding of discount arises in accounting for provisions in IAS 37 and the measurement also includes risk adjustment. As the Standard does not specify where adjustment is to be made, this can give rise to inconsistency of presentation of resulting interest expense, depending on whether risk is reflected in the rate or in the cash flows.

Tax

176. The use of pre-tax discount rates in present value measurements is often required in IFRSs (see table 4). The pre-tax rate is not defined in IFRS and can be described as the rate of return, before any tax payable on related cash flows is taken into account. The pre-tax rate is often observable in the market; for example the yield on bonds or on property is a pre-tax rate, as this is the yield, before any tax is payable. The post-tax rate is lower than the pre-tax rate, as it reflects returns after any tax due on the cash flows is.
177. Pre-tax rate is sometimes misunderstood as a rate which does not depend on tax – but from the perspective of the holder of an asset, the required pre-tax rate is the same as the required post-tax rate, plus the tax that will be payable. The required pre-tax rate therefore depends on the rate of tax as well as the timing of tax cash flows.
178. In theory, applying pre-tax, higher, rate to discount pre-tax, higher, cash flows gives the same result as using post-tax, lower, rate to post-tax, lower, cash flows. In both cases the result is a measurement on a post-tax basis. This means such measurement already includes the effect of tax and no further adjustments for tax are needed.

179. In practice, two complications arise; one relates to conversion from post-tax to pre-tax rate and the other one is the interaction with deferred tax and potential double-counting. These are described in the following sections.

Conversion from post-tax to pre-tax rates.

180. IAS 36 requires use of pre-tax rates when determining value in use. Cash flows used in value in use calculations are typically available on a pre-tax basis so can be used as available (as all inputs have to be consistent, ie pre-tax). However, entities usually use WACC as a starting point for determining the discount rate, in accordance with guidance in IAS 36. WACC is usually a post-tax rate, from the entity's perspective. Now, as IAS 36 requires entities to use pre-tax rate, what happens next is that the post-tax rate is translated to the pre-tax rate. This is usually done by using a simple formula of dividing post-tax rate by (1-tax rate) which features in many accounting manuals.
181. This formula however only works in the very simple scenario of perpetual returns with no growth. In other cases calculation using this formula is wrong. There are two main reasons for this:
- (a) Pre and post-tax cash flows are not always related by the factor of (1-tax rate). This is because not every cash flow is taxed in the same way (eg return of capital is usually not taxed whereas the return on capital is).
 - (b) A linear relationship between pre and post-tax rate exists only when cash flows are even.
182. A number of other formulas have been devised to convert post-tax to pre-tax rate in other scenarios, eg to take into account steady growth, finite number of periods etc. Yet the fact is these are also much simpler than real-life scenarios and therefore converting the post-tax to pre-tax rate often gives erroneous answers.
183. As a result, many academics and valuation professionals recommend using post-tax rates available and converting pre-tax cash flows to post-tax cash flows.
184. This has led to some divergence in practice. Some companies use post-tax rates and post-tax cash flows, whereas others convert post-tax rates to pre-tax rates and apply these to pre-tax cash flows. Some disclose pre-tax rates, post-tax rates, or both.

185. Regulatory practice also differs²³, some regulators state they now accept calculations on post-tax basis, whereas others have taken regulatory action to require companies to use and disclose pre-tax discount rate.

Potential double-counting of tax effect

186. As already stated, using pre-tax inputs should give the same measurement as using post-tax inputs. The resulting measurement is on a post-tax basis, ie the measurement is net of any tax to be paid on future cash flows. Combinations of different tax perspective of inputs and resulting measurements are shown in the following table:

| | Pre-tax cash flows | Post-tax cash flows |
|---------------|-----------------------|-------------------------------|
| Pre-tax rate | post-tax measurement* | double-counting of tax effect |
| Post-tax rate | pre-tax measurement | post-tax measurement |

Table 12 Tax permutations

187. However, in some circumstances deferred tax arises, which is then recognised separately in accordance with IAS 12. This means that measurement in individual Standards is not always on post-tax basis. IAS 37 appears to recognise this, and in paragraph 41 states that ‘The provision is measured before tax, as the tax consequences of the provision, and changes in it, are dealt with under IAS 12’. However, if using pre-tax rates, which are required by IAS 37, the resulting measurement cannot be before tax. What seems to be the case is that, in cases where deferred tax arises, discount rates used for the underlying measurement reflect some, but not all of the tax due, so the tax effect has to be recognised separately. This is not very clearly explained in IFRS requirements and sometimes can give rise to overstatement of future tax benefits.

²³ Based on information provided by IOSCO Committee 1 on Issuer Accounting, Audit and Disclosure which comprises 28 members.

Potential issues to be considered further

188. The difference in the way a post-tax rate is adjusted to arrive at a pre-tax rate can mean the difference between impairment and no impairment in IAS 36. Explaining that a simple grossing-up of post-tax rate to arrive at a pre-tax rate does not always give the right answer may go some way to help. Currently only the Basis for Conclusions of IAS 36 explains this (paragraph BCZ85 of IAS 36 Basis for Conclusions). But the question is whether this is a job for the IASB or a job for the valuation professionals.
189. Another question is, when unwinding of discount does not arise, is there a need to prescribe how tax should be reflected in the rate in the way that IAS 36 does?
190. We need to do more work to fully understand the effects in practice of using pre-tax rates and the interaction with IAS 12. In principle, the pre-tax rate should be a rate that only reflects tax effects that will not be picked up by the application of IAS 12. If a pre-tax rate includes other tax effects (ie tax effects that are picked up by the application of IAS 12), the tax effects will be overstated. The effect of this overstatement would be consistent within a jurisdiction (if the same tax regime applies) but it still affects comparability depending on how many items that give rise to overstatement an entity has. It would also affect comparability between jurisdictions, especially if they have different tax regimes. However, the impact of the potential misstatement may not be material.
191. In general, this is an area often misunderstood in practice and some have called for more explanation and guidance.

Inflation

192. Similar as with tax, present value measurement can use inputs which are either before or after inflation (ie nominal or real) and, providing the inputs are consistent, the resulting measurement is the same.
193. IFRS measurements are mostly based on nominal discount rates (with nominal cash flows). Real rates are sometimes found in practice in IAS 37 and occasionally in IAS 19. Resulting measurement is the same.

Other methodology considerations

Which date for the rate

194. Some methodology questions brought to our attention include:
- (a) whether to use discount rate at the beginning or end of period for unwinding of discount (some Standards, like IAS 19 require rates from the beginning of period to be used (paragraph 123 of IAS 19), others are silent). This has an effect on split of interest income/expense and the remeasurement gains or losses. The advantage of using the rates at the beginning of the period is that they are known, ie you do not have to wait until year-end. The advantage of using the dates at year-end is that, unless there has been a change in the estimated future cash flows, no other reassessment is needed.
 - (b) whether it is meaningful to use the rates on the last day of a reporting period, when markets may be quite thin. For example, some believe there is usually little market activity on dates such as 31 December and the rates available on that day may be misleading. Anecdotal evidence suggests year-end rates could be different from the rates available only a few days earlier or later, with the main reason being the market liquidity. However academic research we have looked at on calendar effects is not conclusive.

Top-down vs bottom up

195. If the rate we require for measurement is not available in the market, there are two main approaches to determining which starting point to use:
- (a) Use risk-free rates available in the market and add or subtract components relevant to the asset/liability measured. This is sometimes referred to as bottom-up approach
 - (b) Use rates available for a different asset in the market and adjust it to remove components not relevant to the asset/liability measured and add any relevant components not included. This is sometimes referred to as top-down approach.

196. These different methods were discussed only in the insurance contracts project – we will do further research on potential impact different approaches may have on other measurements.

Use of yield curves

197. Yield curve shows interest rates for different maturities and can be used in measurement involving cash flows at different durations, instead of a single rate.
198. Use of yield curves is increasingly common – anecdotal evidence suggests that this is partly because low interest rate environment in some jurisdictions, and yield curves allow for more precision in the resulting measurement than using a single rate. Use of yield curves comes with a number of challenges, with scope for inconsistent application. For example, a topical question is what rate from the yield curve to include when determining unwinding of discount for the period. Another question is how to adjust available market data for the duration of the item measured. The different choices may have a material impact.
199. The question is whether any guidance is needed to help to ensure a consistent approach. Another question is whether this is something to be addressed at all by an accounting standard-setter.

The way forward – preliminary thoughts

200. We have an overarching question – given that there is only one fair value, is there a good reason that every Standard requiring entity-specific values requires somewhat different cash flows and the discount rate to be used? In principle maybe not. But, there are also some good reasons for differences, both practical and conceptual.
201. Nonetheless, there may be an opportunity to simplify financial reporting by bringing entity-specific values closer together. More specifically, it could help to clarify which individual components of the discount rate should be included in the measurements (and when), and to improve comparability and consistency in the methodology applied.
202. But, how can this be achieved? The Conceptual Framework ED proposes high-level definitions of value in use and fulfilment value but also envisages the use of

‘customised’ measurement bases to achieve the most relevant information. Use of such customised measurement bases would need to be justified by the IASB in the Basis for Conclusions to the relevant standard. These proposals would provide a framework in which to make decisions about the different components to be included in a present value measure and hence would provide some discipline to that decision-making process in the future. Is this enough, or is more detailed guidance needed?

203. Further, the IASB will not automatically change existing Standards as a result of these proposals. If an existing Standard works well in practice, the IASB will not propose an amendment to that Standard simply because of an inconsistency with the revised *Conceptual Framework*. Any decision to amend an existing Standard would require the IASB to go through its normal due process for adding a project to its agenda and developing an Exposure Draft and an amendment to that Standard. So, is there a need to revise existing Standards in relation to discount rates? If so, should this be done by looking at:

- (a) generic guidance on entity-specific values, ie a Standard similar to IFRS 13 on fair value measurement, and revising existing Standards to be consistent with that guidance, or
- (b) targeted improvements to specific Standards, either by this or other projects on specific Standard

Is there a role for education materials, in addition to or instead of standard-setting activities, especially to bridge the gaps in emerging economies?

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