Project **Cross cutting issues—measuring uncertain future cash flows**

Topic **Comparison of measures**

Purpose of paper

1 The IASB staff have prepared this paper as the first step in a cross-cutting exercise to evaluate different ways of addressing the uncertainty that arises when:

(a) an asset or a liability is measured by reference to future cash flows; and

(b) the future cash flows are uncertain, ie there is a range of possible outcomes.

2 To measure the asset or liability, it is necessary to reduce the range of possible cash flows to a single amount. Various single measures—such as the 'mean' or 'median' outcome, or most likely outcome in the range—could be used. IFRSs can enhance comparability in financial statements by prescribing the measure that entities should use for specific types of asset or liability. This paper compares different measures and identifies the circumstances in which each one might:

(a) provide the most useful information to users; or

(b) be a reasonable proxy for other measures on cost-benefit grounds.

3 No single measure provides investors with all relevant information about a range of possible outcomes. Furthermore, the entity might have only limited evidence to support its estimates of the possible outcomes, in which case any measure will be subject to some degree of estimation uncertainty. Consequently, a single measure will provide a faithful representation of an asset or liability only if the financial statements

describe it clearly and disclose additional information about the possible outcomes and any uncertainties surrounding the estimates.

4 This paper does not consider the practical issues that entities might encounter when estimating the future cash flows for specific types of asset or liability. The IASB staff will address these practical issues in future papers that apply the general conclusions to specific projects.

Measures compared in this paper

5 This paper compares six different measures described in accounting literature:

Description used in accounting literature	Alternative statistical label	Discussed in paragraphs
Expected value	Mean	8-21
Maximum amount that is more likely than not to occur	Median	22-36
Most likely outcome	Mode	37-46
Minimum or maximum amount in range of possible outcomes		48-50
Midpoint of range of possible outcomes		51-53
Possible outcome nearest to expected value		54-58

6 Some accounting literature also refers to another amount, namely the 'best estimate' of the future cash flows. However, the term 'best estimate' is described differently in different contexts and there is no common understanding of its meaning. For example, some accountants think that it means 'most likely outcome'. Others regard it as a term that allows them to choose whichever measure they judge to be 'best' for their particular asset or liability. Actuaries sometimes use the term to mean the probability-

weighted average of the future cash-flows, taking account of the time value of money (ie expected present value). Statisticians apply the term to any unbiased estimate with minimum variance. If required to identify a 'best estimate', they would ask 'best estimate of what amount?'

7 To avoid misunderstandings, this paper does not use the term 'best estimate'. It considers all of the measures that people might have in mind when they use the term, but it gives each a more precise label.

Expected value

Description

8 The expected value of a distribution of outcomes is the arithmetic mean, ie the probability-weighted sum, of the outcomes. If there are many possible outcomes, they can be reduced to a manageable number by identifying a sample that is representative of the complete distribution.

Example 1: expected value

A transaction has three possible outcomes:

Probability	Cash flow CURRENCY UNITS (CU)
40%	100
30%	200
30%	500

The expected value of the cash flows is:

(40% x CU100) + (30% x CU200) + (30% x CU500)

= CU40 + CU60 + CU150

= CU250

Existing accounting pronouncements that require expected value measures

9 Some existing IFRSs and FASB ASC topics require entities to measure assets and liabilities at expected value, or specify a measurement objective, such as fair value, that can be satisfied using expected value techniques. For example:

Pronouncement	Measurement requirements
IFRS 3 and FASB ASC Topic 805 *Business Combinations*	Fair value measurement objective. Some fair values—eg for contingent consideration and contingent liabilities—would be measured using expected value techniques.
FASB ASC Topic 410-20 *Asset Retirement Obligations*	Fair value measurement objective. States that 'an expected present value technique will usually be the only appropriate technique with which to estimate the fair value of … an asset retirement obligation'.
IAS 36 *Impairment of Assets*	Value in use must be estimated using an approach that reflects 'the expected present value of the future cash flows, ie the weighted average of all possible outcomes'.
IAS 37 *Provisions, Contingent Liabilities and Contingent Assets*	Prescribes expected value techniques for measuring the 'best estimate' of a provision involving a large population of items.

Properties

10 The notion of expected value originated in the 17th century, when French mathematicians were trying to solve the problem of 'the unfinished game'.

> Suppose two players place equal bets on who will win the best of seven tosses of a coin. They have to stop the game after three tosses, with one player ahead 2 to 1. How should they equitably divide the winnings?

11 Blaise Pascal solved the problem in a letter to Pierre de Fermat. He worked out that to place an equitable value on each player's stake—a division of the winnings that was fair to both players—it was necessary to map the possible outcomes for the subsequent rounds, to identify the probability of each player being the first to reach four points and then to multiply the winnings by that probability.

12 The origin of expected value reflects one of its main uses in accounting—it enables entities to place a current value on uncertain future cash flows at any point in time during the course of a transaction. Expected value techniques can be used to measure various current values, such as:

- fair value—which uses market estimates of future cash flows.
- value in use—which uses entity-specific estimates of future cash flows.

13 As demonstrated in Pascal's example, the expected value of a distribution is not necessarily one of the outcomes that could occur if the game is completed. For this reason, expected value measures are viewed by some people as lacking predictive qualities, especially for assets or liabilities with only two outcomes and that the entity does not intent to transfer to another party.

14 However, a comparison of the predictive qualities of different measures should consider both the *probability* of the actual cash flows differing from the amounts measured and the *magnitude* of the possible differences. If an asset or liability is measured at expected value rather than one of the possible outcomes, the probability of a gain or loss on settlement can be higher. However, the maximum amount of the gain or loss can be lower.

Example 2: maximum gain or loss on settlement

A liability has two possible outcomes. There is a 40 per cent chance that there will be no outflows, and a 60 per cent chance that the outflows will be CU100. The maximum gain or loss that the entity would recognise when the transaction is settled is:

Measurement basis	Measurement amount CU	Maximum gain or loss on settlement CU
Possible outcome	0	100 loss
	100	100 gain
Expected value	60	40 loss or 60 gain

15 Expected values take into account all possible outcomes. If transactions recur many times, the long-run outcome is the sum of the expected values for each individual transaction. In other words, if an entity measures each asset or liability at its expected value, the gains on realisation or settlement will equal the losses over time.

16 This property does not mean that the expected value of a large portfolio of assets or liabilities existing at a single point in time is the same as the most likely outcome for that portfolio. The expected value differs from the most likely outcome if the outcomes for individual assets or liabilities within the portfolio depend on the same future event.

Example 3: earthquake insurance

An insurer provides annual coverage against earthquakes. On average, an earthquake occurs every ten years.

Even if the insurer sells thousands of policies, the expected value of its portfolio at any single point in time ($1/10^{th}$ of the estimated claims should an earthquake occur) is different from the most likely outcome (nil) for that portfolio.

However, over many years, provided that the estimates are accurate, the actual claims costs will equal the sum of their individual expected values.

17 Expected values are 'linear'. In other words, the expected value of a portfolio of assets or liabilities equals the sum of the expected values of each asset or liability in the portfolio. This relationship is useful in accounting because it avoids the need to specify a unit of account—the sum of the expected values is the same whatever unit of account is chosen. The relationship holds true even if outcomes for the assets or liabilities in the portfolio depend on the same future event.

18 The expected value of an asymmetrical distribution is fairly sensitive to errors or changes in the 'outliers', ie the extreme, relatively unlikely outcomes. This property means that expected value might be a less useful measure than other central estimates if:

(a) the outliers are subject to more estimation uncertainty than other outcomes; or

(b) the outliers are not important to investors.

19 On the other hand, the sensitivity of expected value measures to changes in estimates of outliers is a useful property if the outliers *are* important to investors. This might be the case if the outliers are large potential outflows, such as insurance claims, loan defaults or adverse court judgements. Expected value is the only measure considered in this paper that will always have to be updated when there are material changes in the estimates of the outliers. Such updating can be viewed as particularly important in periods of high and rapidly evolving uncertainty and information asymmetry, such as instability in the financial markets.

Transactions for which expected value might be the most suitable measure

20 Taking the properties described above into account, expected value might be viewed as the most relevant measure of future cash flows:

(a) if the most relevant of an asset or liability is its current value, either in the market or to the entity; or

(b) if the transactions recur frequently enough that the long-run outcomes will tend towards the sum of the expected values. By measuring the transactions at expected value, the entity avoids a systematic long-run gain or loss on settlement; or

(c) if investors place importance on the outliers and changes in estimates of the outliers. This might be the case when the outliers are large potential outflows; or

(d) if the boards would have difficulty specifying the unit of account.

21 Circumstances in which simpler measures might be justified on cost-benefit grounds are considered later in this paper.

Maximum amount that is more likely than not to occur

Description

22 'The maximum amount that is more likely than not to occur' is a second possible measure of uncertain future cash flows. This measure is not used widely in IFRSs or US GAAP at present: US GAAP prescribes it for uncertain tax positions; IFRSs do not prescribe it for any assets or liabilities.

23 'The maximum amount that is more likely than not to occur' has a similar meaning to the statistical term 'median'. The median outcome of a probability distribution is the outcome that separates the higher and lower halves of the distribution—the point at which there is no more than a 50 per cent chance of a higher outcome and no more than a 50 per cent chance of a lower outcome.

Example 1 continued: maximum amount more likely than not to occur

Probability	Cash flow estimate CU
40%	100
30%	200
30%	500

The median outcome is CU200. The chance of a lower outcome is no more than 50 per cent and the chance of a higher outcome is also no more than 50 per cent.

Another way of saying this is that CU200 is the maximum amount that is at least 50 per cent likely (ie more likely than not) to occur:

- the likelihood of cash flows of at least CU500 is only 30 per cent, but
- the likelihood of cash flows of at least CU200 is 30 per cent + 30 per cent = 60 per cent, ie more likely than not.

24 In one particular situation, 'the maximum amount that is more likely than not to occur' is slightly different from the median outcome. The difference arises if the median point is exactly on the border between two outcomes. In such situations, the median is the *midpoint between* the two bordering outcomes, whereas 'the maximum amount that is more likely than not to occur' is the *lower of* the two bordering outcomes.

Example 4: difference between median and 'maximum amount more likely than not to occur'

Suppose the probabilities of the three possible outcomes are different from those in the previous example:

Probability	Cash flow estimate CU
50%	100
30%	200
20%	500

The median point is exactly on the border between the outcome of CU100 and the outcome of CU200. The median is the midpoint between these two outcomes, ie CU150.

More likely than not means *greater than* 50 per cent. The probability of a cash flow of CU200 or above is *exactly* 50 per cent. Consequently, 'the maximum amount that is more likely than not to occur' is CU100, ie the lower of the two outcomes bordering the median.

25 The difference between the median outcome and 'the maximum amount that is more likely than not to occur' is not a major one. 'The maximum amount that is more likely than not to occur' is *always* one of the possible outcomes whereas the median is not. However, the two measures will usually be the same and if they are not the same, they will usually be similar. Consequently, the properties of medians can be used to identify the typical properties of 'the maximum amount that is more likely than not to occur'.

Properties

26 The median outcome is an easily understood and intuitive central estimate for an asset or liability: the probability of a gain on settlement balances the probability of a loss on settlement, and each is no more than 50 per cent.

27 The median has another optimality property that can be viewed as beneficial for financial statements. Measuring a distribution at its median outcome minimises the average of the absolute deviations. In other words, measuring transactions at 'the maximum amount that is more likely than not to occur' minimises the average amounts (ie ignoring the direction) of the gains or losses that arise when the transactions are settled.

Example 1 continued: gains or losses on settlement

The expected value of the future cash outflows is CU250 (see paragraph 8) and the median of the future cash outflows is CU200 (see paragraph 23).

Probability	Outcome CU	Deviation from expected value of CU250	Deviation from median of CU200
40%	100	150 gain	100 gain
30%	200	50 gain	-
30%	500	250 loss	300 loss

If the transaction is measured at expected value, the average absolute gain or loss on settlement is:

(40% x CU150) + (30% x CU50) + (30% x CU250) = CU150

If the transaction is measured at the median outcome, the average absolute gain or loss on settlement is:

(40% x CU100) + (30% x CU0) + (30% x CU300) = CU130

28 The median outcome is insensitive to errors and changes in the outliers, ie the extreme, relatively unlikely outcomes. Consequently, if the outliers are subject to more estimation uncertainty than other possible outcomes, the median outcome can be less susceptible than expected value to estimation error.

Example 1 continued: estimation uncertainty in outliers

Probability	Cash flow estimate CU
40%	100
30%	200
30%	500

Suppose these outcomes—which are unchanged from the previous example—are the estimates of the transaction price for cost-management consultancy services. The transaction price comprises:

- a minimum fixed fee of CU100. The probability of receiving this fee is 100 per cent.
- an additional fixed fee of CU100 for achieving a base level of cost savings. On the basis of many years' experience, the consultant estimates the probability of receiving this additional fee to be 60 per cent.
- a variable fee for further cost savings. This variable fee has no upper limit. The consultant estimates that it will receive this fee only if it manages to achieve specific process efficiencies. It estimates that it has a 30 per cent chance of achieving process efficiencies for which it would receive a fee of CU300. However, this estimate is highly uncertain.

The third slice of the revenue is most susceptible to estimation error. If the consultant has overestimated the probability or cash flows for this third slice, it will have overestimated the expected value of the transaction. However, it will not have overestimated the median outcome.

Indeed, if the probability of receiving the third slice of income is anything less than 50 per cent, the consultant can measure the median outcome without needing to pinpoint the probability or cash flows associated with that slice.

29 Because there is no need to pinpoint the outliers precisely, the median outcome may be easier to measure than expected value. Indeed, if any one outcome is more than 50 per cent likely to occur, that outcome *is* the median outcome—*no* other outcomes need to be quantified. However, in some situations—for example, if there is significant uncertainty about both the amount *and the timing* of the cash flows—the median outcome might not be much simpler to estimate than expected value and similar amounts of application guidance might be required.

30 Any transaction for which the probability of *no* outflows is more than 50 per cent has a median outcome of zero. Consequently, median-based measurements contain an implicit 'probable outflows' recognition threshold.

31 Although median measures are insensitive to errors or changes in the outliers, they can be highly sensitive to errors or changes in the estimates of the central outcomes. They can result in 'cliff-edge' accounting if the median point lies close to the border between two very different outcomes.

Example 5: small changes in more likely outcomes

Two transactions have the same possible outcomes and only small differences in the probabilities of each outcome occurring. The expected values are similar but the median outcomes are very different.

Transaction	Estimates of future cash flows	Median CU	Expected value CU
1	45% chance of CU100 55% chance of CU200	200	155
2	55% chance of CU100 45% chance of CU200	100	145

32 Medians do not have same 'linearity' as expected values. The median outcome for a portfolio of assets or liabilities does not necessarily equal the sum of the median outcomes for each asset or liability in the portfolio. Thus, if an accounting standard specifies that an asset or a liability should be measured by reference to 'the maximum amount that is more likely than not to occur', it might also need to specify the unit of account. (The FASB codification provides general guidance for choosing a unit of account for tax positions.)

Example 6: dependence of median outcome on unit of account

An asset has two possible outcomes:

Outcome	Cash inflows CU	Probability
Bad	100	60%
Good	200	40%

If there are two identical assets there are three possible outcomes:

Outcome for two assets	Cash inflows CU	Probability
2 bad	200	36%
I bad and 1 good	300	48%
2 good	400	16%

The median outcome for the two assets accounted for together is CU300. This is not the same as the sum of the median outcomes for each asset accounted for individually (CU100 + CU100 = CU200).

33 The median outcome is not the long-run average outcome. Consequently, measuring transactions that recur frequently at their median outcomes can lead to systematic long-run gains or losses on settlement.

34 If a distribution is *perfectly* symmetrical, the median outcome and expected value are the same. The two measures remain similar for continuous distributions that are *approximately* symmetrical. However, as the example in paragraph 31 shows, if there are few outcomes, even minor asymmetry can lead to the median outcome being significantly different from expected value.

Transactions for which 'the maximum amount that is more likely than not to occur' might be the most suitable measure

35 Taking the properties described above into account, 'the maximum amount that is more likely than not to occur' might be viewed as the most useful measure of a transaction:

(a) if the transactions do not recur frequently enough for their average outcomes to approximate to the long-run average. In most reporting periods, there will a net gain or loss on settlement. Consequently, it is more important to minimise the average gains and losses recognised on individual transactions; or

(b) if investors do not place importance on the outliers. This might be the case if the outliers are:

  (i) unlikely future inflows that are subject to significant measurement uncertainty; or

  (ii) unlikely outflows that are within the control of the entity and will occur only if they benefit the entity (for example if a lessee unexpectedly extends a lease term); or

(c) if the outliers are subject to much greater estimation uncertainty than the other possible outcomes. In such situations, 'the maximum amount that is more likely than not to occur' is less susceptible than expected value to estimation error.

36 For some other transactions, 'the maximum amount that is more likely than not to occur' might be easier to measure, and not significantly less useful, than expected value. In such circumstances, it might be justified on cost-benefit grounds.

Most likely outcome

Description

37 The most likely outcome of future cash flows is the 'mode' of the distribution, ie:

(a) the individual outcome in a discrete distribution that is more likely to occur than any other individual outcome; or

(b) the highest point in the probability curve for a continuous distribution.

38 No IFRSs or US pronouncements clearly require entities to measure any asset or liability at the most likely outcome. Some pronouncements require entities to measure the 'best estimate' of an asset or a liability, and best estimate is often interpreted to mean most likely outcome. However, as explained in paragraph 6, the term is open to other interpretations.

Properties

39 The most likely outcome is simple to understand and easy to measure. Although one must identify all the possible outcomes in order to pick out the most likely one, there is no need to quantify the less probable outcomes or calculate probability-weighted averages (for expected value) or cumulative probabilities (for medians).

40 Some people describe the most likely outcome as having predictive qualities because it minimises the likelihood of being 'wrong', ie the likelihood of a gain or loss on settlement. However, although the *probability* of a gain or loss occurring can be lower than it would be for transactions measured at the median outcome or expected value, the *magnitude* of the average and maximum gains and losses can be higher.

Example 1 continued: most likely outcome

Probability	Cash flow estimate CU
40%	100
30%	200
30%	500

Transaction measured at	Probability of gain or loss on settlement	Maximum gain or loss on settlement	Average absolute gain or loss on settlement[1]
Expected value CU250	100%	CU250 loss	CU150
Median CU200	70%	CU300 loss	CU130
Most likely outcome CU100	**60%**	**CU400 loss**	**CU150**

NB The differences between the maximum gains or losses on settlement could be much more pronounced when distributions are more skewed than this one.

41 A distribution with more than one peak might have more than one 'most likely' outcome. Furthermore, for continuous probability distributions, the most likely outcome can be highly sensitive to the width of the measurement interval. As measurement intervals become wider:

(a) estimates of expected value and median outcomes become less precise; but

(b) estimates of the most likely outcome can change *completely*.

[1] From example following paragraph 27

Example 1 continued: effects of changing interval width

Suppose the example we have been considering does not have three discrete outcomes. Instead, there is a more continuous distribution of outcomes grouped into CU100 interval widths.

Cash flows		Probability
Interval CU	Midpoint CU	
50-150	100	40%
150-250	200	30%
450-550	500	30%

Suppose the same outcomes, when grouped in narrower intervals of CU50, are as follows:

Interval CU	Midpoint CU	Probability
50-100	75	20%
100–150	125	20%
150–200	175	15%
200–250	225	15%
450–500	475	30%

The table below shows how the expected value, median and most likely outcome change with interval width. The expected value and median are similar, but the most likely outcome changes completely:

Measure	Interval of CU100 CU	Interval of CU50 CU
Expected value	250 ± 50	242 ± 25
Median	200 ± 50	175 ± 25
Most likely outcome	**100** ± 50	**475** ± 25

42 The sensitivity of the most likely outcome to interval width could be a significant practical issue. The boards would need to consider whether they could develop rules on measurement intervals. These rules would essentially be arbitrary, so they could be difficult to develop and difficult to apply without extensive guidance.

43 Like the median outcome, the most likely outcome:

(a) is non-linear—the amount recognised for a portfolio would depend on the unit of account.

(b) does not equal the long-run average outcome, so it can lead to systematic gains or losses when applied to transactions that recur frequently.

(c) can be highly sensitive to errors or changes in the estimates of the probabilities of the two most likely outcomes. Measuring a transaction at its most likely outcome can result in 'cliff-edge' accounting if there are two or more peaks of similar height in the probability distribution.

(d) includes an implicit recognition threshold. If there are more than two possible outcomes, the recognition threshold that is implicit in a most likely outcome measure could be *higher* than the 50 per cent threshold that is implicit in a median measure.

Suppose that the individually most likely outcome for a transaction is that there will be no outflows. This likelihood of this outcome is 40 per cent. The entity would not recognise a liability despite there being a 60 per cent probability of other outcomes, ie *some* outflows.

44 For some distributions, the most likely outcome is the same as the expected value or median outcome:

(a) if a distribution is symmetrical about a single peak, the most likely outcome is also the median outcome and expected value.

(b) if the most likely outcome is more than 50 per cent likely to occur, it is also the median outcome.

Transactions for which the most likely outcome might be the most suitable measure

45 Given the properties described above, the most likely outcome could be viewed as a poor central estimate of distributions that are skewed or have more then one peak.

46 However, the most likely outcome can be easier to estimate than either expected value or 'the maximum amount that is more likely than not to occur'. Consequently, it could be a reasonable proxy for either of those measures when it can be assumed that the distribution is approximately symmetrical about a single most likely outcome.

Other possible measures

47 Other measures for assets or liabilities that are mentioned in accounting literature include:

(a) the minimum or maximum amount in the range of possible outcomes;

(b) the midpoint of the range of possible outcomes; and

(c) the possible outcome nearest to expected value.

Each of these is discussed briefly below.

Minimum or maximum amount in range of possible outcomes

48 One alternative measure for an asset or a liability is the minimum or maximum amount in the range of possible outcomes. FASB ASC section 450-20-30 requires entities to measure loss contingencies at the minimum amount in the range of possible outcomes if 'no amount within the range is a better estimate than any other amount'.

49 Neither the minimum nor the maximum amount is a central estimate of an asset or a liability: the minimum amount is likely to understate the asset or liability and the maximum amount is likely to overstate it.

50 However, the minimum amount in the range might be the most useful measure available if all of the more central estimates are too uncertain to be relevant, ie if there is an extremely high degree of uncertainty about both the upper limit of the range *and* the probabilities of the various outcomes within the range.

Midpoint of range of possible outcomes

51 An alternative measure is the midpoint of the range of possible outcomes.

Example 1 continued: midpoint of range of possible outcomes

Probability	Cash flow estimate CU
40%	100
30%	200
30%	500

The outcomes range from CU100 to CU500. The midpoint of this range is CU300.

52 The midpoint of the range of possible outcomes takes no account of the probabilities of different outcomes. Consequently, it could be viewed as a poor central estimate of skewed distributions.

53 However, the midpoint of the range of possible outcomes avoids the bias inherent in measures based on the minimum or maximum amount in the range. Furthermore, it can be simpler to estimate than expected value or 'the maximum amount that is more likely than not to occur'. It could be a reasonable estimate of either of those amounts:

(a) when it can be assumed that the distribution of cash flows is approximately symmetrical about the midpoint of the range; or

(b) in the absence of *any* evidence of the probabilities of the various outcomes within the range.

Possible outcome nearest to expected value

54 Finally, an asset or a liability could be measured at 'the possible outcome nearest to expected value'.

Example 1 continued: possible outcome nearest to expected value

Probability	Cash flow estimate CU
40%	100
30%	200
30%	500

The expected value (see paragraph 8) is CU250. The possible outcome nearest to CU250 is the middle of the three outcomes, ie CU200.

55 Deloitte advises entities to use this measure for single liabilities within the scope of IAS 37:

> … when the provision relates to a single event, or a small number of events, expected value is not a valid technique.[2]
>
> Generally, where the most likely outcome is close to the expected value, it will be appropriate to provide for the most likely outcome, since expected value provides evidence of the probable outflow of benefits.
>
> Where the most likely outcome and the expected value are not close together, it will often be appropriate to provide for whichever possible outcome is nearest to the expected value.[3] *(Footnotes added)*

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2 This statement is Deloitte's interpretation of unclear guidance in paragraph 40 of IAS 37. Other accounting firms have published different interpretations.

3 Deloitte *iGAAP 2011*, chapter 11, section 4.2.2

56 If an asset or a liability has many possible outcomes in a near-continuous distribution, the 'possible outcome nearest to the expected value' is likely to be very near to the expected value. In other words, the asset or liability is measured at an amount that has similar properties to expected value.

57 In contrast, if an asset or a liability has only two or three possible outcomes, the 'possible outcome that is nearest to the expected value' might be quite different from expected value. If there are two outcomes, it is the same as the median outcome:

Example 2 continued: possible outcome nearest to expected value

Probability	Cash flow estimate CU
40%	0
60%	100

Expected value = CU60. Median = CU100.

Possible outcome nearest to expected value = CU100 = median.

58 The 'possible outcome nearest to the expected value' could be more difficult to describe or estimate than any of the other measures in this paper. It is not used widely as a statistical measure and, as illustrated by the examples above, its properties vary depending on the number of possible outcomes. The IASB staff have not identified any circumstances in which this measure might be seen as a more useful central estimate of a distribution than all of the more familiar alternatives (ie mean, median and mode).