

## STAFF PAPER

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**Measurement****What does this section cover?**

This section discusses what concepts should guide the IASB when it selects measurements in a new or revised IFRS.

**Why is this section important? What problems will this section help address?**

The existing Conceptual Framework provides very little guidance on measurement methods and when particular measurement methods should be used.

**What are the IASB's recommendations?**

The IASB proposes the following three measurement principles:

*Principle 1* – The relevance of information provided by a particular measurement method depends on how it affects the statement of financial position, the statement(s) of profit or loss and comprehensive income and, if applicable, the statement of changes in equity and the notes to the financial statements.

*Principle 2* – The cost of a particular measurement must be justified by the benefits of reporting that information to existing and potential investors, lenders and other creditors.

*Principle 3* – The number of different measures used should be the minimum necessary to provide relevant information. Unnecessary changes in measurement methods should be avoided, and necessary changes should be clearly explained.

The IASB believe that the most relevant measurement method will depend upon:

- (a) The way in which an asset contributes to future cash flows;
- (b) How the entity will fulfil or settle the liability.

1. Financial statements include descriptions and amounts for items that fit the definitions of elements of financial statements and that meet the recognition criteria. *Measurement*, as the term is used in this [draft] discussion paper, is the process of determining which amounts to present on the face of each financial statement (and in some case in notes to financial statements). The term *measures* refers to those amounts presented or disclosed.
2. This section:
  - (a) describes three measurement principles derived from the objective of financial reporting and qualitative characteristics of useful financial information (paragraphs 5– 23).
  - (b) describes and discusses the following three categories of measurement methods:
    - (i) cost (paragraphs 24 –27);
    - (ii) fair value and other current prices (paragraphs 28 – 33); and
    - (iii) other cash-flow based measures (paragraphs 34 – 37).
  - (c) discusses how to identify an appropriate measurement method (paragraphs 38 –107).
  - (d) describes cash flow based measurements other than fair value (paragraphs 108 – 142).
3. This chapter does not specifically discuss measurement of equity instruments issued, although the factors considered in the discussion of initial measurement at

cost or fair value (paragraphs 40-60) would be applicable to initial measurement of equity instruments. Section 5 of this discussion paper on the distinction between liabilities and equity instruments discusses subsequent updating of measures of equity instruments.

4. This discussion paper also does not discuss the equity method of accounting or the translation of amounts denominated in foreign currency because the IASB believes that these issues would be best dealt with in a project to revise or replace existing IFRSs on these topics.

### Measurement principles

5. To achieve the objective of financial reporting, measurement should contribute to faithfully representing relevant information about recognised assets, liabilities income and expense, and about how efficiently and effectively the entity's management and governing board have discharged their responsibilities to use the entity's resources.
6. The IASB proposes to include in a revised Conceptual Framework the following three measurement principles. These principles are derived from the objective of financial reporting and the qualitative characteristics of useful financial information in Chapters 1 and 3 of the Conceptual Framework:
  - (a) *Principle 1*: The relevance of information provided by a particular measurement method depends on how it affects the statement of financial position, the statement(s) of profit or loss and comprehensive income and if applicable, the statement of changes in equity and the notes to the financial statements (see paragraphs 8-11).
  - (b) *Principle 2*: The cost of a particular measurement must be justified by the benefits of reporting that information to existing and potential investors, lenders, and other creditors (see paragraphs 12-16).
  - (c) *Principle 3*: The number of different measures used should be the minimum necessary to provide relevant information. Unnecessary changes in measurement methods should be avoided, and necessary changes should be clearly explained (see paragraphs 17-22).

7. The following paragraphs discuss these proposed principles in more detail.

*Principle 1*

8. Principle 1 is derived from the discussion of faithful representation in paragraph QC13 (Chapter 3) of the Conceptual Framework, which states:

A complete depiction includes all information necessary for a user to understand the phenomenon being depicted, including all necessary descriptions and explanations.

“All information necessary...to understand the phenomenon being depicted” includes information from the statement of financial position, the statement of comprehensive income, the statement of cash flows (which usually is unaffected by differences in measures), and the notes to the financial statements. Consequently, the IASB has to consider all of those in choosing appropriate measures.

9. Many transactions are settled in cash or short term accounts receivable. An entity whose only activities involve such transactions has few measurement issues. However, measurement decisions become more important if an entity engages in other, more complicated activities.
10. The statement of financial position portrays a reporting entity’s resources and obligations. The statement(s) of profit or loss and comprehensive income portray(s) changes in the entity’s resources and obligations (other than those resulting from contributions of equity, distributions of equity and transactions that are not capable of changing equity). Each statement provides relevant information, but at times the choice of a measure may depend more heavily on one statement rather than the other.
11. Proponents of fair value tend to focus on the statement of financial position, and proponents of cost-based measures tend to focus on profit and loss. However, both the statement of financial position and the statement of comprehensive income provide relevant information for users. Selecting measurements by considering either the statement of financial position alone or the statement of comprehensive income alone usually will not produce the most relevant information for investing and credit decisions.

*Principle 2*

12. Principle 2 is derived from the cost constraint as described in paragraph QC35 (Chapter 3) of the Conceptual Framework. Cost depends significantly on the availability of information. Many measurements are estimates, and the information needed for inputs to those estimates may not be freely available. Costs will be incurred in gathering and processing the information. In general, the costs associated with a particular measurement increase as the subjectivity associated with the measurement increases.
13. At the same time, even if a measurement is potentially the most relevant, the benefit to users declines as it becomes more subjective (and thus more costly to produce). Unfortunately, a measurement with no subjectivity may not be relevant. For example, the market price of a derivative instrument with no fixed cash flows or an asset that is certain to be sold is clearly the most relevant measure. However, if the market price is unknown and there is very little if any information available, a highly uncertain estimate will be required.
14. In such a case, the cost of the estimate is likely to be high and the benefit (relevance) is likely to be low. The cost of a different measure, for example, the transaction price to acquire the derivative, may be very low and the amount may be certain. However, its benefit (relevance) is zero or nearly zero because the cost provides little or no information about the ultimate cash flow.
15. Where this is the case, the IASB will need to balance the costs of providing the most relevant information (in the example above a market price) with the benefit to users (which, if the estimate is very subjective, may not be great). The IASB will look for different measures when the cost of a particular measure becomes too high. However, in the example in paragraph 13, the benefit of using a cost based measurement may not be noticeably greater than not recognising the derivative at all.
16. Some argue that when the subjectivity of a particular measurement is very high, that measurement cannot be a faithful representation of the item it depicts. However, a highly uncertain estimate will be faithfully represented if it is properly described (not as a market price but as a highly uncertain estimate of a market

price). Thus the factor the IASB will need to consider for a highly uncertain measure is whether that measure is relevant.

### *Principle 3*

17. Principle 3 is derived from the enhancing qualitative characteristic of understandability (paragraphs QC 30-32).
18. The first part of principle 3 states that the number of different measures used should be the minimum necessary to provide relevant information. Some have argued that everything in a set of financial statements should be measured using the same method or as close to the same method as is feasible, but this principle is not intended to go that far. It merely reflects the fact that users need to be able to understand the methods used, and the more methods that are permitted or required, the harder it is for users to understand them and to understand how they interact to depict the entity's financial position and financial performance. In addition, totals and sub-totals of items may have little or no inherent meaning if their components are measured on different bases.
19. This discussion paper groups measurement methods into three categories:
  - (a) cost-based measures, which include amortised cost, depreciated cost, and in most cases involve adjustments for impairment of assets or inadequacy of liabilities – these are generally not hard to understand;
  - (b) fair value and other current market prices – IFRS 13 *Fair value Measurement* should ensure that measurements labelled as fair value are applied consistently, and this should make it easier for users to understand these measurements; and
  - (c) other measures based on estimated cash flows. There are several measures based on estimated cash flows in use today. Narrowing the number of methods currently required and avoiding further proliferation could make financial statements more understandable. The discussion of cash-flow-based measures, which begins in paragraph 108, describes the factors that need to be considered in developing a measurement

based on estimated cash flows and discusses how the number of possible measurements could be limited.

20. The second part of principle 3 focuses on avoiding unnecessary measurement changes. The most obvious implication is to make subsequent measurement of an item the same as, or at least consistent with, its initial measurement. To do otherwise would result in recognising income or expense that has nothing to do with transactions or changes in economic conditions. Similarly, if an entity were given the option to change a measurement method at any time, that entity could manage earnings by choosing to recognise a gain or loss.
21. Principle 3 would not preclude cost-based measures such as depreciated cost with adjustments for impairments. Impairment adjustments result from economic changes, rather than from changes in the measurement method, and therefore provide relevant and understandable information.
22. Neither would principle 3 preclude changing measurement requirements to improve relevance, but the third part of principle 3 would lead to making the effects of those changes transparent.

### **Measurement methods**

23. This [draft] discussion paper groups measurement methods into three general categories:
  - (a) cost-based measures;
  - (b) fair value and other current market prices; and
  - (c) other measures based on estimated cash flows.

Each of these methods is discussed in the following paragraphs.

### ***Cost-based measures***

24. The definition of cost in the IASB's *Glossary of terms*, IAS 16 *Property, Plant and Equipment*, IAS 38 *Intangible Assets* and IAS 40 *Investment Property* is:

the amount of cash or cash equivalents paid or the fair value of the other consideration given to acquire an asset at the time of its acquisition or construction, or, when applicable, the amount attributed to that asset when initially recognised in accordance with the specific requirements of other IFRSs, eg IFRS 2.

If there were an analogous definition for a liability, it would refer to cash or cash equivalents received or fair value of other consideration received at the time a liability is incurred.

25. IAS 2 *Inventories* states that cost includes costs of purchase, costs of conversion and all other costs incurred in bringing inventories to their present location and condition. IAS 16 also specifies what is to be included in cost.
26. The initial measures at cost of assets and liabilities are adjusted over time in a variety of ways. The most common reasons are:
- (a) depreciation or amortisation;
  - (b) accrual of interest, accretion of discount, or amortisation of premium;
  - (c) impairment of assets or increases to the carrying amount of liabilities that have become more onerous.
27. The term cost-based measures is used in this [draft] discussion paper to refer to amortised cost as used for some financial assets and liabilities, cost less accumulated depreciation as used for many physical assets, and other measures commonly referred to as cost or historic cost. However, it should be noted that the amortised cost measurement used for financial assets and financial liabilities could equally well be described as a cash-flow-based measurement because it involves updated estimates of cash flows discounted using a locked in discount rate.

### ***Fair value and other current market prices***

28. IFRS 13 defines fair value 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’.



29. The phrase *orderly transaction* implies that neither participant is desperate or otherwise has an unusually weak bargaining position because it is forced to sell or buy quickly because of financial distress or other factors.

30. Paragraph B13 of IFRS 13 states that:

A fair value measurement of an asset or a liability using a present value technique captures all of the following elements from the perspective of market participants at the measurement date:

- (a) An estimate of future cash flows for the asset or liability being measured.
- (b) Expectations about possible variations in the amount and timing of the cash flows representing the uncertainty inherent in the cash flows.
- (c) The time value of money, represented by the rate on risk-free monetary assets that have maturity dates or durations that coincide with the period covered by the cash flows and pose neither uncertainty in timing nor risk of default to the holder (ie a risk-free interest rate).
- (d) The price for bearing the uncertainty inherent in the cash flows (ie a risk premium).
- (e) Other factors that market participants would take into account in the circumstances.
- (f) For a liability, the non-performance risk relating to that liability, including the entity's (ie the obligor's) own credit risk.

31. The factors listed in paragraph 30 are reflected in market prices, but if an entity must make an estimate of fair value using inputs other than observed prices, they must be considered explicitly.

32. Fair value is not the only market price. There are other market prices that are not included in the definition of fair value. Some existing standards also use fair value less cost to sell for impairment adjustments or fair value plus transaction costs for initial measurement of assets (minus transaction costs for initial measurement of liabilities). In addition, market prices other than fair value can be derived if different markets are specified. This would be the case if an asset was

acquired in one market and sold in another market. For example, some entities originate loans in principal to principal transactions and sell them in a secondary market at a different price.

33. For some items with different entry or exit markets, the IASB might consider using the price an entity would pay to acquire an asset or receive to assume or incur a liability. For example, that could make sense as an initial measurement if an entity acquires an asset for no identifiable cost, or for a cost known to differ from the market price.

***Other measurement methods based on estimated future cash flows***

34. A few measurement methods used in existing IFRSs are neither fair value nor cost-based but are based on estimates of future cash flows. In current IFRSs, these other measurement methods are used for:

- (a) Impairment of financial assets, lease receivables, and lease liabilities carried at amortised cost;
- (b) Impairment of non-financial assets;
- (c) Net realisable value of inventories;
- (d) Provisions (liabilities of uncertain timing or amount);
- (e) Liabilities for post-employment benefits;
- (f) Deferred tax assets and liabilities.

The methods used for those measurements are specified in the individual IFRSs that require them. In addition, the exposure draft on accounting for insurance contracts is expected to propose a cash-flow-based measurement method that is not fair value.

35. Those other cash-flow-based measures are used when there is no cost or proceeds and fair value is considered not appropriate or not feasible (insurance contracts and items (d), (e) and (f)). They are also used for adjustments when the cost-based carrying value of an asset is not recoverable or the cost-based carrying amount of a liability is not adequate (items (a), (b), and (c)).

36. Principle 3 suggests limiting the number of measurement methods that are available. That would imply not creating new methods and reducing the number of existing methods if possible.
37. The factors that go into constructing other cash-flow-based measurements are described and discussed beginning in paragraph 108.

### **Identifying an appropriate measurement method**

38. The following paragraphs, which address identifying appropriate measurement methods, are organised as follows:
  - (a) Initial measurement at cost or fair value (paragraphs 40-60);
  - (b) Subsequent measurement of assets (paragraphs 61-94);
  - (c) Subsequent measurement of liabilities with stated terms (paragraphs 95-107);
  - (d) Cash-flow-based measurements other than fair value (which includes measurement of liabilities with no specified terms) (paragraphs 108-142).
39. All assets are capable of contributing in some way to future net inflows of cash or other items of value, and all liabilities are capable of requiring future net outflows of cash, services, or other items of value. For simplicity in terminology, the remainder of this section refers to future cash flows even though in some cases, the flows of value will be in a form other than cash.

### ***Initial measurement at cost or fair value***

40. There are three possible bases for initial measurement of assets and liabilities:
  - (a) Cost (subject to a recoverability or adequacy test);
  - (b) Fair value;
  - (c) Other cash-flow-based measures.
41. Nearly all assets are initially measured at fair value, cost or deemed cost. Principle 3 indicates that to avoid recognising non-economic income or expense,

which can be misleading or confusing, initial measurement and subsequent measurement should be on the same basis. The one situation in which that might not be appropriate involves hedge accounting, which is discussed in paragraph 89.

42. Initial measurement of assets (other than cash and most accounts receivable) acquired in exchange transactions is determined by the fair value of the consideration given, and the amount can be described as either cost or fair value. As discussed in paragraph 46, the most appropriate description of that amount would be the description used for subsequent measurement.
43. Assets and liabilities may be recognised as a result of:
- (a) Exchange transactions (paragraphs 44-54);
  - (b) Non-exchange transactions (paragraphs 55-57);
  - (c) Internal construction, other transactions, and other events (paragraphs 58-60).

#### *Exchange transactions*

44. Assets recognised as a result of exchanges normally raise few significant initial measurement issues.
45. In an exchange transaction:
- (a) an asset is acquired in exchange for cash, a promise to pay cash or another asset;
  - (b) services are acquired in exchange for cash, a promise to pay cash or another asset;
  - (c) a liability or equity instrument is issued in exchange for cash, a promise to pay cash or another asset.
46. If an exchange transaction is negotiated by unrelated parties and neither is in financial distress or otherwise under duress, the consideration given and received normally can be considered to be of equal value. In those cases, the initial measure of an asset or liability could be described as cost or as fair value because the two are the same. The appropriate way to label it would be to match the label used for the subsequent measure. If the subsequent measure will be fair value,

describing the initial measure as cost could be confusing, and the reverse also could be true.

47. However, the cost of an asset or liability determined according to the fair value of the consideration given or received can differ from its fair value at the recognition date in the following circumstances:
- (a) situations identified by paragraph B4 of IFRS 13:
    - (i) if the unit of account for the transaction and for determining fair value differ (for example, a group of assets is acquired for a price different from the sum of the prices of the individual assets);
    - (ii) if the transaction takes place in a market other than the principal or most advantageous market.
  - (b) if an IFRS requires cost to include amounts not included in fair value or to exclude amounts included in fair value, for example, transaction costs.
  - (c) if an asset is constructed internally, in which case the accumulated cost will equal fair value only by coincidence.

### **Exchanges of items with different values**

48. Occasionally, two items of different value are exchanged, presumably because the transaction price is affected by other relationships between the parties or by financial distress or other duress of one of the parties<sup>1</sup>.
49. In a strict sense, the ‘cost’ of the asset acquired or the proceeds from the liability incurred could be considered equal to the fair value of the consideration given or received. However, there are problems with that approach:
- (a) It could result in failure to recognise a realised economic loss or gain (for example an impairment loss or a gain arising from a bargain purchase). In addition, if an asset were initially measured at more than its recoverable amount, an impairment loss would be recognised at the next measurement date. Similarly, if a liability were measured initially

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<sup>1</sup> IFRS 13, paragraph B4

at less than the present value of the resulting cash flows, a loss would be recognised at the next measurement date. That could make it appear that the loss occurred after the transaction instead of as a part of the transaction, which could mislead users; or

- (b) It could result in failure to recognise an unstated aspect of the transaction (for an example, an obligation to provide services, a capital contribution or distribution, or a payment for past services).

50. Consequently, rather than measuring assets or liabilities arising in an unequal exchange at the fair value of the consideration given or received an entity could:

- (a) Measure the asset acquired or liability incurred at fair value, and recognise the difference as follows:

- (i) if the transaction is with equity investors (or other entities within a consolidated group), recognise a contribution to equity or distribution from equity;
- (ii) if unstated aspects of the transaction can be identified, account for them;
- (iii) in other cases recognise a gain or loss on the transaction.

- (b) If the consideration given or received is an entity's own equity instrument, measure that equity instrument at the fair value of the asset received or given or the fair value of the liability extinguished or incurred.

51. The approach in paragraph 50(a)(i) seems to reflect what actually occurred in the transaction. It is reasonable to assume that a transaction with an equity investor (or with an entity that is part of the same controlled group) involves contributions to equity or distributions of equity.

52. The approach in paragraph 50(a)(ii) is reasonable if unstated aspects can be identified. That identification (or verification that there are no other aspects) may cause problems.

53. The approach in paragraph 50(a)(iii) is counter to the traditional notion that there should be no 'Day 1' gains or losses on acquired assets or incurred liabilities. Exchanges that involve unequal consideration are not common, and apparent

gains or losses are suspect. However, they can occur if one party is under duress and is desperate to transact. If that happens, a real gain or loss has been realised on the transaction and reporting it seems to make sense.

54. The approach in paragraph 50(b) in effect puts the gain or loss in equity, which is consistent with the long-standing notion that an entity cannot experience gains or losses on its own equity instruments.

#### *Non-exchange transactions*

55. Assets and liabilities may be recognised for reasons other than an exchange of consideration of equal value in the following situations:
- (a) an asset is acquired or a liability is incurred for no consideration (such as an unconditional gift or grant);
  - (b) an asset or liability arises from an event other than a transaction (for example, a lawsuit).
56. If an entity acquires an asset or incurs a liability for either of the two reasons above, the item could be measured at zero, which is indistinguishable from non-recognition. IAS 20 *Accounting for Government grants and disclosure of government assistance* permits that in some cases. However, if the item is to be recognised, it must be measured at an amount other than zero. [Principle 3](#) says that unnecessary changes in measurement methods should be avoided. This suggests that the initial measurement basis should be the same as the subsequent measurement basis. (However, this does not rule out using fair value to establish deemed cost if the subsequent measure is cost-based.)
57. Deferred tax assets and liabilities and a few other assets and liabilities recognised because of events other than exchanges of equal consideration are measured using cash-flow-based estimates other than estimates of fair value. Those measures are discussed in more detail beginning in paragraph 108.

#### *Internally constructed assets, other transactions, and other events*

58. [Principle 3](#) suggests that an entity should measure an internally constructed asset (an asset constructed by the entity itself) on the same basis as will be used for subsequent measurement. In other words:

- (a) At cost if the subsequent measure of the asset will be based on cost. In this case, fair value should not be used as deemed cost. (If the completed asset were measured initially at cost, the entity would recognise a gain when it completes the asset, and that gain would, in effect, reverse subsequently as the entity depreciates the asset.)
  - (b) At fair value if the subsequent measure of the asset will be fair value.
  - (c) If the asset will be measured subsequently on a basis that is not fair value and is not based on cost, on that basis.
59. The opposing view would be that a completed asset is different from an asset under construction. Measuring the asset on its completion date at the price for which it could have been acquired (or sold) would provide information about the efficiency with which the asset was constructed. However, determining that price may not be easy for unique or other custom-made assets.

### **Deemed cost**

60. The amount attributed to an asset when initially recognised in accordance with the specific requirements of some IFRSs is deemed to be cost (according to the definition quoted in paragraph 24). That condition exists if:
- (a) no consideration is given or the fair value of the consideration given differs from the fair value of the asset acquired;
  - (b) an entity issues its own equity instruments to acquire an asset that will not be subsequently measured at fair value;
  - (c) an asset is transferred into a category that requires cost as initial measurement from a category that requires another measure, for example if:
    - (i) a financial asset is reclassified because of a change in business model under IFRS 9 *Financial Instruments* (the fair value on the date of the reclassification is deemed to be cost);
    - (ii) agricultural produce is harvested (prior to harvest, IAS 41 *Biological Assets* requires measurement at fair value less



costs to sell, and at harvest, that basis is deemed to be cost under IAS 2 *Inventories*).

- (d) if determining cost is unduly onerous or impracticable, for example, in some situations when IFRS 1 *First-time adoption of International Financial Reporting Standards* permits an entity to use another amount as deemed cost;
- (e) if hedge accounting for an asset is discontinued after it has been adjusted for changes in value due to the hedged risk.

The amount used as cost in those cases is referred to as ‘deemed cost’ in this [draft] discussion paper.

### ***Subsequent measurement of assets***

- 61. The IASB could decide to measure all assets on the same basis. For example, the IASB could decide to:
  - (a) Measure all assets at fair value. If they are not sold, the income or expense would indicate whether management has used resources more or less efficiently and effectively than market participants expected.
  - (b) Measure all assets at cost-based amounts. If they are sold, the effects of the decision to sell would be immediately apparent. Similar assets would be carried at different amounts if acquired at different market prices.
- 62. Measuring all assets on the same basis would result in all amounts in the financial statements having the same meaning, which would make totals and subtotals more meaningful than those in financial statements prepared under existing requirements.
- 63. However, there are problems with this approach:
  - (a) Measuring all assets on a cost basis may not provide relevant information to the users of financial statements which would be contrary to the objective of measurement described in paragraph 5 of this section. For example, measuring a derivative asset using a cost

based measure is unlikely to provide relevant information about that asset.

- (b) Obtaining fair value measurements can be costly and subjective. Consequently, the costs associated with measuring all assets at fair value may not be justified by the benefits to users in all cases. This means that requiring fair value measurement of all assets would be contrary to [principle 2](#) in paragraph 6. In addition, some users may consider fair value information secondary to information about past cash flow and income and expense.

- 64. Because of these problems this [draft] discussion paper does not recommend measuring all assets on the same basis.
- 65. [Principle 1](#) states that the relevance of a measure depends on its effects on the entity's statement of financial position and its statement of comprehensive income (especially profit and loss). The effects that are most relevant for a specific type of asset depend on the way investors, creditors, and other lenders are likely to assess that type of asset's contribution to future net inflows of cash or other items of economic value. Consequently, this [draft] discussion paper recommends that the measurement method used for a particular asset should be based on how it contributes to future cash flows.
- 66. Four general ways an asset contributes to future cash flows are:
  - (a) Using it in business operations to generate revenues or income (paragraphs 69-77);
  - (b) Selling it (paragraphs 78-82);
  - (c) Holding it for collection according to terms (paragraphs 83-89);
  - (d) Charging others for rights to use it (paragraphs 90-94).
- 67. The way an asset ultimately will contribute to cash flows will often not be certain. For most there are choices, and choices may change. The IASB has to decide how to deal with that uncertainty. Some alternatives are:
  - (a) Measure based on how the value of the asset is likely to be realised as indicated by current activities (business model), plans, strategies,

declared intent, or past practices. That measure is most likely to indicate the actual cash flows, but it allows for measuring similar or identical assets differently, which some view as a disadvantage.

- (b) Measure based on most profitable means of contributing. Shows the cost of management's decision to depart from optimal contribution method but could lead users to expect cash flows that will not occur. Similar or identical assets would be measured the same way.

68. Alternative 67(a) is closest to what current IFRSs require. Both alternatives, (a) and (b), would require the IASB to consider how an asset will contribute to future cash flows. Therefore, the following discussion about how assets contribute to future cash flows is important for those two alternatives.

#### *Using assets*

69. Some assets contribute to future cash flows by being used in:
- (a) purchasing, producing, marketing, or delivering assets the entity sells, collects, or charges others to use (or services the entity sells).
  - (b) administration, treasury or any other function necessary to keep the entity operating.

As discussed in paragraphs 79 and 80, this [draft] discussion paper treats inventories as assets used by the entity, even though they will be sold.

70. Prospects for future cash flows from assets used by the entity can be assessed based on information about comprehensive income and cash flows. The carrying amounts of the assets and more importantly, the unrealised gains and losses due to asset price changes may not be useful unless they indicate impairments or recoveries. Therefore, cost-based measures are normally used because they are simpler and often less expensive to provide than current measures. In addition, some argue that for assets of this type cost-based measures provide information that is more understandable and relevant than fair value.
71. The costs of operating, maintaining, and repairing assets used by the entity are reported as expenses. Cost-based measures also produce depreciation or

amortisation expense and impairment losses and recoveries, which signal that an asset's capacity to generate cash flows has changed.

72. However, there are criticisms of cost-based measures.
- (a) Recognition of impairment losses and recoveries tends to lag changes in capacity.
  - (b) Choices of depreciation methods are available, and some track declines in capacity to generate cash flows more closely than others.
  - (c) If an asset's cash flow capacity greatly exceeds its carrying amount, capacity could decline materially before the carrying value is no longer recoverable and an impairment loss is recognised.
  - (d) Impairment losses are not neutral. Assets' carrying amounts are not increased if they are exceeded by cash flow capacity.
73. Some users have said that depreciation and amortisation expense is ignored because it does not directly affect cash flows. Using depreciation methods for some real estate is especially troublesome because the asset may be appreciating as its carrying amount is reduced.
74. An alternative might be to use a measure of assets used by the entity that reflects their capacity to contribute to future cash flows.
75. For example, an approach known as deprival value (also called 'value to the business') relies in part on a value-in-use measure. Deprival value represents the loss that an entity would suffer if it were deprived of the asset being measured. Deprival value is the lower of (a) the amount the entity would need to pay to replace the asset and (b) the asset's recoverable amount. The asset's recoverable amount is the higher of (a) the asset's fair value less costs to sell and (b) its value in use—future net cash flows from the entity's continued use and ultimate disposal of the asset, discounted at the rate market participants would use in pricing assets with similar risk. Deprival value would not involve systematic depreciation or amortisation; it would require regular remeasurement with gains and losses recognised in either profit and loss or other comprehensive income.

76. However, the incremental cost of using a value-in-use measure such as deprival value in the statement of financial position and statement of comprehensive income might not be justified by its additional benefit because:
- (a) it could very subjective and require many internal assumptions that could be difficult to justify.
  - (b) individual assets do not generate separate cash flows. Consequently, assets would have to be measured in groups and the carrying amount attributable to acquisitions and disposals could be difficult to determine.
  - (c) users would probably consider value-in-use secondary to information about past cash flow and income and expense.
77. Some approaches to capital maintenance would require an entity to measure assets held for use at replacement cost or current cost, rather than actual cost. As explained in section [AP 10J(a)], this [draft] discussion paper does not explore whether the IASB should change those paragraphs of the Conceptual Framework dealing with capital maintenance.

### *Selling assets*

78. An asset to be sold will produce direct cash flows, which implies in most cases that fair value (or perhaps fair value less costs to sell) is likely to be relevant. The cost of a fair value measurement would probably be justified, and in many cases would not be particularly high. Consequently, this [draft] discussion paper suggests that fair value is the most appropriate measure for investments in financial instruments, commodities such as precious metals or grains that are regularly traded in public markets, and physical assets, other than inventories, that will be sold.
79. Although inventories will be sold, the benefit of fair value is less certain for recurring aspects of nonfinancial revenue-generating activities. Assessment of prospects for future cash flows from those activities is usually based on trends indicated by past sales, cost of sales, and other recurring components of profit and loss. Impairment losses are recognised if the carrying amount of inventory is not recoverable. Recoverability is judged based on undiscounted cash flows, because the time value of money does not typically affect these judgements materially.

80. There are many difficulties in determining market prices of inventory, such as appropriate units of account, effect of transaction costs, and obligations for associated services. Those make the benefits of fair values more contentious and uncertain than for other types of assets. Many might view income or expense from fair value measurement of inventories as “noise” in profit and loss.
81. Some reporting entities have expressed the opinion that the costs of fair value do not justify the benefits for investment property being developed or being held for a long time. Fair values require significant estimation effort and inputs from transactions involving property that may not be similar enough to the property in question. A cost-based measure would be less expensive, less volatile and less subjective.
82. However, for properties of this type, cost has little or no relation to future cash flows, especially if the cash flows will not occur for many years. Properties are not homogeneous enough and sales do not occur frequently enough to permit using past trends in cash flows and profit and loss to assess future outcomes. Consequently, fair value for those assets, although subjective, has been considered by many to be sufficiently relevant to justify the costs.

*Holding assets for collection according to terms*

83. Terms of many financial instruments require the issuer to make payments or deliver other valuable financial instruments. Although many, if not most, can be sold, an entity can hold them and collect the contractual cash flows.
84. Loans, bonds and other receivables that have interest-like returns and little variability in contractual cash flows are often held for collection. The economics of those assets are significantly influenced by two factors—the effective yield and the collectability.
85. Users can be expected to assess future prospects for yield by analysing management’s past success in originating or purchasing profitable loans or other receivables. Obviously, collectability (or lack thereof) is always relevant. Cost-based interest income along with bad debt expense as estimated by management has been the accepted way to communicate information about effective yield and collectability.

86. Some instruments held for collection have significant variability in cash flows and do not have interest-like returns. Many net settled derivative instruments and hybrid instruments fit that description.
87. Other derivative instruments, such as credit default swaps and similar instruments, may have terms that specify cash flow amounts that will occur if an event occurs or condition exists, but the occurrence of the cash flow is not certain. Finally, others involve an exchange of cash for a financial instrument that may be required or may be optional, but the net gain or loss on the exchange has more than a little variability.
88. Accrual-based cost measurement is not generally considered a viable option for measurement of assets with more than a little variability in cash flows or net value flows even if they are held for collection because:
- (a) the ultimate outcome is not closely linked to the original cost; and
  - (b) cost-based measurement techniques that simply allocate interest payments over the life of such an instrument do not work.

Consequently, fair value is the most relevant measure for assets of this type.

89. Some derivative instruments (hedging instruments) are held in order to offset changes in fair value or cash flows of other assets, liabilities, or forecast transactions (the hedged item or transaction). Nothing about that relationship suggests that fair value is not the appropriate measure for the derivative instrument because users still need to assess the cash flows that will result from those derivative instruments. However, if the hedged item is not measured at fair value, a measurement mismatch occurs, which results in reflecting gains or losses in profit and loss that are offset in whole or in part by other unrecognised losses or gains. Therefore, if specific requirements are met, the measurement of the hedged item is changed to reflect the offset in profit and loss, or the gain or loss on the hedging instrument is reported in other comprehensive income and reclassified to profit and loss when the hedged transaction occurs.

#### *Charging for rights to use assets*

90. Holders of physical assets or intellectual property sometimes charge others for the right to use those assets. Some ways of generating such cash flows are leasing,

renting, franchising, and charging entry fees, parking, landing or docking fees, tolls or royalties.

91. In situations where an entity continues to recognise the physical assets or intellectual property, this discussion paper suggests that the most relevant measure will depend upon the significance of the asset to the entity. For relatively small numbers of high value charge-for use assets, fair value is highly relevant, and for large groups of smaller charge-for-use assets, information about past income and expense and cash flows is more relevant.
92. Charge-for-use assets are different from both financial assets held for collection and assets held for use. Cash flows from charge-for-use assets include both contractual cash flows arising from existing contracts and cash flows that may result from future contracts or from the ultimate sale of the asset. Fair values of charge-for-use assets reflect their ability to generate cash flow by charging for use.
93. The importance of fair value is likely to increase as each individual asset owned by the entity becomes more significant to the whole entity (for example, land, buildings, parks, ships, airplanes and similar high value items). Fair value information or market information to use as inputs to fair value estimates is often available for physical assets of this type. There are accepted techniques in many markets for appraisals of land, buildings and other high value property for borrowing and insurance purposes. Those measures may not be fair value, but they could provide input to fair value estimates.
94. Information about past income and expense and past cash flows from use charges is also useful, and measuring at fair value does not hide that information if the changes in fair value are reported separately from the charge-for-use income and expense and cash flows.

### ***Subsequent measurement of liabilities with stated terms***

95. For the purposes of this discussion, liabilities with stated terms are those that come from contracts, statutes, or regulations that state a settlement amount or the method for determining the settlement amount. Liabilities such as those that



results from torts or violations of laws or regulations require negotiation or judicial action to determine a settlement amount are discussed in the portion of this section on other cash flow based measures beginning in paragraph 106.

96. In the same way as for assets, the nature of a liability and the way it will be settled are extremely important in identifying the appropriate measurement for that liability.
97. There are three ways in which an entity might settle a liability with stated terms:
- (a) By paying cash or delivering other assets according to terms;
  - (b) By transferring the obligation to another party and being released by the creditor
  - (c) Performing services or paying others to perform services.
98. In general, only a few liabilities with stated terms can be transferred.
99. Some types of liabilities that have stated terms but highly uncertain amounts that have not yet been determined (insurance contracts, deferred taxes, and postretirement plans) raise issues similar to liabilities without settlement terms. They are discussed in the portion of this section that addresses cash-flow-based measurements (see paragraph 108).

*Settling by paying cash or delivering other assets according to terms*

100. Probably most liabilities have contractual terms that specify payments, and almost all of those are settled according to their terms.
101. Some have argued that fair value is the appropriate measure for at least some financial liabilities with specified terms because the effects of changes in market prices (especially the effects of changes in interest rates) offset the effects of changes in market prices of financial assets that are measured at fair value. In addition, fair value distinguishes between two liabilities with similar proceeds that have different repayment requirements because they were incurred in different interest rate environments.
102. However, others have pointed out that few liabilities can be transferred to other entities in a ready market. Transfer normally requires negotiation with the

counterparty, and that is not a market transaction. In most such cases, the creditor has a superior bargaining position because the debtor has already agreed to terms.

103. If a liability cannot be transferred then measuring that liability at fair value reflects in comprehensive income changes in market prices that cannot be realised in profit or loss. Consequently, these liabilities are viewed as analogous to assets held for collection, and a cost-based measure has traditionally been considered appropriate for most liabilities with specified payment terms. The discussion of other cash-flow-based measures (see paragraphs 140-142) further describes considerations related to changes in measurements of liabilities as a result of changes in an entity's own credit risk and the market price of credit.
104. Derivative instruments and hybrid instruments have contractual terms, but the cash flows or fair values of net asset flows are highly variable and not closely linked to the original transaction price, which may be zero. Therefore, like derivatives that are assets, derivatives that are liabilities should be measured at fair value or another measure that varies according to the cash flows required by the contract. Such a measure is a much better indicator of ultimate cash flows.

#### *Transferring*

105. Few liabilities can be transferred to a third party without negotiating for the consent of the creditor. The most relevant measure of a liability that will be settled that way would be fair value, or fair value plus transaction costs, because that is an estimate of the cash that will be paid to induce another party to assume the liability.

#### *Performing services or paying others to perform services*

106. Liabilities arising from contractual obligations for services (performance obligations), have specified outcomes instead of stated terms. A cost-based measure starting with the proceeds received (in some cases with interest accretion) is considered by many to be appropriate for such obligations, especially if the services are a recurring revenue-generating activity. Of course, if the proceeds relate to more than one performance obligation, or to an obligation that is only partly performed, the proceeds would be allocated between the different

performance obligations, the parts already performed and the parts still to be performed.

107. However, fair value of the services may also be relevant information, especially if the entity will pay others to perform the services.

***Cash-flow-based measurements other than fair value***

108. Paragraph 34 lists six types of assets and liabilities, for which cash-flow-based measurements other than fair value are currently used in IFRSs. ([AP 10F(b)] describes the other cash-flow-based measures currently required by IFRSs.)
109. They include adjustments for impairment of assets or inadequacy of liabilities carried at cost-based amounts, provisions (for liabilities of uncertain timing or amount), post-employment benefits, and deferred tax assets and liabilities. In addition, the [forthcoming] exposure draft on insurance contracts is expected to propose a cash-flow-based measure other than fair value.
110. Adjustments to cost-based carrying amounts of assets for lack of recoverability, or liabilities for inadequacy, are triggered by changes in expectations about future cash flows, and the measures are based on estimates of those cash flows. (In some cases, such adjustments are also triggered by changes in discount rates or by changes in market risk premiums). Fair value, which in some cases might be observable, would be an alternative way of determining those adjustments, but because of the initial decision to measure at cost-based amounts instead of fair value, switching to fair value may not be appropriate.
111. There are various types of provisions. Some provisions that will require cash settlement arise from claims for damages or similar matters. The entity has received no proceeds and the settlement amount must be determined by negotiation with the claimant or by court order. At the recognition date, the settlement amount may be unknown and estimates maybe subject to significant uncertainty.
112. Some liabilities that will require settlement by performing services are imposed by statute or regulatory action, for example, remedying environmental damage or otherwise restoring or upgrading a site to a specified condition. The entity

receives no proceeds, and the exact nature of the work to be performed and the cost of it may be undetermined at the recognition date and estimate maybe subject to significant uncertainty.

113. Liabilities for post-employment benefits also may be subject to extreme uncertainties. Unlike the estimates discussed in the two previous paragraphs (paragraphs 111 and 112) which may be unique, estimates of liabilities for post-employment benefits may be based on statistical techniques and at least partly on historical or actuarial data. That does not eliminate the uncertainties, but it gives structure to the estimate. In some jurisdictions, it is possible to transfer some liabilities under post-employment benefit plans and therefore, fair value might be an option. However, in many jurisdictions, there is no way to do so. Also, it is rarely, if ever, possible to transfer the part of such a liability that relates to the effect of future salary increases on pensions payable for service already received.
114. Estimates of cash flows related to deferred tax assets and deferred tax liabilities also are subject to significant uncertainties, some due to factors under the control of the taxpayer and others not. Fair value is not really an option for deferred tax assets and liabilities. There is no market for deferred taxes, and because they are unique to each individual entity and situation, it would be difficult to guess what market participants' expectations might be.
115. A liability arising from an insurance contract is similar in some ways to the others mentioned in the paragraph 111-114. Sometimes the maximum settlement amount is known and other times not. Sometimes the occurrence of a payment is certain (but timing may be uncertain) and at other times highly uncertain. Statistical techniques, historical or actuarial data, and the entity's own experience and plans may be useful in dealing with the uncertainties in the estimate.
116. As this discussion indicates, there are a relatively small number of applications of cash-flow-based measures in existing IFRSs, but different methods are used in each application. There are no existing plans to expand the application of cash-flow-based measures, though the proposals for insurance contracts would reduce the number of such measures used in practice for such contracts. However, issues such as the effects of an entity's own credit risk on the measure of its liabilities,

arise from time to time. Therefore, there may be a demand for more such applications in the future.

117. [Principle 3](#) indicates that reducing the number of possible ways to apply cash-flow-based measurement could make financial statements easier to understand.
118. Ultimately, the IASB may decide to design two or three of these methods to pick from in future standards or because there are only a limited number of applications of other cash-flow-based measures may decide to continue to custom-tailor each application to the circumstances.
119. The following discussion identifies and explains the factors considered in cash-flow-based measures as a means of starting a discussion of how to reduce the number of possibilities.

*Factors considered in other cash-flow-based measures*

120. By definition, all cash-flow-based<sup>2</sup> measures start with estimates of the amounts of cash flows. Other factors that may be considered are:
- (a) The timing of the cash flows and the time value of money;
  - (b) Uncertainties—possibilities of variations in the amount and timing of cash flows;
  - (c) The price for bearing the risk of variations in cash flows; and
  - (d) Other factors such as illiquidity (which may not be identifiable).
121. Timing of cash flows and the time value of money affect many measures because a payment of CU<sup>3</sup>1,000 to be received tomorrow is more valuable than the same payment to be received in 10 years.
122. Uncertainties about when cash flows are to be made or received are important characteristics of assets and liabilities. The most likely outcome in the illustration of expected cash flow in [the appendix to this paper] is 50, but there are two other possibilities and as a result the expected cash flow is 55. A user of financial

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<sup>2</sup> The term cash flows, cash inflows, and cash outflow, are used for convenience. The techniques discussed here can also be applied to any delivery or exchange of items with net positive or net negative economic value.

<sup>3</sup> CU = currency units

statements would be unlikely to view the most likely cash flow of 50 to be the same as a certain cash flow of 50.

123. The price for bearing the risk of variations in cash flows depends on the uncertainty, but it is not the same thing. Two assets with expected cash flows of 100 can have very different ranges of possible outcomes. One might have only two possible outcomes—0 or 200—each with a 50 per cent probability. The other might have two possible outcomes—99 and 101—each with a 50 per cent probability. Most investors would not pay as much for the riskier asset. That difference represents the price for bearing risk.
124. An entity's own credit risk, which is a contentious issue in liability measurements, especially subsequent measurements, comprises two factors—uncertainties in the amount and timing of cash flows (the risk that the payments may not be made or may be late) and the price for bearing the risk of variations (the credit spread attributable to that level of credit risk). This factor is further discussed beginning in paragraph 140.
125. Not all of the factors in paragraph 120 (referred to simply as factors from here on) are considered in every cash-flow-based measure. Item (d) (other factors such as illiquidity) currently is not considered in any cash-flow-based measure except fair value. Illiquidity from a market perspective is considered in the measurement proposed in the exposure draft on insurance contracts.
126. The following discussion of factors to consider does not include item (d) in paragraph 120 but presumes that it should not be considered in most measurements other than fair value. Illiquidity and similar factors are based on unusual and possibly unidentifiable market conditions. Consequently, including them in measurement may not provide relevant information.
127. The important questions about cash-flow-based measures are:
  - (a) Which factors should be considered?
  - (b) When should the factors considered in a cash-flow-based measure reflect the view of market participants and when should they reflect the reporting entity's perspective?

- (c) Should the asset or liability be regularly remeasured (every reporting period) or remeasured only in response to triggering events?
  - (d) When remeasurement occurs, which factors should be updated and which should be held constant?
128. If the objective of a cash-flow-based measurement is a fair value estimate, all factors should be considered and should reflect a market participant view. Regular remeasurement should be required and all factors should be updated.
129. If the objective is to estimate what cost would have been in a market transaction as a starting point for a subsequent cost-based measurement, the initial measure should be the same as fair value, but it would not be updated unless the asset's carrying amount is not recoverable from future cash flows or the liability's carrying amount is inadequate to cover future cash flows.
130. Cash-flow-based measures required by existing IFRSs differ. In asset impairment tests under IAS 36, all factors are considered, but the cash flows are estimated from the entity's perspective instead of a market perspective. The measure is performed periodically and all factors are updated, but the carrying amount can never be more than what the carrying amount would have been without an impairment test.
131. The measure of post-employment benefits considers most of the factors from the perspective of the entity. The discount rate is the rate for high quality corporate or government bonds, which does not reflect the degree of uncertainty in the contractual cash outflows and does not include the entity's credit risk. The measure is updated each period and all factors are updated.
132. The impairment measure for financial assets subject to cost-based measurement uses updated cash flow estimates from the entity's perspective. All other factors are not updated.
133. At the other end of the range of possibilities, the measures of deferred tax assets and deferred tax liabilities do not include any of the factors. They are undiscounted estimates of most likely cash flows.
134. The measurement proposed in the [forthcoming] exposure draft on insurance contracts would consider all factors except the entity's own credit risk and all,

except the time value of money and illiquidity, are from the perspective of the entity.

135. Presumably, because cash-flow based measures are used in situations in which information from the statement of financial position is especially relevant, all of the factors in paragraph 120 can add to the relevance of a measure. Those two facts might lead to a conclusion that cash-flow-based measures of liabilities should include as many of the factors as possible (except possibly changes in an entity's own credit risk), that regular remeasurement should be required and that all factors should be updated.
136. If the objective of the measurement is impairment of an asset carried at cost-based amounts, principle 3 would indicate that it might be better to recognise the effects of changes in estimated cash flows and ignore changes in the prices of those cash flows. That could be done by changing the estimates of cash flows and holding other factors constant. However, it also might be desirable to reflect changes in the riskiness (variability) of the estimated cash flows.
137. Two matters deserve further discussion—entity perspective or market perspective (see paragraphs 138 and 139) and an entity's own credit risk (see paragraphs 140-142).

*Whose perspective?*

138. Whether to use an entity perspective or a market perspective depends on two things—the availability of market information and the degree to which market information is likely to be more relevant to the specific asset or liability.
139. If market inputs are observable, that makes estimation easier and easier to verify. Entity-specific inputs would be relevant for unique and highly uncertain cash flows and may better indicate ultimate cash flows if the entity has plans different from market participant assumptions or has more or better information. One concern about entity-specific estimates is that they may inadvertently reflect synergies with other assets and so may not measure the thing they purport to measure.



*An entity's own credit risk*

140. The possibility exists that an entity will not be able to settle its liabilities when they are due. That uncertainty is reflected in market prices of loans (the interest rate charged) from banks, in the original issue price of bonds, and is incorporated in some fashion into the pricing of every liability of the entity for which there is a transaction price. Therefore, it is automatically included in the initial measures of those liabilities. In those cases, the controversial issue is whether subsequent measurements of liabilities should reflect changes in the expected cash flows due to changes in the probability of non-payment, and whether they should reflect changes in the market price for bearing the risk of changes in the probability of non-payment.
141. Updating the measure of a liability for changes in credit risk (and market interest rates) adds discriminatory power. In other words, it helps distinguish between liabilities with similar face values or original proceeds but different amounts and timings of payments. The concerns generally focus on gains recognised as a liability is discounted at a higher rate because of an entity's deteriorating credit standing or because the market price for bearing the risk has increased. Recognised gains are normally considered positive indicators of performance, but in that case, a gain is a negative indicator.
142. For other cash-flow-based measures, reflecting uncertainty due to an entity's own credit risk in the initial measure also is controversial. If the uncertainty in a cash flow estimate reflects a market perspective, the estimate certainly would include uncertainty due to the entity's credit standing. However, if the uncertainty is from the entity's own perspective it may or may not.

**Questions for respondents**

143. Do you support the three principles of measurement described in paragraph 6?
144. Do you agree that the most relevant measurement method will depend on:
- (a) The way in which an asset will contribute to future cash flows;
  - (b) How the obligation in a liability will be fulfilled (paragraphs 38-142)?

**Appendix X - Definitions and illustrations of terms used in discussion of other cash-flow-based measurements<sup>4</sup>**

The following are definitions of terms used in discussing cash-flow-based measurements other than fair value. Illustrations of computations are also included for some of the terms.

*Estimated cash flow*

A single amount to be received or paid in the future. The term *estimated cash flow* does not describe a measurement. Instead, it describes an amount that is used in determining a measure. For example, the most likely cash flow is an estimated cash flow, and each amount in a range of possibilities used to determine expected or probability weighted cash flow is an estimated cash flow.

*Most likely cash flow or most likely amount*

The single amount with the highest probability of occurrence in a range of possible estimated cash flows. In existing standards, the term best estimate is sometimes used to mean most likely.

*Present value*

The current measure of an estimated future cash inflow or outflow, discounted at an interest rate for the number of periods between the measurement date and the date of the estimated future cash flow.

(Note: Most present value computations involve a number of cash flows occurring in different periods and therefore require different discount rates for cash flows that occur at different times.)

*Expected cash flow or probability weighted cash flow*

The sum of the products of each amount in a range of possible outcomes multiplied by the probability of occurrence of each.

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<sup>4</sup> This appendix will be included as an appendix to the discussion paper.

The process of computing the expected or probability weighted amount of a single cash flow involves (a) determining the possible outcomes (amounts), (b) assigning a probability of occurrence to each possible outcome, (c) multiplying the amount by the probability of each one, and (d) adding up the results. For example, if there are three possible amounts for a single cash flow—10, 50, and 80—and there is a 10% chance the outcome will be 10, a 60% chance the outcome will be 50, and a 30% chance the outcome will be 80, the computation is as follows:

10% times 10 equals 1,

60% times 50 equals 30, and

30% times 80 equals 24.

The sum of 1, 30, and 24 is 55.

The expected or probability weighted cash flow is 55.

#### *Expected present value*

The sum of the products of each amount in a range of possible outcomes multiplied in each case by the probability of occurrence for that outcome, all discounted using the same interest rate convention.

The difference between expected present value and expected cash flow is that each probability weighted amount is discounted using a rate appropriate for the time until it is estimated to occur. To illustrate assume that in the example used for expected cash flow, the 1 (10 times 10%) was estimated to occur in 1 year, the 30 (50 times 60%) in 2 years, and the 24 (80 times 30%) in 3 years. Because interest rates are generally higher for longer term cash flows, this illustration assumes the discount rate is different for each outcome—5%, 6%, and 7%, respectively. The expected present value computation would be as follows:

1 discounted for 1 year at 5% equals 0.95

30 discounted for 2 years at 6% equals 26.70

24 discounted for 3 years at 7% equals 19.59

The sum of the three amounts is 47.24

The expected present value of the cash flow is 47.24 (as compared to the expected cash flow of 55).