

November 2006

DISCUSSION PAPER

Fair Value Measurements

Part 1: Invitation to Comment and relevant IFRS guidance

Comments to be submitted by 2 April 2007



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Fair Value Measurements

Part 1: Invitation to Comment

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This Discussion Paper *Fair Value Measurements* is published (in two parts) by the International Accounting Standards Board (IASB) for comment only. Part 1 contains the text of the IASB's Invitation to Comment. For the text of the US standard SFAS 157 *Fair Value Measurements*, please see Part 2.

Comments on the contents of the Discussion Paper should be submitted in writing so as to be received by **2 April 2007**.

All responses will be put on the public record unless the respondent requests confidentiality. However, such requests will not normally be granted unless supported by good reason, such as commercial confidence. If commentators respond by fax or email, it would be helpful if they could also send a hard copy of their response by post. Comments should preferably be sent by email to: **CommentLetters@iasb.org** or addressed to:

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INVITATION TO COMMENT

Introduction

- 1 In February 2006 the International Accounting Standards Board (IASB) and the US Financial Accounting Standards Board (FASB) published a Memorandum of Understanding reaffirming their commitment to the convergence of US generally accepted accounting principles (GAAP) and International Financial Reporting Standards (IFRSs) and to their shared objective of developing high quality, common accounting standards for use in the world's capital markets. The convergence work programme set out in the Memorandum reflects the standard-setting context of the 'roadmap' developed by the US Securities and Exchange Commission in consultation with the IASB, FASB and European Commission for the removal of the reconciliation requirement for non-US companies that use IFRSs and are registered in the US. The work programme includes a project on measuring fair value.
- 2 The FASB has recently issued Statement of Financial Accounting Standards No. 157 *Fair Value Measurements* (SFAS 157), on which work was well advanced before the Memorandum of Understanding was published. SFAS 157 establishes a single definition of fair value together with a framework for measuring fair value for US GAAP. The IASB recognised the need for guidance on measuring fair value in IFRSs and for increased convergence with US GAAP. Consequently, the IASB decided to use the FASB's standard as the starting point for its deliberations. As the first stage of its project, the IASB is publishing in this discussion paper its preliminary views on the principal issues contained in SFAS 157. To assist readers, the following are reproduced in this discussion paper:
 - (a) excerpts of fair value measurement guidance in IFRSs (in the Appendix) and
 - (b) the text of SFAS 157, together with the related application guidance, present value guidance and basis for conclusions (in Part 2)
- 3 The IASB plans to hold round-table meetings on this discussion paper in conjunction with the development of an exposure draft. Please indicate in your response to this Invitation to Comment if you are interested in taking part in a round-table meeting. Please note that, because of timing and space constraints, not all of those indicating an interest may be able to take part.

- 4 The IASB will consider responses to this Invitation to Comment and the related round-table discussions in developing an exposure draft of an IFRS on fair value measurement. The exposure draft will be prepared specifically for application to IFRSs. Although provisions of SFAS 157 may be used in the preparation of an exposure draft, they may be reworded or altered to be consistent with other IFRSs and to reflect the decisions of the IASB. The IASB plans to publish an exposure draft by early 2008.
- 5 In November 2005 the IASB published for comment a discussion paper, *Measurement Bases for Financial Accounting – Measurement on Initial Recognition*, written by the staff of the Canadian Accounting Standards Board. Although that paper contained a discussion of fair value, its primary purpose was to discuss which measurement attributes were appropriate for initial recognition. That paper is part of the ongoing Conceptual Framework project that seeks to establish, among other things, a framework for measurement in financial reporting. Because of the different scope and intent of that paper, it is not discussed in this discussion paper. However, comments on that discussion paper relating to the measurement of fair value will be considered in the development of the exposure draft of an IFRS on fair value measurement as well as in the Conceptual Framework project.

Issue 1. SFAS 157 and fair value measurement guidance in current IFRSs

- 6 IFRSs require some assets, liabilities and equity instruments to be measured at fair value in some circumstances. However, guidance on measuring fair value is dispersed throughout IFRSs and is not always consistent. The IASB believes that establishing a single source of guidance for all fair value measurements required by IFRSs will both simplify IFRSs and improve the quality of fair value information included in financial reports. A concise definition of fair value combined with consistent guidance that applies to all fair value measurements would more clearly communicate the objective of fair value measurement and eliminate the need for constituents to consider guidance dispersed throughout IFRSs.
- 7 The IASB emphasises that the Fair Value Measurements project is not a means of expanding the use of fair value in financial reporting. Rather, the objective of the project is to codify, clarify and simplify existing guidance that is dispersed widely in IFRSs. However, in order to establish a single standard that provides uniform guidance for all fair value

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measurements required by IFRSs, amendments will need to be made to the existing guidance. As discussed further in Issue 2, the amendments might change how fair value is measured in some standards and how the requirements are interpreted and applied.

- 8 In some IFRSs the IASB (or its predecessor body) consciously included measurement guidance that results in a measurement that is treated as if it were fair value even though the guidance is not consistent with the fair value measurement objective. For example, paragraph B16 of IFRS 3 *Business Combinations* provides guidance that is inconsistent with the fair value measurement objective for items acquired in a business combination such as tax assets, tax liabilities and net employee benefit assets or liabilities for defined benefit plans. Furthermore, some IFRSs contain measurement reliability criteria. For example, IAS 16 *Property, Plant and Equipment* permits the revaluation model to be used only if fair value can be measured reliably (see paragraph 31 of IAS 16). This project will not change any of that guidance. Rather, that guidance will be considered project by project. However, the IASB plans to use the Fair Value Measurements project to establish guidance where there currently is none, such as in IAS 17 *Leases*, as well as to eliminate inconsistent guidance that does not clearly articulate a single measurement objective.
- 9 Because SFAS 157 establishes a single source of guidance and a single objective that can be applied to all fair value measurements, the IASB has reached the preliminary view that SFAS 157 is an improvement on the disparate guidance in IFRSs. However, as discussed in more detail below, the IASB has not reached preliminary views on all provisions of SFAS 157.

Questions for respondents

- Q1** In your view, would a single source of guidance for all fair value measurements in IFRSs both reduce complexity and improve consistency in measuring fair value? Why or why not?
- Q2** Is there fair value measurement guidance in IFRSs that you believe is preferable to the provisions of SFAS 157? If so, please explain.

Issue 2. Differences between the definitions of fair value in SFAS 157 and in IFRSs

- 10 Paragraph 5 of SFAS 157 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.’ By comparison, fair value is generally defined in IFRSs as ‘the amount for which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties in an arm’s length transaction’ (with some slight variations in wording in different standards). The definition in SFAS 157 differs from the definition in IFRSs in three important ways:
- (a) The definition in SFAS 157 is explicitly an exit (selling) price. The definition in IFRSs is neither explicitly an exit price nor an entry (buying) price.
 - (b) The definition in SFAS 157 explicitly refers to market participants. The definition in IFRSs refers to knowledgeable, willing parties in an arm’s length transaction.
 - (c) For liabilities, the definition of fair value in SFAS 157 rests on the notion that the liability is transferred (the liability to the counterparty continues; it is not settled with the counterparty). The definition in IFRSs refers to the amount at which a liability could be settled between knowledgeable, willing parties in an arm’s length transaction.
- 11 These differences are discussed in more detail below.

Issue 2A. Exit price measurement objective

- 12 The Basis for Conclusions of SFAS 157 includes the following discussion:
- C26 The transaction to sell the asset or transfer the liability is a hypothetical transaction at the measurement date, considered from the perspective of a market participant that holds the asset or owes the liability. Therefore, the objective of a fair value measurement is to determine the price that would be received for the asset or paid to transfer the liability at the measurement date, that is, an exit price. The Board [FASB] concluded that an exit price objective is appropriate because it embodies current expectations about the future inflows associated with the asset and the future outflows associated with the liability from the perspective of market participants. The emphasis on inflows and outflows is consistent with the definitions of assets and liabilities in FASB Concepts Statement No. 6, *Elements of Financial*

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Statements. Paragraph 25 of Concepts Statement 6 defines assets in terms of future economic benefits (future inflows). Paragraph 35 of Concepts Statement 6 defines liabilities in terms of future sacrifices of economic benefits (future outflows).

- 13 Paragraph 49 of the IASB's *Framework for the Preparation and Presentation of Financial Statements* similarly defines assets and liabilities in terms of inflows and outflows of economic benefits. The majority of IASB members believe that a fair value measurement with an exit price objective is consistent with these definitions and is appropriate because it reflects current market-based expectations of flows of economic benefit into or out of the entity.
- 14 Other IASB members agree with this view, but in their view an entry price also reflects current market-based expectations of flows of economic benefit into or out of the entity. Therefore, they suggest replacing the term 'fair value' with terms that are more descriptive of the measurement attribute, such as 'current entry price' or 'current exit price'.
- 15 An entry price measurement objective would differ from the exit price objective in SFAS 157 in that it would be defined as the price that would be *paid to acquire* an asset or *received to assume* a liability in an orderly transaction between market participants at the measurement date. Some members of the IASB are of the view that an entry price and an exit price would be the same amount in the same market, assuming that transaction costs are excluded. However, an entity might buy an asset or assume a liability in one market and sell that same asset or transfer that same liability (ie without modification or repackaging) in another market. In such circumstances, the exit price in SFAS 157 would be likely to differ from the entry price.

Questions for respondents

Q3 Do you agree that fair value should be defined as an exit price from the perspective of a market participant that holds the asset or owes the liability? Why or why not?

- Q4** Do you believe an entry price also reflects current market-based expectations of flows of economic benefit into or out of the entity? Why or why not? Additionally, do you agree with the view that, excluding transaction costs, entry and exit prices will differ only when they occur in different markets? Please provide a basis for your views.
- Q5** Would it be advisable to eliminate the term ‘fair value’ and replace it with terms, such as ‘current exit price’ or ‘current entry price’, that more closely reflect the measurement objective for each situation? Please provide a basis for your views.

- 16 Some fair value measurements required by IFRSs might not be consistent with an exit price measurement objective. In particular, the IASB observes that this might be the case when fair value is required on initial recognition, such as in:
- (a) IFRS 3,
 - (b) IAS 17 for the initial recognition of assets and liabilities by a lessee under a finance lease, and
 - (c) IAS 39 *Financial Instruments: Recognition and Measurement* for the initial recognition of some financial assets and financial liabilities.
- 17 In developing an exposure draft, the IASB may propose a revised definition of fair value. If so, it will complete a standard-by-standard review of fair value measurements required in IFRSs to assess whether each standard’s intended measurement objective is consistent with the proposed definition. If the IASB concludes that the intended measurement objective in a particular standard is inconsistent with the proposed definition of fair value, either that standard will be excluded from the scope of the exposure draft or the intended measurement objective will be restated using a term other than fair value (such as ‘current entry value’). To assist in its review, the IASB would like to

understand how the fair value measurement guidance in IFRSs is currently applied in practice. It therefore requests respondents to identify those fair value measurements in IFRSs for which practice differs from the fair value measurement objective in SFAS 157.

Question for respondents

Q6 Does the exit price measurement objective in SFAS 157 differ from fair value measurements in IFRSs as applied in practice? If so, which fair value measurements in IFRSs differ from the measurement objective in SFAS 157? In those circumstances, is the measurement objective as applied in practice an entry price? If not, what is the measurement objective applied in practice? Please provide a basis for your views.

Issue 2B. Market participant view

- 18 SFAS 157 emphasises that a fair value measurement is a market-based measurement, not an entity-specific measurement. Therefore, a fair value measurement should be based on the assumptions that market participants would use in pricing the asset or liability. Furthermore, even when there is limited or no observable market activity, the objective of the fair value measurement remains the same: to determine the price that would be received to sell an asset or be paid to transfer a liability in an orderly transaction between market participants at the measurement date, regardless of the entity's intention or ability to sell the asset or transfer the liability at that date.
- 19 Paragraph 10 of SFAS 157 defines market participants as buyers and sellers in the principal (or most advantageous) market for the asset or liability who are:
- (a) Independent of the reporting entity; that is, they are not related parties
 - (b) Knowledgeable, having a reasonable understanding about the asset or liability and the transaction based on all available information, including information that might be obtained through due diligence efforts that are usual and customary
 - (c) Able to transact for the asset or liability
 - (d) Willing to transact for the asset or liability; that is, they are motivated but not forced or otherwise compelled to do so.

- 20 In comparison, the definition of fair value in IFRSs refers to ‘knowledgeable, willing parties in an arm’s length transaction’. Paragraphs 42-44 of IAS 40 *Investment Property* provide a description of this concept:
- 42 The definition of fair value refers to ‘knowledgeable, willing parties’. In this context, ‘knowledgeable’ means that both the willing buyer and the willing seller are reasonably informed about the nature and characteristics of the investment property, its actual and potential uses, and market conditions at the balance sheet date. A willing buyer is motivated, but not compelled, to buy. This buyer is neither over-eager nor determined to buy at any price. The assumed buyer would not pay a higher price than a market comprising knowledgeable, willing buyers and sellers would require.
- 43 A willing seller is neither an over-eager nor a forced seller, prepared to sell at any price, nor one prepared to hold out for a price not considered reasonable in current market conditions. The willing seller is motivated to sell the investment property at market terms for the best price obtainable. The factual circumstances of the actual investment property owner are not a part of this consideration because the willing seller is a hypothetical owner (eg a willing seller would not take into account the particular tax circumstances of the actual investment property owner).
- 44 The definition of fair value refers to an arm’s length transaction. An arm’s length transaction is one between parties that do not have a particular or special relationship that makes prices of transactions uncharacteristic of market conditions. The transaction is presumed to be between unrelated parties, each acting independently.
- 21 The IASB’s preliminary view is that the market participant view is generally consistent with the concepts of a knowledgeable, willing party in an arm’s length transaction that are currently contained in IFRSs. However, in the IASB’s view, the proposed definition more clearly articulates the market-based fair value measurement objective in IFRSs.

Questions for respondents

- Q7 Do you agree with how the market participant view is articulated in SFAS 157? Why or why not?**
- Q8 Do you agree that the market participant view in SFAS 157 is consistent with the concepts of ‘knowledgeable, willing parties’ and ‘arm’s length transaction’ as defined in IFRSs? If not, how do you believe they differ?**

Issue 2C. Transfer versus settlement of a liability

- 22 IFRSs define the fair value of a liability as the amount for which a liability could be *settled* between knowledgeable, willing parties in an arm's length transaction. SFAS 157 clearly states that the fair value of a liability is the price that would be paid to *transfer* a liability in an orderly transaction between market participants. Paragraph C40 of the Basis for Conclusions of SFAS 157 discusses why the FASB used the term 'transfer':

Because the liability is transferred to a market participant, the liability continues; it is not settled with the counterparty. The Board [FASB] acknowledged that in some cases, the reporting entity might not have the intent to transfer the liability to a third party. For example, the reporting entity might have advantages (or disadvantages) relative to the market that would make it more (or less) beneficial for the reporting entity to perform or otherwise settle the liability using its own internal resources. However, the Board [FASB] agreed that the fair value of the liability from the perspective of a market participant is the same regardless of how the reporting entity intends to settle the liability. Conceptually, a fair value measurement provides a market benchmark to use as a basis for assessing the reporting entity's advantages (or disadvantages) in performance or settlement relative to the market. Specifically, when a liability is measured at fair value, the relative efficiency of the reporting entity in settling the liability using its own internal resources appears in earnings over the course of its settlement, not before.

- 23 Although IFRSs use the term 'settlement' in the definition of fair value, the IASB's preliminary view is that the term 'transfer' more accurately describes the fair value measurement objective in IFRSs.* This preliminary view is based on existing guidance in IFRSs, which refers to market-based objectives for measuring the fair value of liabilities. Such a market-based objective is consistent with a transfer notion because it excludes entity-specific efficiencies or inefficiencies that might be included in a settlement notion. Rather, a transfer notion reflects market participants' views on settlement of the liability. Market participants that would assume a liability at the measurement date would also assume the obligation to settle with the counterparty to the liability. Therefore, the

* Paragraph 36 of IAS 37 *Provisions, Contingent Liabilities and Contingent Assets* states that the amount recognised as a provision shall be the best estimate of the expenditure required to settle the present obligation at the balance sheet date. Paragraph 37 of IAS 37 explains that the best estimate of the expenditure required to settle the present obligation is the amount that an entity would rationally pay to settle the obligation at the balance sheet date or to transfer it to a third party at that time. However, as IAS 37 does not require provisions be recorded at fair value, it is not in the scope of this project.

price that market participants would require in order to assume the liability reflects their views on the expected outflow of resources embodying economic benefits associated with the ultimate settlement with the counterparty.

- 24 The following guidance in IFRSs supports the IASB's preliminary view:
- (a) Paragraph B16(l) of IFRS 3 refers to a transfer notion for contingent liabilities: 'for contingent liabilities of the acquiree the acquirer shall use the amounts that a third party would charge to assume those contingent liabilities.'
 - (b) In IAS 39, paragraphs AG71 and AG72 state that quoted prices in an active market are the best evidence of fair value. Such quoted prices in an active market generally represent a transfer price as opposed to an entity-specific settlement price. Similarly, paragraph AG75 indicates that when an entity uses a valuation model because a quoted price in an active market is not available, 'the objective of using a valuation technique is to establish what the transaction price would have been on the measurement date in an arm's length exchange motivated by normal business considerations.'

Questions for respondents

Q9 Do you agree that the fair value of a liability should be based on the price that would be paid to transfer the liability to a market participant? Why or why not?

Q10 Does the transfer measurement objective for liabilities in SFAS 157 differ from fair value measurements required by IFRSs as applied in practice? If so, in practice which fair value measurements under IFRSs differ from the transfer measurement objective in SFAS 157 and how do they differ?

Issue 3. Transaction price and fair value at initial recognition

- 25 Paragraph 16 of SFAS 157 states that entry prices and exit prices are conceptually different. Therefore, SFAS 157 requires entities to consider factors specific to the transaction and the asset or liability in determining whether the transaction price paid to acquire an asset or received to assume a liability represents fair value at initial recognition. Paragraph 17 of SFAS 157 also provides examples of situations when a transaction price might not represent fair value.
- 26 The IASB noted that the guidance on fair value at initial recognition in paragraphs 16 and 17 of SFAS 157 diverges from the guidance in paragraph AG76 of IAS 39, which states that:
- ... The best evidence of the fair value of a financial instrument at initial recognition is the transaction price (ie the fair value of the consideration given or received) unless the fair value of that instrument is evidenced by comparison with other observable current market transactions in the same instrument (ie without modification or repackaging) or based on a valuation technique whose variables include only data from observable markets.
- 27 At present, under IAS 39, an entity may recognise the difference between a model-based estimate of fair value and the transaction price at initial recognition (day-one gain or loss) only if the model-based estimate of fair value is based entirely on observable market inputs. If this condition is not met, gains or losses on the financial asset or financial liability in periods after initial recognition can comprise changes in the model-based value *as well as* the portion of the unrecognised day-one gain or loss subsequently recognised because of a change in factors (including time).
- 28 In comparison, if the provisions of SFAS 157 were applied to IFRSs without modification, the difference between the model-based estimate of fair value and the transaction price would be recognised in profit or loss at initial recognition. Subsequent gains and losses relating to the financial asset or financial liability would then reflect *only* changes in the model-based estimate of fair value.
- 29 The IASB discussed two views about the divergence between paragraphs 16 and 17 of SFAS 157 and paragraph AG76 of IAS 39:
- (a) View 1 maintains the accounting required at present by IAS 39. Supporters of View 1 do not fully agree with the provisions of paragraphs 16 and 17 of SFAS 157. They believe that the transaction price is the best evidence of fair value in the absence of observable market information or evidence to the contrary, as discussed in paragraph AG76 of IAS 39. As such, supporters of View 1 do not

believe it is appropriate to measure a financial asset or financial liability initially at an amount different from the transaction price unless the financial asset or financial liability can be valued at a different amount using only observable market information.

- (b) View 2 acknowledges that entry prices and exit prices are conceptually different, as noted in paragraphs 16 and 17 of SFAS 157. Supporters of View 2 believe that if fair value has an exit price objective, it should be used consistently whenever fair value is required by IFRSs, regardless of whether a fair value measurement can be corroborated by observable market information. As such, supporters of View 2 accept the recognition in profit or loss of a difference between a model-based estimate of fair value and the transaction price at initial recognition, even if the asset or liability cannot be valued using only market-based information. Supporters of View 2 argue that accounting for day-one gains and losses separately from the subsequent changes in the model-based estimate of fair value provides users of financial statements with more relevant information and a better understanding of the economics of the transactions.

30 The IASB has not reached a preliminary view on this matter, and seeks the views of respondents.

31 Additionally, SFAS 157 does not define the unit of account for assets or liabilities measured at fair value except in Level 1 of the hierarchy. Some members of the IASB are concerned that if the provisions of SFAS 157 were applied to IFRSs entities would measure the fair values of financial assets and financial liabilities on the basis of a portfolio of the separately identifiable risks held by the entity rather than as an in-exchange exit price for the individual instruments. They observe that, based on guidance in paragraphs 48A, AG71 and AG75 of IAS 39, the objective of measuring fair value for financial assets and financial liabilities in IFRSs is to establish what the transaction price would have been on the measurement date in an arm's length exchange motivated by normal business considerations for the individual instrument. The IASB requests respondents to comment on whether they believe that the provisions of

SFAS 157, considered with the unit of account guidance in IAS 39, would result in a fair value measurement using a portfolio-based valuation of identifiable risks of instruments considered in aggregate or an exit price valuation of the individual instruments.

Questions for respondents

- Q11** In your view is it appropriate to use a measurement that includes inputs that are not observable in a market as fair value at initial recognition, even if this measurement differs from the transaction price? Alternatively, in your view, in the absence of a fair value measurement based solely on observable market inputs, should the transaction price be presumed to be fair value at initial recognition, thereby potentially resulting in the deferral of day-one gains and losses? Please give reasons for your views.
- Q12** Do you believe that the provisions of SFAS 157, considered in conjunction with the unit of account guidance in IAS 39, would result in a portfolio-based valuation of identifiable risks of instruments considered in aggregate, or an in-exchange exit price for the individual instruments? Please give reasons for your views.

Issue 4. Principal (or most advantageous) market

- 32 Paragraph 8 of SFAS 157 states:

A fair value measurement assumes that the transaction to sell the asset or transfer the liability occurs in the principal market for the asset or liability or, in the absence of a principal market, the most advantageous market for the asset or liability. The principal market is the market in which the reporting entity would sell the asset or transfer the liability with the greatest volume and level of activity for the asset or liability. The most advantageous market is the market in which the reporting entity would sell the asset or transfer the liability with the price that maximizes the amount that would be received for the asset or minimizes the amount that would be paid to transfer the liability, considering transaction costs in the respective market(s).

- 33 Paragraph C28 of the Basis for Conclusions on SFAS 157 states that the FASB concluded that a fair value measurement should be based on the principal market, if one exists, so that entities need not continuously monitor multiple markets in order to determine which market is the

most advantageous at the measurement date. Rather, the FASB concluded that, generally, the principal market for an asset or liability (the market in which the reporting entity would sell the asset or transfer the liability with the greatest volume and level of activity for the asset or liability) will represent the most advantageous market for the asset or liability. Accordingly, the FASB concluded that a fair value measurement should represent the price in the principal market (whether observable or otherwise determined using a valuation technique), even if a price in a different market is potentially more advantageous at the measurement date.

- 34 The IASB observed that IFRSs do not contain consistent guidance about which market should be used as a basis for measuring fair value when more than one market exists. For example, paragraph AG71 of IAS 39 states that ‘the objective of determining fair value for a financial instrument that is traded in an active market is to arrive at the price at which a transaction would occur at the balance sheet date in that instrument (ie without modifying or repackaging the instrument) in the most advantageous active market to which the entity has immediate access.’ However, paragraph 17 of IAS 41 *Agriculture* states:

If an entity has access to different active markets, the entity uses the most relevant one. For example, if an entity has access to two active markets, it would use the price existing in the market expected to be used.

- 35 The IASB’s preliminary view agrees with the guidance in SFAS 157. The IASB reached this preliminary view because it observed that in most instances the principal market for an asset or liability will be the most advantageous market and that entities need not continuously monitor multiple markets in order to determine which market is most advantageous at the measurement date. Furthermore, the IASB reasoned that the market on which an asset or liability is principally traded provides a more liquid, and therefore more representative, input for a fair value measurement.

Question for respondents

Q13 Do you agree that a fair value measurement should be based on the principal market for the asset or liability or, in the absence of a principal market, the most advantageous market for the asset or liability? Why or why not?

Issue 5. Attributes specific to the asset or liability

- 36 Paragraph 6 of SFAS 157 states that a fair value measurement 'should consider attributes specific to the asset or liability, for example, the condition and/or location of the asset or liability and restrictions, if any, on the sale or use of the asset at the measurement date.' This concept also includes any other attributes of the asset or liability that market participants would consider when pricing the asset or liability, such as contractual enhancements or encumbrances (so long as these attributes are not accounted for separately from the asset or liability).
- 37 Paragraph 9 of SFAS 157 clarifies that transaction costs that would be incurred to sell the asset or transfer the liability at the measurement date are not an attribute of the asset or liability; rather, they are specific to the transaction and will vary depending on how the reporting entity transacts. Therefore, transaction costs should not be deducted from (or, in the case of liabilities, added to) the price in the principal (or most advantageous) market when measuring fair value. Rather, SFAS 157 states that transaction costs should be accounted for in accordance with the provisions of other accounting pronouncements. Paragraph 9 also distinguishes transaction costs from costs that would be incurred to transport the asset or liability to its principal (or most advantageous) market. If location is an attribute of the asset or liability, the price in the principal (or most advantageous) market is adjusted for costs that would be incurred to transport the asset or liability from its current location to the principal (or most advantageous) market. This adjustment reflects the increase or decrease in value of the asset or liability given its location relative to the principal (or most advantageous) market.
- 38 The IASB reached the preliminary view that it is appropriate to consider attributes specific to the asset or liability that a market participant would consider when pricing the asset or liability. The IASB also agrees that when location is an attribute of the asset or liability the price in the principal (or most advantageous) market should be adjusted for costs that would be incurred to transport the asset or liability from its current location to the principal (or most advantageous) market. Lastly, the IASB agrees that transaction costs are an attribute of the transaction rather than an attribute of the asset or liability. Thus, they should be considered separately from fair value, which is consistent with current IFRSs. For example, some IFRSs require assets or liabilities to be measured at fair value less transaction costs that would be incurred (such as biological

assets recognised in accordance with IAS 41 at fair value less estimated point-of-sale costs). The fair value measurement does not include transaction costs; rather, they are separately deducted from the fair value measurement as a component of the point-of-sale costs.

Questions for respondents

Q14 Do you agree that a fair value measurement should consider attributes specific to the asset or liability that market participants would consider in pricing the asset or liability? If not, why?

Q15 Do you agree that transaction costs that would be incurred in a transaction to sell an asset or transfer a liability are an attribute of the transaction and not of the asset or liability? If not, why?

Issue 6. Valuation of liabilities

- 39 Paragraph 15 of SFAS 157 observes that the risk that an obligation will not be fulfilled ('non-performance risk') affects the value at which the liability is transferred. As such, the fair value of the liability reflects the non-performance risk relating to that liability. Paragraph 15 of SFAS 157 further clarifies that non-performance risk includes, but may not be limited to, the entity's own credit risk (credit standing). Therefore, SFAS 157 requires the entity to consider the effect of its credit risk (credit standing) on the fair value of the liability in all periods in which the liability is measured at fair value. That effect may vary depending on the liability, for example, whether the liability is an obligation to deliver cash (a financial liability) or an obligation to deliver goods or services (a non-financial liability), and the terms of credit enhancements related to the liability, if any.
- 40 IAS 39 establishes that fair value reflects the credit quality of the instrument (paragraph AG69) and not the entity's own credit risk as in SFAS 157. However, the IASB believes that the two concepts are consistent, as SFAS 157 indicates that the effects of an entity's own credit risk may vary because of the terms of credit enhancements related to the liability.

- 41 IFRSs do not provide guidance on whether non-performance risk should be considered when measuring the fair value of a non-financial liability. However, the IASB observes that a requirement to consider non-performance risk when measuring the fair value of a liability extends to fair value measurements of all liabilities the principle already established for financial liabilities in IAS 39. Also, the IASB agrees with the position in SFAS 157 that the risk that an obligation will not be satisfied affects the value at which that obligation would be transferred. Therefore, the IASB reached a preliminary view that the fair value of a liability should reflect non-performance risk.

Question for respondents

Q16 Do you agree that the risk of non-performance, including credit risk, should be considered in measuring the fair value of a liability? If not, why?

Issue 7. ‘In-use valuation premise’ versus ‘value in use’

- 42 Paragraphs 12–14 of SFAS 157 discuss the application of the standard to assets. Paragraph 12 states ‘a fair value measurement assumes the highest and best use of the asset by market participants, considering the use of the asset that is physically possible, legally permissible, and financially feasible at the measurement date.’ In broad terms, the highest and best use refers to how market participants would use an asset in order to maximise the value of the asset or the group of assets within which the asset would be used. In accordance with SFAS 157, the highest and best use is determined on the basis of the use of the asset by market participants, even if the intended use of the asset by the reporting entity is different.
- 43 Paragraph 13 of SFAS 157 states that the highest and best use of an asset establishes the valuation premise used to measure the fair value of the asset. The highest and best use is the higher of the fair value with an in-use valuation premise and the fair value with an in-exchange valuation premise. Both the in-use valuation premise and the in-exchange valuation premise in SFAS 157 assume a hypothetical transaction between market participants at the measurement date. Paragraph 13(a) of SFAS 157 discusses the in-use valuation premise as follows:

The highest and best use of the asset is in-use if the asset would provide maximum value to market participants principally through its use in combination with other assets as a group (as installed or otherwise

configured for use). For example, that might be the case for certain nonfinancial assets. If the highest and best use of the asset is in-use, the fair value of the asset shall be measured using an in-use valuation premise. When using an in-use valuation premise, the fair value of the asset is determined based on the price that would be received in a current transaction to sell the asset assuming that the asset would be used with other assets as a group and that those assets would be available to market participants. Generally, assumptions about the highest and best use of the asset should be consistent for all of the assets of the group within which it would be used.

- 44 In contrast, IAS 36 *Impairment of Assets* uses the term ‘value in use’ in conjunction with assessing and measuring impairments of assets or cash-generating units. Paragraph 30 of IAS 36 requires the following elements to be reflected in the calculation of an asset’s (or cash-generating unit’s) value in use:
- (a) an estimate of the future cash flows the entity expects to derive from the asset;
 - (b) expectations about possible variations in the amount or timing of those future cash flows;
 - (c) the time value of money, represented by the current market risk-free rate of interest;
 - (d) the price for bearing the uncertainty inherent in the asset; and
 - (e) other factors, such as illiquidity, that market participants would reflect in pricing the future cash flows the entity expects to derive from the asset.
- 45 ‘Value in use’ in IAS 36 incorporates an estimate of future cash flows that the entity expects to derive from the asset (or asset group) and does not require those cash flows to be adjusted to reflect market participant expectations. Therefore, the resulting value is an entity-specific value. In comparison, fair value measurement determined using an in-use valuation premise is a market-based measurement, not an entity-specific measurement. The IASB seeks respondents’ views on whether the differences between the concept of an ‘in-use valuation premise’ under SFAS 157 and the concept of ‘value in use’ under IAS 36 are clear.

Question for respondents

Q17 Is it clear that the ‘in-use valuation premise’ used to measure the fair value of an asset in SFAS 157 is different from ‘value in use’ in IAS 36? Why or why not?

Issue 8. Fair value hierarchy

- 46 To increase consistency and comparability in fair value measurements and related disclosures, SFAS 157 establishes a three-level hierarchy that assigns priorities to the inputs that valuation techniques use to measure fair value. The fair value hierarchy gives the highest priority to quoted prices in active markets for identical assets or liabilities, and the lowest priority to inputs that cannot be observed in a market. For disclosure purposes, the level in the fair value hierarchy within which the fair value measurement falls is determined on the basis of the lowest level input that is significant to the fair value measurement in its entirety.
- 47 IFRSs do not have a consistent hierarchy that applies to all fair value measurements. Instead, individual IFRSs provide guidance about which information should be given priority when measuring fair value. The lack of consistent guidance adds complexity to IFRSs and reduces comparability. For these reasons, the IASB favours a single hierarchy such as the one in SFAS 157.

Questions for respondents

Q18 Do you agree with the hierarchy in SFAS 157? If not, why?

Q19 Are the differences between the levels of the hierarchy clear? If not, what additional information would be helpful in clarifying the differences between the levels?

Issue 9. Large positions of a single financial instrument (blocks)

- 48 The IASB noted the following discussion in paragraph 27 of SFAS 157:
- If the reporting entity holds a position in a single financial instrument (including a block) and the instrument is traded in an active market, the fair value of the position shall be measured within Level 1 as the product of the quoted price for the individual instrument times the quantity held. The quoted price shall not be adjusted because of the size of the position relative to trading volume (blockage factor). The use of a blockage factor is prohibited, even if a market's normal daily trading volume is not sufficient to absorb the quantity held and placing orders to sell the position in a single transaction might affect the quoted price.

- 49 The IASB agrees in concept with the prohibition on the use of blockage factors in measuring fair value. The IASB noted that the guidance in SFAS 157 is similar to paragraphs AG71 and AG72 of IAS 39, which state that a published price quotation in an active market is the best estimate of fair value and that the fair value of a portfolio of financial instruments is the product of the number of units of the instrument held and its quoted market price. Further, as discussed in paragraph 31 above, the IASB also observes that guidance in paragraphs 48A, AG71 and AG75 of IAS 39 indicates that the objective when measuring fair value for all financial assets and liabilities is to establish what the transaction price would have been on the measurement date for an *individual* instrument. The Board observes that blockage factors are often meant to adjust for the illiquidity of a large position of individual financial instruments that might be held by the entity. However, the illiquidity of an individual instrument is not affected by the size of a position held by an entity. If a financial instrument is not traded in an active market and the illiquidity affects the price that a market participant would pay for an individual financial asset or require for an individual financial liability the fair value measurement should reflect that illiquidity. However, the adjustment should not consider the size of the position held by the entity. Therefore, the IASB concluded that a blockage factor adjustment should be prohibited at all levels of the hierarchy.

Question for respondents

Q20 Do you agree with the provision of SFAS 157 that a blockage adjustment should be prohibited for financial instruments when there is a price for the financial instrument in an active market (Level 1)? In addition, do you agree that this provision should apply as a principle to all levels of the hierarchy? Please provide a basis for your views.

Issue 10. Measuring fair value within the bid-ask spread

- 50 Some inputs to a fair value measurement are based on bid and ask prices, for example, in a dealer market for financial assets and liabilities in which the bid price represents the price at which the dealer is willing to buy and the ask price represents the price at which the dealer is willing to sell. Paragraph 31 of SFAS 157 establishes the principle that if an input is based on bid and ask prices, the price within the bid-ask spread that is most representative of fair value in the circumstances is used to measure fair value. However, SFAS 157 does not preclude the use of mid-market

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pricing or another pricing convention as a practical expedient for fair value measurements within a bid-ask spread. This guidance applies to inputs used in fair value measurements in all levels of the fair value hierarchy. As such, entities may indirectly compute or infer a bid-ask spread adjustment even if a spread cannot be observed.

- 51 IFRSs generally require assets to be measured at the bid price and liabilities to be measured at the ask price when they are measured at fair value. For example, this is the case in IAS 36, IAS 38 *Intangible Assets* and IAS 39. Furthermore, an entity is allowed to use a mid-market pricing convention only for financial assets and liabilities with offsetting market risks (paragraph AG72 of IAS 39). Bid-ask pricing guidance in IFRSs is discussed only in terms of observable market prices. No bid-ask spread guidance is provided for valuation techniques when there is no active market. Finally, paragraph AG70 of IAS 39 defines the term 'the bid-ask spread' to include only transaction costs. Other adjustments to arrive at fair value (eg for counterparty credit risk) are not included in the term 'bid-ask spread'. This definition may need modification if the bid-ask approach in SFAS 157 were adopted by the IASB.
- 52 The IASB reached the preliminary view that fair value measurements should be determined using the price within the bid-ask spread that is most representative of fair value in the circumstances, as provided in paragraph 31 of SFAS 157. In reaching this preliminary view, the IASB noted that different entities in different markets carry out transactions at different points within a bid-ask spread.
- 53 The IASB has not yet reached a preliminary view on whether it is appropriate to use mid-market pricing or another pricing convention as a practical expedient for fair value measurements within a bid-ask spread, even if the pricing convention is applied on a consistent basis. The IASB has also not reached a preliminary view on whether bid-ask

guidance should apply only when bid and ask prices are observable in a market, or whether the concept should apply more broadly to fair value measurements in all levels of the hierarchy. The IASB seeks respondents' views on these matters.

Questions for respondents

- Q21** Do you agree that fair value measurements should be determined using the price within the bid-ask spread that is most representative of fair value in the circumstances, as prescribed by paragraph 31 of SFAS 157? Alternatively, do you believe that the guidance contained in IFRSs, which generally requires assets to be valued at the bid price and liabilities at the ask price, is more appropriate? Please explain the basis for your view.
- Q22** Should a pricing convention (such as mid-market pricing or bid price for assets and ask price for liabilities) be allowed even when another price within the bid-ask spread might be more representative of fair value? Why or why not?
- Q23** Should bid-ask pricing guidance apply to all levels of the hierarchy, including when the fair value measurement includes unobservable inputs? Why or why not?

Issue 11. Disclosures

- 54 SFAS 157 requires disclosures that are designed to enable users of financial statements to assess the extent to which fair value is used to measure assets and liabilities recognised in the financial statements, both on a recurring basis and on a non-recurring basis in periods after initial recognition. In developing an exposure draft the IASB will consider these disclosure requirements in conjunction with disclosures required by other IFRSs.

Question for respondents

Q24 Do the disclosure requirements of SFAS 157 provide sufficient information? If not, what additional disclosures do you believe would be helpful to users and why? Alternatively, are there disclosures required by SFAS 157 that you believe are excessive or not beneficial when considered in conjunction with other disclosures required by IFRSs? Please provide a basis for your view.

Issue 12. Application guidance

- 55 The application guidance in Appendix A of SFAS 157 illustrates the provisions and guidance of the standard. Additionally, Appendix B of SFAS 157 provides guidance for using present value techniques to measure fair value. IFRSs require assets and liabilities to be measured at fair value in situations in which US GAAP does not. For example, biological assets are measured at fair value less estimated point-of-sale costs under IAS 41 whereas there is no such requirement in US GAAP. As such, additional application guidance might be necessary to illustrate how the provisions of a standard on the measurement of fair value would be applied under IFRSs. The IASB seeks views from respondents on what additional application guidance might be needed.
- 56 The IASB believes that the principles established in the Fair Value Measurements project should apply to all fair value measurements in all jurisdictions. However, it acknowledges that entities in emerging and developing economies might need additional guidance in order to apply the requirements of a fair value measurements standard. Such guidance

could be provided through educational outreach or through additional implementation guidance that would accompany a fair value measurements standard. The IASB invites suggestions from respondents on how best to address the needs of emerging and developing economies.

Questions for respondents

Q25 Does the guidance in Appendices A and B of SFAS 157 sufficiently illustrate the standard's principles and provisions as they would apply under IFRSs? If not, please specify what additional guidance you believe is needed and why.

Q26 Does the guidance in Appendices A and B of SFAS 157 sufficiently illustrate the standard's principles and provisions as they would apply in emerging or developing markets? If not, please specify what additional guidance you believe is needed and the most effective way to provide this guidance (for example, through additional implementation guidance or through focused education efforts).

Issue 13. Other matters

57 The IASB welcomes comments, suggestions and views from respondents on any other matters relating to the discussion paper and the Fair Value Measurements project.

Question for respondents

Q27 Please provide comments on any other matters raised by the discussion paper.

Appendix

Fair value measurement guidance in IFRSs

This appendix contains excerpts of fair value measurement guidance contained in IFRSs and is provided to assist readers in considering the provisions of SFAS 157 and the discussion in the Invitation to Comment. The appendix includes only measurement guidance. It does not include excerpts from IFRSs discussing when assets, liabilities or other items are required to be measured at fair value or discussing reliability requirements for fair value measurements. These items have not been included because they are beyond the scope of the Fair Value Measurements project. As noted in the Invitation to Comment, the IASB will not use this project to change when fair value is required or to modify reliability requirements in IFRSs. These matters will be considered separately project by project.

Additionally, as noted in paragraph 8 of the Invitation to Comment, some IFRSs include measurement guidance that results in a measurement that is treated as fair value even though the guidance is not consistent with the fair value measurement objective. For example, paragraph B16 of IFRS 3 *Business Combinations* provides measurement guidance that is inconsistent with the fair value measurement objective for items such as tax assets, tax liabilities and net employee benefit assets or liabilities for defined benefit plans acquired in a business combination. This project will not change any of that guidance. However, that guidance will be differentiated from fair value to articulate the measurement objective more clearly.

Extracts from IFRS 2 *Share-based Payment*

Transactions measured by reference to the fair value of the equity instruments granted

Determining the fair value of equity instruments granted

- 16 For transactions measured by reference to the fair value of the equity instruments granted, an entity shall measure the fair value of equity instruments granted at the measurement date, based on market prices if available, taking into account the terms and conditions upon which those equity instruments were granted (subject to the requirements of paragraphs 19–22).
- 17 If market prices are not available, the entity shall estimate the fair value of the equity instruments granted using a valuation technique to estimate what the price of those equity instruments would have been on the measurement date in an arm's length transaction between knowledgeable, willing parties. The valuation technique shall be consistent with generally accepted valuation methodologies for pricing financial instruments, and shall incorporate all factors and assumptions that knowledgeable, willing market participants would consider in setting the price (subject to the requirements of paragraphs 19–22).
- 18 Appendix B contains further guidance on the measurement of the fair value of shares and share options, focusing on the specific terms and conditions that are common features of a grant of shares or share options to employees.

Treatment of vesting conditions

- 19 A grant of equity instruments might be conditional upon satisfying specified vesting conditions. For example, a grant of shares or share options to an employee is typically conditional on the employee remaining in the entity's employ for a specified period of time. There might be performance conditions that must be satisfied, such as the entity achieving a specified growth in profit or a specified increase in the entity's share price. Vesting conditions, other than market conditions, shall not be taken into account when estimating the fair value of the shares or share options at the measurement date. Instead, vesting conditions shall be taken into account by adjusting the number of equity instruments included in the measurement of the transaction amount so that, ultimately, the amount recognised for goods or services received as consideration for the equity instruments granted shall be based on the

number of equity instruments that eventually vest. Hence, on a cumulative basis, no amount is recognised for goods or services received if the equity instruments granted do not vest because of failure to satisfy a vesting condition, eg the counterparty fails to complete a specified service period, or a performance condition is not satisfied, subject to the requirements of paragraph 21.

- 20 To apply the requirements of paragraph 19, the entity shall recognise an amount for the goods or services received during the vesting period based on the best available estimate of the number of equity instruments expected to vest and shall revise that estimate, if necessary, if subsequent information indicates that the number of equity instruments expected to vest differs from previous estimates. On vesting date, the entity shall revise the estimate to equal the number of equity instruments that ultimately vested, subject to the requirements of paragraph 21.
- 21 Market conditions, such as a target share price upon which vesting (or exercisability) is conditioned, shall be taken into account when estimating the fair value of the equity instruments granted. Therefore, for grants of equity instruments with market conditions, the entity shall recognise the goods or services received from a counterparty who satisfies all other vesting conditions (eg services received from an employee who remains in service for the specified period of service), irrespective of whether that market condition is satisfied.

Treatment of a reload feature

- 22 For options with a reload feature, the reload feature shall not be taken into account when estimating the fair value of options granted at the measurement date. Instead, a reload option shall be accounted for as a new option grant, if and when a reload option is subsequently granted.

After vesting date

- 23 Having recognised the goods or services received in accordance with paragraphs 10–22, and a corresponding increase in equity, the entity shall make no subsequent adjustment to total equity after vesting date. For example, the entity shall not subsequently reverse the amount recognised for services received from an employee if the vested equity

instruments are later forfeited or, in the case of share options, the options are not exercised. However, this requirement does not preclude the entity from recognising a transfer within equity, ie a transfer from one component of equity to another.

* * * * *

Appendix B

Application Guidance

This appendix is an integral part of the IFRS.

Estimating the fair value of equity instruments granted

B1 Paragraphs B2–B41 of this appendix discuss measurement of the fair value of shares and share options granted, focusing on the specific terms and conditions that are common features of a grant of shares or share options to employees. Therefore, it is not exhaustive. Furthermore, because the valuation issues discussed below focus on shares and share options granted to employees, it is assumed that the fair value of the shares or share options is measured at grant date. However, many of the valuation issues discussed below (eg determining expected volatility) also apply in the context of estimating the fair value of shares or share options granted to parties other than employees at the date the entity obtains the goods or the counterparty renders service.

Shares

B2 For shares granted to employees, the fair value of the shares shall be measured at the market price of the entity's shares (or an estimated market price, if the entity's shares are not publicly traded), adjusted to take into account the terms and conditions upon which the shares were granted (except for vesting conditions that are excluded from the measurement of fair value in accordance with paragraphs 19–21).

B3 For example, if the employee is not entitled to receive dividends during the vesting period, this factor shall be taken into account when estimating the fair value of the shares granted. Similarly, if the shares are subject to restrictions on transfer after vesting date, that factor shall be taken into account, but only to the extent that the post-vesting restrictions affect the price that a knowledgeable, willing market participant would pay for that share. For example, if the shares are actively traded in a deep and liquid market, post-vesting transfer

restrictions may have little, if any, effect on the price that a knowledgeable, willing market participant would pay for those shares. Restrictions on transfer or other restrictions that exist during the vesting period shall not be taken into account when estimating the grant date fair value of the shares granted, because those restrictions stem from the existence of vesting conditions, which are accounted for in accordance with paragraphs 19–21.

Share options

- B4 For share options granted to employees, in many cases market prices are not available, because the options granted are subject to terms and conditions that do not apply to traded options. If traded options with similar terms and conditions do not exist, the fair value of the options granted shall be estimated by applying an option pricing model.
- B5 The entity shall consider factors that knowledgeable, willing market participants would consider in selecting the option pricing model to apply. For example, many employee options have long lives, are usually exercisable during the period between vesting date and the end of the options' life, and are often exercised early. These factors should be considered when estimating the grant date fair value of the options. For many entities, this might preclude the use of the Black-Scholes-Merton formula, which does not allow for the possibility of exercise before the end of the option's life and may not adequately reflect the effects of expected early exercise. It also does not allow for the possibility that expected volatility and other model inputs might vary over the option's life. However, for share options with relatively short contractual lives, or that must be exercised within a short period of time after vesting date, the factors identified above may not apply. In these instances, the Black-Scholes-Merton formula may produce a value that is substantially the same as a more flexible option pricing model.
- B6 All option pricing models take into account, as a minimum, the following factors:
- (a) the exercise price of the option;
 - (b) the life of the option;
 - (c) the current price of the underlying shares;
 - (d) the expected volatility of the share price;
 - (e) the dividends expected on the shares (if appropriate); and
 - (f) the risk-free interest rate for the life of the option.

- B7 Other factors that knowledgeable, willing market participants would consider in setting the price shall also be taken into account (except for vesting conditions and reload features that are excluded from the measurement of fair value in accordance with paragraphs 19–22).
- B8 For example, a share option granted to an employee typically cannot be exercised during specified periods (eg during the vesting period or during periods specified by securities regulators). This factor shall be taken into account if the option pricing model applied would otherwise assume that the option could be exercised at any time during its life. However, if an entity uses an option pricing model that values options that can be exercised only at the end of the options' life, no adjustment is required for the inability to exercise them during the vesting period (or other periods during the options' life), because the model assumes that the options cannot be exercised during those periods.
- B9 Similarly, another factor common to employee share options is the possibility of early exercise of the option, for example, because the option is not freely transferable, or because the employee must exercise all vested options upon cessation of employment. The effects of expected early exercise shall be taken into account, as discussed in paragraphs B16–B21.
- B10 Factors that a knowledgeable, willing market participant would not consider in setting the price of a share option (or other equity instrument) shall not be taken into account when estimating the fair value of share options (or other equity instruments) granted. For example, for share options granted to employees, factors that affect the value of the option from the individual employee's perspective only are not relevant to estimating the price that would be set by a knowledgeable, willing market participant.

Inputs to option pricing models

- B11 In estimating the expected volatility of and dividends on the underlying shares, the objective is to approximate the expectations that would be reflected in a current market or negotiated exchange price for the option. Similarly, when estimating the effects of early exercise of employee share options, the objective is to approximate the expectations that an outside party with access to detailed information about employees' exercise behaviour would develop based on information available at the grant date.

- B12 Often, there is likely to be a range of reasonable expectations about future volatility, dividends and exercise behaviour. If so, an expected value should be calculated, by weighting each amount within the range by its associated probability of occurrence.
- B13 Expectations about the future are generally based on experience, modified if the future is reasonably expected to differ from the past. In some circumstances, identifiable factors may indicate that unadjusted historical experience is a relatively poor predictor of future experience. For example, if an entity with two distinctly different lines of business disposes of the one that was significantly less risky than the other, historical volatility may not be the best information on which to base reasonable expectations for the future.
- B14 In other circumstances, historical information may not be available. For example, a newly listed entity will have little, if any, historical data on the volatility of its share price. Unlisted and newly listed entities are discussed further below.
- B15 In summary, an entity should not simply base estimates of volatility, exercise behaviour and dividends on historical information without considering the extent to which the past experience is expected to be reasonably predictive of future experience.

Expected early exercise

- B16 Employees often exercise share options early, for a variety of reasons. For example, employee share options are typically non-transferable. This often causes employees to exercise their share options early, because that is the only way for the employees to liquidate their position. Also, employees who cease employment are usually required to exercise any vested options within a short period of time, otherwise the share options are forfeited. This factor also causes the early exercise of employee share options. Other factors causing early exercise are risk aversion and lack of wealth diversification.
- B17 The means by which the effects of expected early exercise are taken into account depends upon the type of option pricing model applied. For example, expected early exercise could be taken into account by using an estimate of the option's expected life (which, for an employee share option, is the period of time from grant date to the date on which the option is expected to be exercised) as an input into an option pricing model (eg the Black-Scholes-Merton formula). Alternatively, expected early exercise could be modelled in a binomial or similar option pricing model that uses contractual life as an input.

- B18 Factors to consider in estimating early exercise include:
- (a) the length of the vesting period, because the share option typically cannot be exercised until the end of the vesting period. Hence, determining the valuation implications of expected early exercise is based on the assumption that the options will vest. The implications of vesting conditions are discussed in paragraphs 19–21.
 - (b) the average length of time similar options have remained outstanding in the past.
 - (c) the price of the underlying shares. Experience may indicate that the employees tend to exercise options when the share price reaches a specified level above the exercise price.
 - (d) the employee’s level within the organisation. For example, experience might indicate that higher-level employees tend to exercise options later than lower-level employees (discussed further in paragraph B21).
 - (e) expected volatility of the underlying shares. On average, employees might tend to exercise options on highly volatile shares earlier than on shares with low volatility.
- B19 As noted in paragraph B17, the effects of early exercise could be taken into account by using an estimate of the option’s expected life as an input into an option pricing model. When estimating the expected life of share options granted to a group of employees, the entity could base that estimate on an appropriately weighted average expected life for the entire employee group or on appropriately weighted average lives for subgroups of employees within the group, based on more detailed data about employees’ exercise behaviour (discussed further below).
- B20 Separating an option grant into groups for employees with relatively homogeneous exercise behaviour is likely to be important. Option value is not a linear function of option term; value increases at a decreasing rate as the term lengthens. For example, if all other assumptions are equal, although a two-year option is worth more than a one-year option, it is not worth twice as much. That means that calculating estimated option value on the basis of a single weighted average life that includes widely differing individual lives would overstate the total fair value of the share options granted. Separating options granted into several groups, each of which has a relatively narrow range of lives included in its weighted average life, reduces that overstatement.

- B21 Similar considerations apply when using a binomial or similar model. For example, the experience of an entity that grants options broadly to all levels of employees might indicate that top-level executives tend to hold their options longer than middle-management employees hold theirs and that lower-level employees tend to exercise their options earlier than any other group. In addition, employees who are encouraged or required to hold a minimum amount of their employer's equity instruments, including options, might on average exercise options later than employees not subject to that provision. In those situations, separating options by groups of recipients with relatively homogeneous exercise behaviour will result in a more accurate estimate of the total fair value of the share options granted.

Expected volatility

- B22 Expected volatility is a measure of the amount by which a price is expected to fluctuate during a period. The measure of volatility used in option pricing models is the annualised standard deviation of the continuously compounded rates of return on the share over a period of time. Volatility is typically expressed in annualised terms that are comparable regardless of the time period used in the calculation, for example, daily, weekly or monthly price observations.
- B23 The rate of return (which may be positive or negative) on a share for a period measures how much a shareholder has benefited from dividends and appreciation (or depreciation) of the share price.
- B24 The expected annualised volatility of a share is the range within which the continuously compounded annual rate of return is expected to fall approximately two-thirds of the time. For example, to say that a share with an expected continuously compounded rate of return of 12 per cent has a volatility of 30 per cent means that the probability that the rate of return on the share for one year will be between -18 per cent (12% - 30%) and 42 per cent (12% + 30%) is approximately two-thirds. If the share price is CU100 at the beginning of the year and no dividends are paid, the year-end share price would be expected to be between CU83.53 ($CU100 \times e^{-0.18}$) and CU152.20 ($CU100 \times e^{0.42}$) approximately two-thirds of the time.
- B25 Factors to consider in estimating expected volatility include:
- (a) implied volatility from traded share options on the entity's shares, or other traded instruments of the entity that include option features (such as convertible debt), if any.

- (b) the historical volatility of the share price over the most recent period that is generally commensurate with the expected term of the option (taking into account the remaining contractual life of the option and the effects of expected early exercise).
- (c) the length of time an entity's shares have been publicly traded. A newly listed entity might have a high historical volatility, compared with similar entities that have been listed longer. Further guidance for newly listed entities is given below.
- (d) the tendency of volatility to revert to its mean, ie its long-term average level, and other factors indicating that expected future volatility might differ from past volatility. For example, if an entity's share price was extraordinarily volatile for some identifiable period of time because of a failed takeover bid or a major restructuring, that period could be disregarded in computing historical average annual volatility.
- (e) appropriate and regular intervals for price observations. The price observations should be consistent from period to period. For example, an entity might use the closing price for each week or the highest price for the week, but it should not use the closing price for some weeks and the highest price for other weeks. Also, the price observations should be expressed in the same currency as the exercise price.

Newly listed entities

- B26 As noted in paragraph B25, an entity should consider historical volatility of the share price over the most recent period that is generally commensurate with the expected option term. If a newly listed entity does not have sufficient information on historical volatility, it should nevertheless compute historical volatility for the longest period for which trading activity is available. It could also consider the historical volatility of similar entities following a comparable period in their lives. For example, an entity that has been listed for only one year and grants options with an average expected life of five years might consider the pattern and level of historical volatility of entities in the same industry for the first six years in which the shares of those entities were publicly traded.

Unlisted entities

- B27 An unlisted entity will not have historical information to consider when estimating expected volatility. Some factors to consider instead are set out below.
- B28 In some cases, an unlisted entity that regularly issues options or shares to employees (or other parties) might have set up an internal market for its shares. The volatility of those share prices could be considered when estimating expected volatility.
- B29 Alternatively, the entity could consider the historical or implied volatility of similar listed entities, for which share price or option price information is available, to use when estimating expected volatility. This would be appropriate if the entity has based the value of its shares on the share prices of similar listed entities.
- B30 If the entity has not based its estimate of the value of its shares on the share prices of similar listed entities, and has instead used another valuation methodology to value its shares, the entity could derive an estimate of expected volatility consistent with that valuation methodology. For example, the entity might value its shares on a net asset or earnings basis. It could consider the expected volatility of those net asset values or earnings.

Expected dividends

- B31 Whether expected dividends should be taken into account when measuring the fair value of shares or options granted depends on whether the counterparty is entitled to dividends or dividend equivalents.
- B32 For example, if employees were granted options and are entitled to dividends on the underlying shares or dividend equivalents (which might be paid in cash or applied to reduce the exercise price) between grant date and exercise date, the options granted should be valued as if no dividends will be paid on the underlying shares, ie the input for expected dividends should be zero.
- B33 Similarly, when the grant date fair value of shares granted to employees is estimated, no adjustment is required for expected dividends if the employee is entitled to receive dividends paid during the vesting period.

- B34 Conversely, if the employees are not entitled to dividends or dividend equivalents during the vesting period (or before exercise, in the case of an option), the grant date valuation of the rights to shares or options should take expected dividends into account. That is to say, when the fair value of an option grant is estimated, expected dividends should be included in the application of an option pricing model. When the fair value of a share grant is estimated, that valuation should be reduced by the present value of dividends expected to be paid during the vesting period.
- B35 Option pricing models generally call for expected dividend yield. However, the models may be modified to use an expected dividend amount rather than a yield. An entity may use either its expected yield or its expected payments. If the entity uses the latter, it should consider its historical pattern of increases in dividends. For example, if an entity's policy has generally been to increase dividends by approximately 3 per cent per year, its estimated option value should not assume a fixed dividend amount throughout the option's life unless there is evidence that supports that assumption.
- B36 Generally, the assumption about expected dividends should be based on publicly available information. An entity that does not pay dividends and has no plans to do so should assume an expected dividend yield of zero. However, an emerging entity with no history of paying dividends might expect to begin paying dividends during the expected lives of its employee share options. Those entities could use an average of their past dividend yield (zero) and the mean dividend yield of an appropriately comparable peer group.

Risk-free interest rate

- B37 Typically, the risk-free interest rate is the implied yield currently available on zero-coupon government issues of the country in whose currency the exercise price is expressed, with a remaining term equal to the expected term of the option being valued (based on the option's remaining contractual life and taking into account the effects of expected early exercise). It may be necessary to use an appropriate substitute, if no such government issues exist or circumstances indicate that the implied yield on zero-coupon government issues is not representative of the risk-free interest rate (for example, in high inflation economies). Also, an appropriate substitute should be used if market participants would typically determine the risk-free interest rate by using that substitute, rather than the implied yield of zero-coupon government issues, when estimating the fair value of an option with a life equal to the expected term of the option being valued.

Capital structure effects

- B38 Typically, third parties, not the entity, write traded share options. When these share options are exercised, the writer delivers shares to the option holder. Those shares are acquired from existing shareholders. Hence the exercise of traded share options has no dilutive effect.
- B39 In contrast, if share options are written by the entity, new shares are issued when those share options are exercised (either actually issued or issued in substance, if shares previously repurchased and held in treasury are used). Given that the shares will be issued at the exercise price rather than the current market price at the date of exercise, this actual or potential dilution might reduce the share price, so that the option holder does not make as large a gain on exercise as on exercising an otherwise similar traded option that does not dilute the share price.
- B40 Whether this has a significant effect on the value of the share options granted depends on various factors, such as the number of new shares that will be issued on exercise of the options compared with the number of shares already issued. Also, if the market already expects that the option grant will take place, the market may have already factored the potential dilution into the share price at the date of grant.
- B41 However, the entity should consider whether the possible dilutive effect of the future exercise of the share options granted might have an impact on their estimated fair value at grant date. Option pricing models can be adapted to take into account this potential dilutive effect.

Modifications to equity-settled share-based payment arrangements

- B42 Paragraph 27 requires that, irrespective of any modifications to the terms and conditions on which the equity instruments were granted, or a cancellation or settlement of that grant of equity instruments, the entity should recognise, as a minimum, the services received measured at the grant date fair value of the equity instruments granted, unless those equity instruments do not vest because of failure to satisfy a vesting condition (other than a market condition) that was specified at grant date. In addition, the entity should recognise the effects of modifications that increase the total fair value of the share-based payment arrangement or are otherwise beneficial to the employee.

- B43 To apply the requirements of paragraph 27:
- (a) if the modification increases the fair value of the equity instruments granted (eg by reducing the exercise price), measured immediately before and after the modification, the entity shall include the incremental fair value granted in the measurement of the amount recognised for services received as consideration for the equity instruments granted. The incremental fair value granted is the difference between the fair value of the modified equity instrument and that of the original equity instrument, both estimated as at the date of the modification. If the modification occurs during the vesting period, the incremental fair value granted is included in the measurement of the amount recognised for services received over the period from the modification date until the date when the modified equity instruments vest, in addition to the amount based on the grant date fair value of the original equity instruments, which is recognised over the remainder of the original vesting period. If the modification occurs after vesting date, the incremental fair value granted is recognised immediately, or over the vesting period if the employee is required to complete an additional period of service before becoming unconditionally entitled to those modified equity instruments.
 - (b) similarly, if the modification increases the number of equity instruments granted, the entity shall include the fair value of the additional equity instruments granted, measured at the date of the modification, in the measurement of the amount recognised for services received as consideration for the equity instruments granted, consistently with the requirements in (a) above. For example, if the modification occurs during the vesting period, the fair value of the additional equity instruments granted is included in the measurement of the amount recognised for services received over the period from the modification date until the date when the additional equity instruments vest, in addition to the amount based on the grant date fair value of the equity instruments originally granted, which is recognised over the remainder of the original vesting period.
 - (c) if the entity modifies the vesting conditions in a manner that is beneficial to the employee, for example, by reducing the vesting period or by modifying or eliminating a performance condition (other than a market condition, changes to which are accounted for

in accordance with (a) above), the entity shall take the modified vesting conditions into account when applying the requirements of paragraphs 19–21.

- B44 Furthermore, if the entity modifies the terms or conditions of the equity instruments granted in a manner that reduces the total fair value of the share-based payment arrangement, or is not otherwise beneficial to the employee, the entity shall nevertheless continue to account for the services received as consideration for the equity instruments granted as if that modification had not occurred (other than a cancellation of some or all the equity instruments granted, which shall be accounted for in accordance with paragraph 28). For example:
- (a) if the modification reduces the fair value of the equity instruments granted, measured immediately before and after the modification, the entity shall not take into account that decrease in fair value and shall continue to measure the amount recognised for services received as consideration for the equity instruments based on the grant date fair value of the equity instruments granted.
 - (b) if the modification reduces the number of equity instruments granted to an employee, that reduction shall be accounted for as a cancellation of that portion of the grant, in accordance with the requirements of paragraph 28.
 - (c) if the entity modifies the vesting conditions in a manner that is not beneficial to the employee, for example, by increasing the vesting period or by modifying or adding a performance condition (other than a market condition, changes to which are accounted for in accordance with (a) above), the entity shall not take the modified vesting conditions into account when applying the requirements of paragraphs 19–21.

Extracts from IFRS 3 *Business Combinations*

Application of the purchase method

Cost of a business combination

- 27 The published price at the date of exchange of a quoted equity instrument provides the best evidence of the instrument's fair value and shall be used, except in rare circumstances. Other evidence and valuation methods shall be considered only in the rare circumstances when the acquirer can demonstrate that the published price at the date of exchange is an unreliable indicator of fair value, and that the other evidence and valuation methods provide a more reliable measure of the equity instrument's fair value. The published price at the date of exchange is an unreliable indicator only when it has been affected by the thinness of the market. If the published price at the date of exchange is an unreliable indicator or if a published price does not exist for equity instruments issued by the acquirer, the fair value of those instruments could, for example, be estimated by reference to their proportional interest in the fair value of the acquirer or by reference to the proportional interest in the fair value of the acquiree obtained, whichever is the more clearly evident. The fair value at the date of exchange of monetary assets given to equity holders of the acquiree as an alternative to equity instruments may also provide evidence of the total fair value given by the acquirer in exchange for control of the acquiree. In any event, all aspects of the combination, including significant factors influencing the negotiations, shall be considered. Further guidance on determining the fair value of equity instruments is set out in IAS 39 *Financial Instruments: Recognition and Measurement*.

* * * * *

Appendix B

Application Supplement

This appendix is an integral part of the IFRS.

Allocating the cost of a business combination

- B16 This IFRS requires an acquirer to recognise the acquiree's identifiable assets, liabilities and contingent liabilities that satisfy the relevant recognition criteria at their fair values at the acquisition date. For the purpose of allocating the cost of a business combination, the acquirer shall treat the following measures as fair values:
- (a) for financial instruments traded in an active market the acquirer shall use current market values.
 - (b) for financial instruments not traded in an active market the acquirer shall use estimated values that take into consideration features such as price-earnings ratios, dividend yields and expected growth rates of comparable instruments of entities with similar characteristics.
 - (c) for receivables, beneficial contracts and other identifiable assets the acquirer shall use the present values of the amounts to be received, determined at appropriate current interest rates, less allowances for uncollectibility and collection costs, if necessary. However, discounting is not required for short-term receivables, beneficial contracts and other identifiable assets when the difference between the nominal and discounted amounts is not material.
 - (d) for inventories of:
 - (i) finished goods and merchandise the acquirer shall use selling prices less the sum of (1) the costs of disposal and (2) a reasonable profit allowance for the selling effort of the acquirer based on profit for similar finished goods and merchandise;
 - (ii) work in progress the acquirer shall use selling prices of finished goods less the sum of (1) costs to complete, (2) costs of disposal and (3) a reasonable profit allowance for the completing and selling effort based on profit for similar finished goods; and

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- (iii) raw materials the acquirer shall use current replacement costs.
- (e) for land and buildings the acquirer shall use market values.
- (f) for plant and equipment the acquirer shall use market values, normally determined by appraisal. If there is no market-based evidence of fair value because of the specialised nature of the item of plant and equipment and the item is rarely sold, except as part of a continuing business, an acquirer may need to estimate fair value using an income or a depreciated replacement cost approach.
- (g) for intangible assets the acquirer shall determine fair value:
 - (i) by reference to an active market as defined in IAS 38 *Intangible Assets*; or
 - (ii) if no active market exists, on a basis that reflects the amounts the acquirer would have paid for the assets in arm's length transactions between knowledgeable willing parties, based on the best information available (see IAS 38 for further guidance on determining the fair values of intangible assets acquired in business combinations).
- (h) for net employee benefit assets or liabilities for defined benefit plans the acquirer shall use the present value of the defined benefit obligation less the fair value of any plan assets. However, an asset is recognised only to the extent that it is probable it will be available to the acquirer in the form of refunds from the plan or a reduction in future contributions.
- (i) for tax assets and liabilities the acquirer shall use the amount of the tax benefit arising from tax losses or the taxes payable in respect of profit or loss in accordance with IAS 12 *Income Taxes*, assessed from the perspective of the combined entity. The tax asset or liability is determined after allowing for the tax effect of restating identifiable assets, liabilities and contingent liabilities to their fair values and is not discounted.
- (j) for accounts and notes payable, long-term debt, liabilities, accruals and other claims payable the acquirer shall use the present values of amounts to be disbursed in settling the liabilities determined at appropriate current interest rates. However, discounting is not required for short-term liabilities when the difference between the nominal and discounted amounts is not material.

APPENDIX—FAIR VALUE MEASUREMENT GUIDANCE IN IFRSS

- (k) for onerous contracts and other identifiable liabilities of the acquiree the acquirer shall use the present values of amounts to be disbursed in settling the obligations determined at appropriate current interest rates.
 - (l) for contingent liabilities of the acquiree the acquirer shall use the amounts that a third party would charge to assume those contingent liabilities. Such an amount shall reflect all expectations about possible cash flows and not the single most likely or the expected maximum or minimum cash flow.
- B17 Some of the above guidance requires fair values to be estimated using present value techniques. If the guidance for a particular item does not refer to the use of present value techniques, such techniques may be used in estimating the fair value of that item.

Extract from IAS 2 *Inventories*

Definitions

- 6 The following terms are used in this Standard with the meanings specified:

...

***Net realisable value* is the estimated selling price in the ordinary course of business less the estimated costs of completion and the estimated costs necessary to make the sale.**

***Fair value* is the amount for which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties in an arm's length transaction.**

- 7 Net realisable value refers to the net amount that an entity expects to realise from the sale of inventory in the ordinary course of business. Fair value reflects the amount for which the same inventory could be exchanged between knowledgeable and willing buyers and sellers in the marketplace. The former is an entity-specific value; the latter is not. Net realisable value for inventories may not equal fair value less costs to sell.

Extract from IAS 16 *Property, Plant and Equipment*

Measurement after recognition

Revaluation model

- 32 The fair value of land and buildings is usually determined from market-based evidence by appraisal that is normally undertaken by professionally qualified valuers. The fair value of items of plant and equipment is usually their market value determined by appraisal.
- 33 If there is no market-based evidence of fair value because of the specialised nature of the item of property, plant and equipment and the item is rarely sold, except as part of a continuing business, an entity may need to estimate fair value using an income or a depreciated replacement cost approach.

Extracts from IAS 19 *Employee Benefits*

Post-employment benefits: defined benefit plans

Recognition and measurement: plan assets

Fair value of plan assets

- 102 The fair value of any plan assets is deducted in determining the amount recognised in the balance sheet under paragraph 54. When no market price is available, the fair value of plan assets is estimated; for example, by discounting expected future cash flows using a discount rate that reflects both the risk associated with the plan assets and the maturity or expected disposal date of those assets (or, if they have no maturity, the expected period until the settlement of the related obligation).
- 104 Where plan assets include qualifying insurance policies that exactly match the amount and timing of some or all of the benefits payable under the plan, the fair value of those insurance policies is deemed to be the present value of the related obligations, as described in paragraph 54 (subject to any reduction required if the amounts receivable under the insurance policies are not recoverable in full).
- 104D If the right to reimbursement arises under an insurance policy that exactly matches the amount and timing of some or all of the benefits payable under a defined benefit plan, the fair value of the reimbursement right is deemed to be the present value of the related obligation, as described in paragraph 54 (subject to any reduction required if the reimbursement is not recoverable in full).

Extract from IAS 26 *Accounting and Reporting by Retirement Benefit Plans*

All plans

Valuation of plan assets

- 32 **Retirement benefit plan investments shall be carried at fair value. In the case of marketable securities fair value is market value. Where plan investments are held for which an estimate of fair value is not possible disclosure shall be made of the reason why fair value is not used.**
- 33 In the case of marketable securities fair value is usually market value because this is considered the most useful measure of the securities at the report date and of the investment performance for the period. Those securities that have a fixed redemption value and that have been acquired to match the obligations of the plan, or specific parts thereof, may be carried at amounts based on their ultimate redemption value assuming a constant rate of return to maturity. Where plan investments are held for which an estimate of fair value is not possible, such as total ownership of an entity, disclosure is made of the reason why fair value is not used. To the extent that investments are carried at amounts other than market value or fair value, fair value is generally also disclosed. Assets used in the operations of the fund are accounted for in accordance with the applicable Standards.

Extract from IAS 32 *Financial Instruments: Presentation*

Appendix Application Guidance

This appendix is an integral part of the Standard.

Presentation

Compound financial instruments (paragraphs 28–32)

AG31 A common form of compound financial instrument is a debt instrument with an embedded conversion option, such as a bond convertible into ordinary shares of the issuer, and without any other embedded derivative features. Paragraph 28 requires the issuer of such a financial instrument to present the liability component and the equity component separately on the balance sheet, as follows:

- (a) The issuer's obligation to make scheduled payments of interest and principal is a financial liability that exists as long as the instrument is not converted. On initial recognition, the fair value of the liability component is the present value of the contractually determined stream of future cash flows discounted at the rate of interest applied at that time by the market to instruments of comparable credit status and providing substantially the same cash flows, on the same terms, but without the conversion option.
- (b) The equity instrument is an embedded option to convert the liability into equity of the issuer. The fair value of the option comprises its time value and its intrinsic value, if any. This option has value on initial recognition even when it is out of the money.

Extracts from IAS 36 *Impairment of Assets*

Measuring recoverable amount

Fair value less costs to sell

- 25 The best evidence of an asset's fair value less costs to sell is a price in a binding sale agreement in an arm's length transaction, adjusted for incremental costs that would be directly attributable to the disposal of the asset.
- 26 If there is no binding sale agreement but an asset is traded in an active market, fair value less costs to sell is the asset's market price less the costs of disposal. The appropriate market price is usually the current bid price. When current bid prices are unavailable, the price of the most recent transaction may provide a basis from which to estimate fair value less costs to sell, provided that there has not been a significant change in economic circumstances between the transaction date and the date as at which the estimate is made.
- 27 If there is no binding sale agreement or active market for an asset, fair value less costs to sell is based on the best information available to reflect the amount that an entity could obtain, at the balance sheet date, from the disposal of the asset in an arm's length transaction between knowledgeable, willing parties, after deducting the costs of disposal. In determining this amount, an entity considers the outcome of recent transactions for similar assets within the same industry. Fair value less costs to sell does not reflect a forced sale, unless management is compelled to sell immediately.
- 29 Sometimes, the disposal of an asset would require the buyer to assume a liability and only a single fair value less costs to sell is available for both the asset and the liability. Paragraph 78 explains how to deal with such cases.

Cash-generating units and goodwill

Recoverable amount and carrying amount of a cash-generating unit

- 78 It may be necessary to consider some recognised liabilities to determine the recoverable amount of a cash-generating unit. This may occur if the

disposal of a cash-generating unit would require the buyer to assume the liability. In this case, the fair value less costs to sell (or the estimated cash flow from ultimate disposal) of the cash-generating unit is the estimated selling price for the assets of the cash-generating unit and the liability together, less the costs of disposal. To perform a meaningful comparison between the carrying amount of the cash-generating unit and its recoverable amount, the carrying amount of the liability is deducted in determining both the cash-generating unit's value in use and its carrying amount.

Example

A company operates a mine in a country where legislation requires that the owner must restore the site on completion of its mining operations. The cost of restoration includes the replacement of the overburden, which must be removed before mining operations commence.

A provision for the costs to replace the overburden was recognised as soon as the overburden was removed. The amount provided was recognised as part of the cost of the mine and is being depreciated over the mine's useful life. The carrying amount of the provision for restoration costs is CU500,^(a) which is equal to the present value of the restoration costs.

The entity is testing the mine for impairment. The cash-generating unit for the mine is the mine as a whole. The entity has received various offers to buy the mine at a price of around CU800. This price reflects the fact that the buyer will assume the obligation to restore the overburden. Disposal costs for the mine are negligible. The value in use of the mine is approximately CU1,200, excluding restoration costs. The carrying amount of the mine is CU1,000.

The cash-generating unit's fair value less costs to sell is CU800. This amount considers restoration costs that have already been provided for. As a consequence, the value in use for the cash-generating unit is determined after consideration of the restoration costs and is estimated to be CU700 (CU1,200 less CU500).

The carrying amount of the cash-generating unit is CU500, which is the carrying amount of the mine (CU1,000) less the carrying amount of the provision for restoration costs (CU500). Therefore, the recoverable amount of the cash-generating unit exceeds its carrying amount.

(a) In this Standard, monetary amounts are denominated in 'currency units' (CU).

- 79 For practical reasons, the recoverable amount of a cash-generating unit is sometimes determined after consideration of assets that are not part of the cash-generating unit (for example, receivables or other financial assets) or liabilities that have been recognised (for example, payables, pensions and other provisions). In such cases, the carrying amount of the cash-generating unit is increased by the carrying amount of those assets and decreased by the carrying amount of those liabilities.

Extracts from IAS 38 *Intangible Assets*

Recognition and measurement

Acquisition as part of a business combination

- 33 In accordance with IFRS 3 *Business Combinations*, if an intangible asset is acquired in a business combination, the cost of that intangible asset is its fair value at the acquisition date. The fair value of an intangible asset reflects market expectations about the probability that the future economic benefits embodied in the asset will flow to the entity. In other words, the effect of probability is reflected in the fair value measurement of the intangible asset. Therefore, the probability recognition criterion in paragraph 21(a) is always considered to be satisfied for intangible assets acquired in business combinations.

Measuring the fair value of an intangible asset acquired in a business combination

- 39 Quoted market prices in an active market provide the most reliable estimate of the fair value of an intangible asset (see also paragraph 78). The appropriate market price is usually the current bid price. If current bid prices are unavailable, the price of the most recent similar transaction may provide a basis from which to estimate fair value, provided that there has not been a significant change in economic circumstances between the transaction date and the date at which the asset's fair value is estimated.
- 40 If no active market exists for an intangible asset, its fair value is the amount that the entity would have paid for the asset, at the acquisition date, in an arm's length transaction between knowledgeable and willing parties, on the basis of the best information available. In determining this amount, an entity considers the outcome of recent transactions for similar assets.
- 41 Entities that are regularly involved in the purchase and sale of unique intangible assets may have developed techniques for estimating their fair values indirectly. These techniques may be used for initial measurement of an intangible asset acquired in a business combination if their objective is to estimate fair value and if they reflect current transactions and practices in the industry to which the asset belongs. These techniques include, when appropriate:

- (a) applying multiples reflecting current market transactions to indicators that drive the profitability of the asset (such as revenue, market shares and operating profit) or to the royalty stream that could be obtained from licensing the intangible asset to another party in an arm's length transaction (as in the 'relief from royalty' approach); or
- (b) discounting estimated future net cash flows from the asset.

Measurement after recognition

Revaluation model

- 75 **After initial recognition, an intangible asset shall be carried at a revalued amount, being its fair value at the date of the revaluation less any subsequent accumulated amortisation and any subsequent accumulated impairment losses. For the purpose of revaluations under this Standard, fair value shall be determined by reference to an active market. Revaluations shall be made with such regularity that at the balance sheet date the carrying amount of the asset does not differ materially from its fair value.**

Extracts from IAS 39 *Financial Instruments: Recognition and Measurement*

Measurement

Fair value measurement considerations

- 48** In determining the fair value of a financial asset or a financial liability for the purpose of applying this Standard, IAS 32 or IFRS 7, an entity shall apply paragraphs AG69-AG82 of Appendix A.
- 48A The best evidence of fair value is quoted prices in an active market. If the market for a financial instrument is not active, an entity establishes fair value by using a valuation technique. The objective of using a valuation technique is to establish what the transaction price would have been on the measurement date in an arm's length exchange motivated by normal business considerations. Valuation techniques include using recent arm's length market transactions between knowledgeable, willing parties, if available, reference to the current fair value of another instrument that is substantially the same, discounted cash flow analysis and option pricing models. If there is a valuation technique commonly used by market participants to price the instrument and that technique has been demonstrated to provide reliable estimates of prices obtained in actual market transactions, the entity uses that technique. The chosen valuation technique makes maximum use of market inputs and relies as little as possible on entity-specific inputs. It incorporates all factors that market participants would consider in setting a price and is consistent with accepted economic methodologies for pricing financial instruments. Periodically, an entity calibrates the valuation technique and tests it for validity using prices from any observable current market transactions in the same instrument (ie without modification or repackaging) or based on any available observable market data.
- 49 The fair value of a financial liability with a demand feature (eg a demand deposit) is not less than the amount payable on demand, discounted from the first date that the amount could be required to be paid.

Appendix A Application Guidance

This appendix is an integral part of the Standard.

Measurement (paragraphs 43–70)

Initial measurement of financial assets and financial liabilities (paragraph 43)

- AG64 The fair value of a financial instrument on initial recognition is normally the transaction price (ie the fair value of the consideration given or received, see also paragraph AG76). However, if part of the consideration given or received is for something other than the financial instrument, the fair value of the financial instrument is estimated, using a valuation technique (see paragraphs AG74–AG79). For example, the fair value of a long-term loan or receivable that carries no interest can be estimated as the present value of all future cash receipts discounted using the prevailing market rate(s) of interest for a similar instrument (similar as to currency, term, type of interest rate and other factors) with a similar credit rating. Any additional amount lent is an expense or a reduction of income unless it qualifies for recognition as some other type of asset.
- AG65 If an entity originates a loan that bears an off-market interest rate (eg 5 per cent when the market rate for similar loans is 8 per cent), and receives an up-front fee as compensation, the entity recognises the loan at its fair value, ie net of the fee it receives. The entity accretes the discount to profit or loss using the effective interest rate method.

Fair value measurement considerations (paragraphs 48–49)

- AG69 Underlying the definition of fair value is a presumption that an entity is a going concern without any intention or need to liquidate, to curtail materially the scale of its operations or to undertake a transaction on adverse terms. Fair value is not, therefore, the amount that an entity would receive or pay in a forced transaction, involuntary liquidation or distress sale. However, fair value reflects the credit quality of the instrument.

- AG70 This Standard uses the terms ‘bid price’ and ‘asking price’ (sometimes referred to as ‘current offer price’) in the context of quoted market prices, and the term ‘the bid-ask spread’ to include only transaction costs. Other adjustments to arrive at fair value (eg for counterparty credit risk) are not included in the term ‘bid-ask spread’.

Active market: quoted price

- AG71 A financial instrument is regarded as quoted in an active market if quoted prices are readily and regularly available from an exchange, dealer, broker, industry group, pricing service or regulatory agency, and those prices represent actual and regularly occurring market transactions on an arm’s length basis. Fair value is defined in terms of a price agreed by a willing buyer and a willing seller in an arm’s length transaction. The objective of determining fair value for a financial instrument that is traded in an active market is to arrive at the price at which a transaction would occur at the balance sheet date in that instrument (ie without modifying or repackaging the instrument) in the most advantageous active market to which the entity has immediate access. However, the entity adjusts the price in the more advantageous market to reflect any differences in counterparty credit risk between instruments traded in that market and the one being valued. The existence of published price quotations in an active market is the best evidence of fair value and when they exist they are used to measure the financial asset or financial liability.
- AG72 The appropriate quoted market price for an asset held or liability to be issued is usually the current bid price and, for an asset to be acquired or liability held, the asking price. When an entity has assets and liabilities with offsetting market risks, it may use mid-market prices as a basis for establishing fair values for the offsetting risk positions and apply the bid or asking price to the net open position as appropriate. When current bid and asking prices are unavailable, the price of the most recent transaction provides evidence of the current fair value as long as there has not been a significant change in economic circumstances since the time of the transaction. If conditions have changed since the time of the transaction (eg a change in the risk-free interest rate following the most recent price quote for a corporate bond), the fair value reflects the change in conditions by reference to current prices or rates for similar financial instruments, as appropriate. Similarly, if the entity can demonstrate that the last transaction price is not fair value (eg because it reflected the amount that an entity would receive or pay in a forced transaction, involuntary liquidation or distress sale), that price is adjusted. The fair

value of a portfolio of financial instruments is the product of the number of units of the instrument and its quoted market price. If a published price quotation in an active market does not exist for a financial instrument in its entirety, but active markets exist for its component parts, fair value is determined on the basis of the relevant market prices for the component parts.

- AG73 If a rate (rather than a price) is quoted in an active market, the entity uses that market-quoted rate as an input into a valuation technique to determine fair value. If the market-quoted rate does not include credit risk or other factors that market participants would include in valuing the instrument, the entity adjusts for those factors.

No active market: valuation technique

- AG74 If the market for a financial instrument is not active, an entity establishes fair value by using a valuation technique. Valuation techniques include using recent arm's length market transactions between knowledgeable, willing parties, if available, reference to the current fair value of another instrument that is substantially the same, discounted cash flow analysis and option pricing models. If there is a valuation technique commonly used by market participants to price the instrument and that technique has been demonstrated to provide reliable estimates of prices obtained in actual market transactions, the entity uses that technique.
- AG75 The objective of using a valuation technique is to establish what the transaction price would have been on the measurement date in an arm's length exchange motivated by normal business considerations. Fair value is estimated on the basis of the results of a valuation technique that makes maximum use of market inputs, and relies as little as possible on entity-specific inputs. A valuation technique would be expected to arrive at a realistic estimate of the fair value if (a) it reasonably reflects how the market could be expected to price the instrument and (b) the inputs to the valuation technique reasonably represent market expectations and measures of the risk-return factors inherent in the financial instrument.
- AG76 Therefore, a valuation technique (a) incorporates all factors that market participants would consider in setting a price and (b) is consistent with accepted economic methodologies for pricing financial instruments. Periodically, an entity calibrates the valuation technique and tests it for validity using prices from any observable current market transactions in the same instrument (ie without modification or repackaging) or based on any available observable market data. An entity obtains market data consistently in the same market where the instrument was originated or

purchased. The best evidence of the fair value of a financial instrument at initial recognition is the transaction price (ie the fair value of the consideration given or received) unless the fair value of that instrument is evidenced by comparison with other observable current market transactions in the same instrument (ie without modification or repackaging) or based on a valuation technique whose variables include only data from observable markets.

- AG76A The subsequent measurement of the financial asset or financial liability and the subsequent recognition of gains and losses shall be consistent with the requirements of this Standard. The application of paragraph AG76 may result in no gain or loss being recognised on the initial recognition of a financial asset or financial liability. In such a case, IAS 39 requires that a gain or loss shall be recognised after initial recognition only to the extent that it arises from a change in a factor (including time) that market participants would consider in setting a price.
- AG77 The initial acquisition or origination of a financial asset or incurrence of a financial liability is a market transaction that provides a foundation for estimating the fair value of the financial instrument. In particular, if the financial instrument is a debt instrument (such as a loan), its fair value can be determined by reference to the market conditions that existed at its acquisition or origination date and current market conditions or interest rates currently charged by the entity or by others for similar debt instruments (ie similar remaining maturity, cash flow pattern, currency, credit risk, collateral and interest basis). Alternatively, provided there is no change in the credit risk of the debtor and applicable credit spreads after the origination of the debt instrument, an estimate of the current market interest rate may be derived by using a benchmark interest rate reflecting a better credit quality than the underlying debt instrument, holding the credit spread constant, and adjusting for the change in the benchmark interest rate from the origination date. If conditions have changed since the most recent market transaction, the corresponding change in the fair value of the financial instrument being valued is determined by reference to current prices or rates for similar financial instruments, adjusted as appropriate, for any differences from the instrument being valued.
- AG78 The same information may not be available at each measurement date. For example, at the date that an entity makes a loan or acquires a debt instrument that is not actively traded, the entity has a transaction price that is also a market price. However, no new transaction information may be available at the next measurement date and, although the entity

can determine the general level of market interest rates, it may not know what level of credit or other risk market participants would consider in pricing the instrument on that date. An entity may not have information from recent transactions to determine the appropriate credit spread over the basic interest rate to use in determining a discount rate for a present value computation. It would be reasonable to assume, in the absence of evidence to the contrary, that no changes have taken place in the spread that existed at the date the loan was made. However, the entity would be expected to make reasonable efforts to determine whether there is evidence that there has been a change in such factors. When evidence of a change exists, the entity would consider the effects of the change in determining the fair value of the financial instrument.

- AG79 In applying discounted cash flow analysis, an entity uses one or more discount rates equal to the prevailing rates of return for financial instruments having substantially the same terms and characteristics, including the credit quality of the instrument, the remaining term over which the contractual interest rate is fixed, the remaining term to repayment of the principal and the currency in which payments are to be made. Short-term receivables and payables with no stated interest rate may be measured at the original invoice amount if the effect of discounting is immaterial.

Inputs to valuation techniques

- AG82 An appropriate technique for estimating the fair value of a particular financial instrument would incorporate observable market data about the market conditions and other factors that are likely to affect the instrument's fair value. The fair value of a financial instrument will be based on one or more of the following factors (and perhaps others).
- (a) *The time value of money (ie interest at the basic or risk-free rate).* Basic interest rates can usually be derived from observable government bond prices and are often quoted in financial publications. These rates typically vary with the expected dates of the projected cash flows along a yield curve of interest rates for different time horizons. For practical reasons, an entity may use a well-accepted and readily observable general rate, such as LIBOR or a swap rate, as the benchmark rate. (Because a rate such as LIBOR is not the risk-free interest rate, the credit risk adjustment appropriate to the particular financial instrument is determined on the basis of its credit risk in relation to the credit risk in this benchmark rate.) In some countries, the central government's bonds may carry a significant credit risk and may not provide a stable benchmark

basic interest rate for instruments denominated in that currency. Some entities in these countries may have a better credit standing and a lower borrowing rate than the central government. In such a case, basic interest rates may be more appropriately determined by reference to interest rates for the highest rated corporate bonds issued in the currency of that jurisdiction.

- (b) *Credit risk.* The effect on fair value of credit risk (ie the premium over the basic interest rate for credit risk) may be derived from observable market prices for traded instruments of different credit quality or from observable interest rates charged by lenders for loans of various credit ratings.
- (c) *Foreign currency exchange prices.* Active currency exchange markets exist for most major currencies, and prices are quoted daily in financial publications.
- (d) *Commodity prices.* There are observable market prices for many commodities.
- (e) *Equity prices.* Prices (and indexes of prices) of traded equity instruments are readily observable in some markets. Present value based techniques may be used to estimate the current market price of equity instruments for which there are no observable prices.
- (f) *Volatility (ie magnitude of future changes in price of the financial instrument or other item).* Measures of the volatility of actively traded items can normally be reasonably estimated on the basis of historical market data or by using volatilities implied in current market prices.
- (g) *Prepayment risk and surrender risk.* Expected prepayment patterns for financial assets and expected surrender patterns for financial liabilities can be estimated on the basis of historical data. (The fair value of a financial liability that can be surrendered by the counterparty cannot be less than the present value of the surrender amount—see paragraph 49.)
- (h) *Servicing costs for a financial asset or a financial liability.* Costs of servicing can be estimated using comparisons with current fees charged by other market participants. If the costs of servicing a financial asset or financial liability are significant and other market participants would face comparable costs, the issuer would consider them in determining the fair value of that financial asset

APPENDIX—FAIR VALUE MEASUREMENT GUIDANCE IN IFRSS

or financial liability. It is likely that the fair value at inception of a contractual right to future fees equals the origination costs paid for them, unless future fees and related costs are out of line with market comparables.

Extract from IAS 40 *Investment Property*

Measurement after recognition

Fair value model

- 36 The fair value of investment property is the price at which the property could be exchanged between knowledgeable, willing parties in an arm's length transaction (see paragraph 5). Fair value specifically excludes an estimated price inflated or deflated by special terms or circumstances such as atypical financing, sale and leaseback arrangements, special considerations or concessions granted by anyone associated with the sale.
- 37 An entity determines fair value without any deduction for transaction costs it may incur on sale or other disposal.
- 38 The fair value of investment property shall reflect market conditions at the balance sheet date.**
- 39 Fair value is time-specific as of a given date. Because market conditions may change, the amount reported as fair value may be incorrect or inappropriate if estimated as of another time. The definition of fair value also assumes simultaneous exchange and completion of the contract for sale without any variation in price that might be made in an arm's length transaction between knowledgeable, willing parties if exchange and completion are not simultaneous.
- 40 The fair value of investment property reflects, among other things, rental income from current leases and reasonable and supportable assumptions that represent what knowledgeable, willing parties would assume about rental income from future leases in the light of current conditions. It also reflects, on a similar basis, any cash outflows (including rental payments and other outflows) that could be expected in respect of the property. Some of those outflows are reflected in the liability whereas others relate to outflows that are not recognised in the financial statements until a later date (eg periodic payments such as contingent rents).
- 41 Paragraph 25 specifies the basis for initial recognition of the cost of an interest in a leased property. Paragraph 33 requires the interest in the leased property to be remeasured, if necessary, to fair value. In a lease negotiated at market rates, the fair value of an interest in a leased property at acquisition, net of all expected lease payments (including those relating to recognised liabilities), should be zero. This fair value

does not change regardless of whether, for accounting purposes, a leased asset and liability are recognised at fair value or at the present value of minimum lease payments, in accordance with paragraph 20 of IAS 17. Thus, remeasuring a leased asset from cost in accordance with paragraph 25 to fair value in accordance with paragraph 33 should not give rise to any initial gain or loss, unless fair value is measured at different times. This could occur when an election to apply the fair value model is made after initial recognition.

- 42 The definition of fair value refers to ‘knowledgeable, willing parties’. In this context, ‘knowledgeable’ means that both the willing buyer and the willing seller are reasonably informed about the nature and characteristics of the investment property, its actual and potential uses, and market conditions at the balance sheet date. A willing buyer is motivated, but not compelled, to buy. This buyer is neither over-eager nor determined to buy at any price. The assumed buyer would not pay a higher price than a market comprising knowledgeable, willing buyers and sellers would require.
- 43 A willing seller is neither an over-eager nor a forced seller, prepared to sell at any price, nor one prepared to hold out for a price not considered reasonable in current market conditions. The willing seller is motivated to sell the investment property at market terms for the best price obtainable. The factual circumstances of the actual investment property owner are not a part of this consideration because the willing seller is a hypothetical owner (eg a willing seller would not take into account the particular tax circumstances of the actual investment property owner).
- 44 The definition of fair value refers to an arm’s length transaction. An arm’s length transaction is one between parties that do not have a particular or special relationship that makes prices of transactions uncharacteristic of market conditions. The transaction is presumed to be between unrelated parties, each acting independently.
- 45 The best evidence of fair value is given by current prices in an active market for similar property in the same location and condition and subject to similar lease and other contracts. An entity takes care to identify any differences in the nature, location or condition of the property, or in the contractual terms of the leases and other contracts relating to the property.
- 46 In the absence of current prices in an active market of the kind described in paragraph 45, an entity considers information from a variety of sources, including:

- (a) current prices in an active market for properties of different nature, condition or location (or subject to different lease or other contracts), adjusted to reflect those differences;
 - (b) recent prices of similar properties on less active markets, with adjustments to reflect any changes in economic conditions since the date of the transactions that occurred at those prices; and
 - (c) discounted cash flow projections based on reliable estimates of future cash flows, supported by the terms of any existing lease and other contracts and (when possible) by external evidence such as current market rents for similar properties in the same location and condition, and using discount rates that reflect current market assessments of the uncertainty in the amount and timing of the cash flows.
- 47 In some cases, the various sources listed in the previous paragraph may suggest different conclusions about the fair value of an investment property. An entity considers the reasons for those differences, in order to arrive at the most reliable estimate of fair value within a range of reasonable fair value estimates.
- 48 In exceptional cases, there is clear evidence when an entity first acquires an investment property (or when an existing property first becomes investment property following the completion of construction or development, or after a change in use) that the variability in the range of reasonable fair value estimates will be so great, and the probabilities of the various outcomes so difficult to assess, that the usefulness of a single estimate of fair value is negated. This may indicate that the fair value of the property will not be reliably determinable on a continuing basis (see paragraph 53).
- 49 Fair value differs from value in use, as defined in IAS 36 *Impairment of Assets*. Fair value reflects the knowledge and estimates of knowledgeable, willing buyers and sellers. In contrast, value in use reflects the entity's estimates, including the effects of factors that may be specific to the entity and not applicable to entities in general. For example, fair value does not reflect any of the following factors to the extent that they would not be generally available to knowledgeable, willing buyers and sellers:
- (a) additional value derived from the creation of a portfolio of properties in different locations;
 - (b) synergies between investment property and other assets;

- (c) legal rights or legal restrictions that are specific only to the current owner; and
 - (d) tax benefits or tax burdens that are specific to the current owner.
- 50 In determining the fair value of investment property, an entity does not double-count assets or liabilities that are recognised as separate assets or liabilities. For example:
- (a) equipment such as lifts or air-conditioning is often an integral part of a building and is generally included in the fair value of the investment property, rather than recognised separately as property, plant and equipment.
 - (b) if an office is leased on a furnished basis, the fair value of the office generally includes the fair value of the furniture, because the rental income relates to the furnished office. When furniture is included in the fair value of investment property, an entity does not recognise that furniture as a separate asset.
 - (c) the fair value of investment property excludes prepaid or accrued operating lease income, because the entity recognises it as a separate liability or asset.
 - (d) the fair value of investment property held under a lease reflects expected cash flows (including contingent rent that is expected to become payable). Accordingly, if a valuation obtained for a property is net of all payments expected to be made, it will be necessary to add back any recognised lease liability, to arrive at the fair value of the investment property for accounting purposes.
- 51 The fair value of investment property does not reflect future capital expenditure that will improve or enhance the property and does not reflect the related future benefits from this future expenditure.

Extracts from IAS 41 *Agriculture*

Definitions

General definitions

- 9 The fair value of an asset is based on its present location and condition. As a result, for example, the fair value of cattle at a farm is the price for the cattle in the relevant market less the transport and other costs of getting the cattle to that market.

Recognition and measurement

- 15 The determination of fair value for a biological asset or agricultural produce may be facilitated by grouping biological assets or agricultural produce according to significant attributes; for example, by age or quality. An entity selects the attributes corresponding to the attributes used in the market as a basis for pricing.
- 16 Entities often enter into contracts to sell their biological assets or agricultural produce at a future date. Contract prices are not necessarily relevant in determining fair value, because fair value reflects the current market in which a willing buyer and seller would enter into a transaction. As a result, the fair value of a biological asset or agricultural produce is not adjusted because of the existence of a contract. In some cases, a contract for the sale of a biological asset or agricultural produce may be an onerous contract, as defined in IAS 37 *Provisions, Contingent Liabilities and Contingent Assets*. IAS 37 applies to onerous contracts.
- 17 If an active market exists for a biological asset or agricultural produce, the quoted price in that market is the appropriate basis for determining the fair value of that asset. If an entity has access to different active markets, the entity uses the most relevant one. For example, if an entity has access to two active markets, it would use the price existing in the market expected to be used.
- 18 If an active market does not exist, an entity uses one or more of the following, when available, in determining fair value:
- (a) the most recent market transaction price, provided that there has not been a significant change in economic circumstances between the date of that transaction and the balance sheet date;

- (b) market prices for similar assets with adjustment to reflect differences; and
 - (c) sector benchmarks such as the value of an orchard expressed per export tray, bushel, or hectare, and the value of cattle expressed per kilogram of meat.
- 19 In some cases, the information sources listed in paragraph 18 may suggest different conclusions as to the fair value of a biological asset or agricultural produce. An entity considers the reasons for those differences, in order to arrive at the most reliable estimate of fair value within a relatively narrow range of reasonable estimates.
- 20 In some circumstances, market-determined prices or values may not be available for a biological asset in its present condition. In these circumstances, an entity uses the present value of expected net cash flows from the asset discounted at a current market-determined pre-tax rate in determining fair value.
- 21 The objective of a calculation of the present value of expected net cash flows is to determine the fair value of a biological asset in its present location and condition. An entity considers this in determining an appropriate discount rate to be used and in estimating expected net cash flows. The present condition of a biological asset excludes any increases in value from additional biological transformation and future activities of the entity, such as those related to enhancing the future biological transformation, harvesting, and selling.
- 22 An entity does not include any cash flows for financing the assets, taxation, or re-establishing biological assets after harvest (for example, the cost of replanting trees in a plantation forest after harvest).
- 23 In agreeing an arm's length transaction price, knowledgeable, willing buyers and sellers consider the possibility of variations in cash flows. It follows that fair value reflects the possibility of such variations. Accordingly, an entity incorporates expectations about possible variations in cash flows into either the expected cash flows, or the discount rate, or some combination of the two. In determining a discount rate, an entity uses assumptions consistent with those used in estimating the expected cash flows, to avoid the effect of some assumptions being double-counted or ignored.

- 24 Cost may sometimes approximate fair value, particularly when:
- (a) little biological transformation has taken place since initial cost incurrence (for example, for fruit tree seedlings planted immediately prior to a balance sheet date); or
 - (b) the impact of the biological transformation on price is not expected to be material (for example, for the initial growth in a 30-year pine plantation production cycle).
- 25 Biological assets are often physically attached to land (for example, trees in a plantation forest). There may be no separate market for biological assets that are attached to the land but an active market may exist for the combined assets, that is, for the biological assets, raw land, and land improvements, as a package. An entity may use information regarding the combined assets to determine fair value for the biological assets. For example, the fair value of raw land and land improvements may be deducted from the fair value of the combined assets to arrive at the fair value of biological assets.