
A Global Guide to Fair Value Measurements

*National Professional
Services Group*

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This publication has been updated to reflect new and updated authoritative and interpretive guidance since the 2012 edition.



Dear Clients and Friends:

PricewaterhouseCoopers is pleased to offer you the 2013 edition of *A Global Guide to Accounting for Fair Value Measurements*, the inaugural global edition. This guide helps reporting entities meet the challenges of applying the key accounting and reporting standards under both U.S. Generally Accepted Accounting Principles (U.S. GAAP) and International Financial Reporting Standards (IFRS) related to fair value measurements, Accounting Standards Codification 820, *Fair Value Measurement* (ASC 820) and IFRS 13, *Fair Value Measurement* (IFRS 13).

Fair value accounting continues to be a topic of significant interest and debate. With unprecedented market events, turmoil in the credit markets and a downturn in the global economy in recent years, discussion of fair value has intensified among the preparers and users of financial information. This discussion has made clear the need for consistent fair value measurements in a global market. To that end, the FASB and IASB have primarily converged the fair value measurement and disclosure guidance through the issuance in May 2011 of Accounting Standards Update 2011-4, which amends ASC 820, and IFRS 13. These standards created a global framework for applying consistent fair value measurements and we have responded with our first global version of this guide.

The fair value standards, the focus of this guide, are principles-based standards that, with few exceptions, impact all fair value measurements in a reporting entity's financial statements. In this guide, we describe the key concepts and requirements of these standards and include specific discussion of the impact of the fair value measurement requirements in significant accounting areas such as investments, impairments, and business combinations. The purpose of this guide is to provide an overall framework for the application of fair value measurements; to highlight key questions and answers; and to offer our perspectives throughout, based on our analysis of the guidance and experience in applying it.

While this guide is intended to clarify the fundamental principles of fair value measurements and to highlight key points that should be considered when determining the fair value of financial statement items, it is not a substitute for a thorough analysis of the facts and circumstances surrounding specific fair value measurements, nor should it be read in place of the relevant accounting literature. Nonetheless, we trust that you will find in these pages the information and insights you need to work with greater confidence and certainty when applying fair value measurements.

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Chapter 1: Overview

Chapter 1: Overview

1.1 Why is Fair Value Important?

Fair value continues to be an important measurement basis in financial reporting. It provides information about what an entity might realize if it sold an asset or might pay to transfer a liability. In recent years, the use of fair value as a measurement basis for financial reporting has been expanded, even as the debate over its usefulness to stakeholders continues.

Determining fair value often requires a variety of assumptions as well as significant judgment. Thus, investors desire timely and transparent information about how fair value is measured, its impact on current financial statements, and its potential to impact future periods.

There are numerous items for which fair value measurements are required or permitted. The following are some of the more significant items (measured at fair value or an amount based on fair value) under U.S. GAAP, IFRS, or both:

- derivatives and non-derivative financial assets and liabilities
- assets and liabilities in a business combination, goodwill, contingent consideration, and intangible assets
- asset retirement obligations
- impairments of intangible or long-lived assets
- liabilities for exit and disposal activities
- assets of pension and other postretirement benefit plans
- guarantees
- consideration received that should be recognized as revenue
- real estate held for sale
- disclosures of long-term debt and other financial instruments not carried at fair value on the balance sheet, and
- instruments eligible for the fair value option under both U.S. GAAP and IFRS, which is discussed in FV 2: Scope.

The full scope of the fair value guidance is discussed in FV 2: Scope.

1.2 What Authoritative Guidance Governs Fair Value Measurements Under U.S. GAAP and IFRS?

In May 2011, the Financial Accounting Standards Board (FASB) and the International Accounting Standards Board (IASB) (the “Boards”) substantially converged the guidance for measuring and disclosing fair value under U.S. GAAP and IFRS through the issuance of two standards: Accounting Standards Update (ASU) No. 2011-04, *Fair Value Measurement (Topic 820): Amendments to Achieve Common Fair Value Measurement and Disclosure Requirements in U.S. GAAP and IFRS* (“ASU 2011-04”) and IFRS 13, *Fair Value Measurement* (“IFRS 13”)(“the fair value standards”). These standards are the current authoritative guidance on fair value measurements.

This Global Guide to Fair Value Measurements includes current guidance under both U.S. GAAP and IFRS.

1.3 How Do ASC 820 and IFRS 13 Impact Fair Value Measurements?

The fair value standards define how fair value should be determined for financial reporting purposes. They establish a fair value framework applicable to all fair value measurements under U.S. GAAP and IFRS (except those measurements specifically exempted; see further discussion in FV 2: Scope).

The standards require that fair value be measured based on an “exit price” (not the transaction price or entry price) determined using several key concepts. Preparers need to understand these concepts and their interaction. They include the principal (or most advantageous) market, the highest and best use for non-financial assets, the use and weighting of multiple valuation techniques, and the fair value hierarchy. Preparers also need to understand valuation theory to ensure that fair value measurements comply with the accounting standards.

Key concepts include the following:

Fair Value is Based on the Price to Sell an Asset or Transfer (not Settle) a Liability

Fair value is defined 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.”

In many cases, the price to sell an asset or transfer a liability (the exit price) and the transaction (or entry) price will be the same at initial recognition; however, in some cases, the transaction price may not be representative of fair value. In those cases, a reporting entity under U.S. GAAP (and less frequently under IFRS—see below) may recognise an initial gain (or loss) as a result of applying ASC 820. The fact that the fair value measurement is based on a valuation model that uses significant unobservable inputs does not alter the requirement to use the resulting value in recording the transaction.

The initial (or “Day One”) gain or loss is the unrealised gain or loss, which is the difference between the transaction price and the fair value (exit or transfer price) at initial recognition. The recognition of that unrealised gain or loss depends on the accounting model for the asset or liability, as specified in other GAAP (e.g., the gain or loss on available-for-sale securities reported in other comprehensive income vs. the gain or loss on trading securities reported in income). ASC 820 describes some of the conditions that may give rise to a Day One gain or loss (e.g., different entry and exit markets).

Reporting entities may only recognise Day One gains and losses under IFRS in certain circumstances. This is a recognised difference between U.S. GAAP and IFRS, which is discussed in FV 1.4 below.

Under the fair value standards, a liability’s fair value is based on the amount that would be paid to transfer that liability to another entity with the same credit standing. The transfer concept assumes the liability continues after the hypothetical transaction; it is not settled. The valuation of a liability should incorporate nonperformance risk, which represents the risk that a liability will not be paid. Nonperformance risk includes the impact of a reporting entity’s own credit standing. Credit risk, as with other valuation inputs, should be based on assumptions from the perspective of a market participant. (See *Focus on Market Participant Assumptions* below.)

If the liability is held by another party as an asset, the liability should be valued using the assumptions of market participants that hold the asset, assuming the holders have access to the same market. Priority is given to quoted prices (for the same or similar liability held as an asset in active or inactive markets). However, a valuation technique would be used if quoted prices are not available.

The Asset or Liability and Unit of Account

A fair value measurement is performed for a particular asset or liability. The characteristics of the asset or liability should be taken into account when determining fair value if market participants would consider these characteristics when pricing the asset or liability. Such characteristics include (1) the condition and/or location of the asset or liability and (2) any restrictions on sale or use of the asset.

The fair value standards emphasise the unit of account, i.e., the level at which an asset or liability is aggregated or disaggregated for recognition purposes under the guidance that applies to the asset or liability. Thus, an asset or liability measured at fair value may be (1) a standalone asset or liability (e.g., a financial instrument) or (2) a group of assets, a group of liabilities, or a group of assets and liabilities (e.g., a reporting unit or a business).

The level at which fair value is measured is generally consistent with the unit of account specified in other guidance. However, as discussed under “*Application to Nonfinancial Assets*” below, for non-financial assets, fair value measurements may be determined in combination with other assets and liabilities as a group.

Also, for financial assets and liabilities that qualify, as discussed in ASC 820-10-35-18D and IFRS 13.48, fair value may be measured at a group or portfolio level. Even when fair value is measured for a group of assets or liabilities, if fair value is a required measurement or disclosure in the financial statements, it should be attributed to the unit of account specified in other guidance on a systematic and rational basis.

Focus on Market Participant Assumptions

The fair value standards emphasise that fair value is a market-based measurement, not an entity-specific measurement. As such, management’s intended use of an asset, or planned method of settling a liability, are not relevant when measuring fair value. Instead, the fair value of an asset or liability should be determined based on a hypothetical transaction at the measurement date, considered from the perspective of a market participant. For instance, if a market participant would assign value to an asset acquired in a business combination, the market participant assumptions should be incorporated in determining its fair value, even if the acquiring company does not intend to use the asset.

Importance of Determining the Market

A key principle in the fair value standards is the concept of valuation based on the principal market or, in the absence of a principal market, the most advantageous market. The principal market is the market with the greatest volume and level of activity for the asset or liability being measured at fair value. The market where the reporting entity, which can be business unit within the overall reporting entity, would normally enter into a transaction to sell the asset or transfer the liability is presumed to be the principal market, unless there is evidence to the contrary.

The principal market must be available to and accessible by the reporting entity. If there is a principal market, fair value should be determined using prices in that market. If there is no principal market, or the reporting entity doesn't have access to the principal market, fair value is based on the price in the most advantageous market (the market in which the entity would maximize the amount received to sell an asset or minimize the amount that would be paid to transfer a liability).

The determination of the most advantageous market can require a lengthy process; the reporting entity may need to consider multiple potential markets and the appropriate valuation premise(s) in each market (for nonfinancial assets). Once the potential markets are identified, the reporting entity will value the asset in each market to determine which one is the most advantageous. If there are no known potential or accessible markets, the reporting entity will need to value the asset in a hypothetical market based on assumptions of potential market participants.

Application to Nonfinancial Assets

The highest and best use concept is applicable to fair value measurements of nonfinancial assets. It takes into account a market participant's ability to generate economic benefits by using an asset in a way that is physically possible, legally permissible, and financially feasible.

The highest and best use of a nonfinancial asset is determined from the perspective of a market participant, even if the reporting entity intends a different use for the asset. In determining the highest and best use, the reporting entity should consider whether the nonfinancial asset would provide maximum value to a market participant on its own or when used in combination with a group of other assets or other assets and liabilities.

Financial Assets and Liabilities with Offsetting Net Risk Positions

Although the concept of highest and best use does not apply to financial assets and liabilities, there is an exception to the valuation premise when an entity manages its market risk(s) and/or counterparty credit risk exposure within a portfolio of financial instruments (including derivatives that meet the definition of a financial instrument), on a net basis.

The "portfolio exception" allows for the fair value of those financial assets and financial liabilities to be measured based on the net positions of the portfolios (i.e., the price that would be received to sell a net long position or transfer a net short position for a particular market or credit risk exposure), rather than the individual values of financial instruments within the portfolio. This represents an exception to how financial assets and financial liabilities are measured outside of a portfolio, where each unit of account would be measured on an individual basis.

Incorporation of Standard Valuation Techniques

The fair value standards require consideration of three broad valuation techniques: the market approach, the income approach, and the cost approach. The guidance requires that entities consider all applicable valuation technique(s), given what is being measured and the availability of sufficient market inputs. In some cases, one valuation technique may be sufficient; in other cases, the reporting entity may need to incorporate multiple techniques, depending on the specific fact pattern.

The fair value standards require that a reporting entity consider the risk of error inherent in a particular valuation technique (such as an option pricing model) and/or the risk associated with the inputs to the valuation technique. Accordingly, a fair value measurement should include an adjustment for risk if market participants would include such an adjustment in pricing a specific asset or liability.

See further discussion in FV 4.3.

The Fair Value Hierarchy

The fair value standards also contain a three-level hierarchy of fair value measurements to provide greater transparency and comparability of fair value measurements and disclosures among reporting entities. The guidance prioritises observable data from active markets, placing measurements using only those inputs in the highest level of the fair value hierarchy (Level 1). The lowest level in the hierarchy (Level 3) includes inputs that are unobservable, which may include an entity's own assumptions about cash flows or other inputs. In addition, in response to some constituents' concerns about the reliability of fair value measurements based on unobservable data, additional disclosure is required for Level 3 measurements.

See further discussion in FV 4.5.

Other Key Concepts

Other concepts and requirements of the fair value standards include the following:

- Prohibition against use of blockage factors—A blockage factor is a discount applied in measuring the value of a security to reflect the impact on the quoted price of selling a large block of the security at one time. ASC 820-10-35-36B and IFRS 13.69 prohibit application of a blockage factor in valuing assets or liabilities when measuring financial instruments in any level of the hierarchy. That is, no discounts or premiums that adjust for the size of a holding are permitted, as they are not characteristics of the asset or liability being measured. Other premiums or discounts that are necessary to adjust for the characteristic of the asset or liability in a Level 2 or 3 fair value measurement may be applied (for example, a control premium).
- Valuation of restricted securities—The fair value standards require a reporting entity to value all securities reported at fair value based on market participant assumptions. Thus, if a market participant would reduce the quoted price of an identical unrestricted security due to a restriction on sale, that reduction should be incorporated in the fair value measurement.

Consideration of the restriction in the valuation is allowed only if it is an attribute of the security and does not arise from an agreement or condition that is not an attribute of the security itself. For example, a separate agreement to restrict the sale of a security, which does not amend the security itself, would not affect the value of the security.

- Transaction costs—Transaction costs are not considered an attribute of the asset or liability, and therefore, should not be included in the measurement of fair value. Some measurement models, such as for real estate held for sale, measure fair value and then subtract an estimated cost to sell; that is not the same as including transaction costs in the fair value measurement.

Transaction costs are considered in determining the most advantageous market. In making that determination, a reporting entity will calculate the net

amount that would be received from the sale of an asset or paid to transfer a liability. The price received or amount paid is adjusted by the transaction costs. See further discussion in FV 4.1.4.1 and FV 4.1.4.2.

Disclosure Requirements

The fair value standards include extensive disclosure requirements that apply with respect to recurring and nonrecurring fair value measurements. The objective of the disclosures is to help users of the financial statements assess (1) the valuation techniques and inputs used in measuring assets and liabilities at fair value on the balance sheet on a recurring and nonrecurring basis and (2) the effect of recurring fair value measurements determined using significant unobservable inputs (i.e., Level 3 measurements) on earnings or other comprehensive income for the reporting period. Various factors should be considered in order to meet those objectives, including the necessary amount and detail of information, what emphasis to place on the different disclosure requirements, and the appropriate level of aggregation for the disclosures.

Disclosures are discussed in detail in FV 5: Disclosures.

1.4 What are the Differences Between ASC 820 and IFRS 13?

As discussed above, ASU 2011-04 and IFRS 13 were issued in May 2011 and resulted in substantially converged fair value measurement and disclosure guidance between U.S. GAAP and IFRS. However, at the time of issuance, the Boards noted that certain key differences between the fair value measurement and disclosure guidance under U.S. GAAP and IFRS continue to exist, as described below.

Day One Gains and Losses

There is a difference between U.S. GAAP and IFRS in the accounting for Day One gains and losses. Under ASC 820, the immediate recognition of gains and losses is required even when inputs are unobservable. ASC 820-10-30-6 states:

If another Topic requires or permits a reporting entity to measure an asset or a liability initially at fair value and the transaction price differs from fair value, the reporting entity shall recognize the resulting gain or loss in earnings unless that Topic specifies otherwise.

While IFRS 13 contains similar language, certain IFRS disallow the recognition of Day One gains and losses when the fair value measurement is based on inputs that are not observable. For example, IAS 39, *Financial Instruments: Recognition and Measurement*, and IFRS 9, *Financial Instruments*, prohibit such recognition. IFRS 13 did not change this guidance, so it lives on.

Under IFRS, Day One gains and losses on a financial instrument (i.e., upon initial recognition of the instrument) are recognized *only* when the fair value of that instrument is evidenced by other observable current market transactions in the same instrument (i.e., without modification or repackaging) or based on a valuation technique whose variables include only data from observable markets.

Measuring the Fair Value of Certain Investments

ASC 820 contains a practical expedient that allows reporting entities to measure the fair value of certain investments at a Net Asset Value (NAV) if they report those investments at NAV, under certain conditions. The scope of the guidance includes

investments in entities that are substantially similar to investment companies, as specified in ASC 946, *Financial Services—Investment Companies*. The guidance was issued due to certain practical difficulties with adjusting NAV to estimate the fair value of certain alternative investments.

Under IFRS, NAV is not defined or calculated in a consistent manner across different parts of the world. Therefore, IFRS does not have similar guidance on measuring alternative investments.

Certain Disclosures

In the summary of ASU 2011-4, the FASB noted three differences in disclosure requirements between U.S. GAAP and IFRS.

1. Because IFRSs generally do not allow net presentation for derivatives, the amounts disclosed for fair value measurements categorized within Level 3 of the fair value hierarchy might differ.
2. IFRS 13 requires a quantitative sensitivity analysis for financial instruments that are measured at fair value and categorized within Level 3 of the fair value hierarchy. Entities reporting under IFRS disclose whether changing one or more of the inputs to reasonably possible alternative assumptions would change a Level 3 fair value measurement significantly, and disclose the effect of those changes. Entities reporting under IFRS also disclose how the effect of a change to reasonably possible alternative assumptions was calculated. U.S. GAAP does not contain such requirements; it requires only certain quantitative and qualitative disclosures for Level 3 fair value measurements.
3. There are differences in the fair value disclosure requirements for nonpublic entities. Under U.S. GAAP, ASC 820 exempts nonpublic entities from certain fair value disclosures. Under IFRS, the International Financial Reporting Standard for Small and Medium-Sized Entities addresses the fair value disclosure requirements of entities without public accountability.

Effective Date and Transition

For public entities, ASU 2011-04 was effective for interim and annual periods beginning on or after December 15, 2011, with early adoption prohibited. Nonpublic entities adopted the new guidance in annual periods beginning on or after December 15, 2011. Nonpublic entities were permitted to apply the guidance in interim periods beginning after December 15, 2011. IFRS 13 is effective for annual periods beginning on or after January 1, 2013, with earlier application permitted. All new guidance required prospective application.

Because application is prospective, any changes in fair value measurements resulting from the application of the new guidance were (or will be) recorded as a change in estimate through the income statement (or statement of profit or loss) in the first period of application. Under U.S. GAAP, in the period of adoption, a reporting entity should disclose the change, if any, in the valuation techniques applied and related inputs resulting from the application of the new guidance and quantify the total effect, if practicable. There are similar requirements under IFRS upon adoption of a new standard per paragraph 8 of IAS 8, *Accounting Policies, Changes in Accounting Estimate and Errors*.

Chapter 2: Scope

Chapter 2: Scope

2.1 Scope

The fair value standards apply in all circumstances where accounting pronouncements require or permit fair value measurements, measurements based on fair value (such as fair value less costs to sell), and disclosures about fair value measurements, with limited exceptions as specified. The fair value standards are not applicable to measurements that are similar to fair value measurements but that do not produce a fair value measure. These scope exclusions are further described below.

Significant accounting standards affected by the fair value standards include the following:

Figure 2-1: Significant Measurements Affected by ASC 820

Asset retirement and environmental obligations (ASC 410)	Financial assets/liabilities eligible for fair value option (ASC 825-10)	Distinguishing liabilities from equity (ASC 480)
Business combinations (ASC 805)	Financial instruments (ASC 825)	Property, plant, and equipment (ASC 360)
Debt and equity investments (ASC 320)	Goodwill and intangibles (ASC 350)	Mortgage banking (ASC 948)
Derivatives (ASC 815)	Guarantees (ASC 460)	Nonmonetary transactions (ASC 845)
Employee benefits (ASC 715 and ASC 960)	Hybrid financial instruments (ASC 815-15)	Transfers and servicing (ASC 860)
Exit and disposal costs (ASC 420)	Insurance (ASC 944)	Troubled debt restructurings (ASC 470-60)

Figure 2-2: Significant Measurements Affected by IFRS 13

Issues related to the application of fair value measurements within specific accounting standards are discussed in FV 7: Application to Financial Assets & Financial Liabilities and FV 8: Application to Nonfinancial Assets, Nonfinancial Liabilities, and Business Combinations.

Business combination—assets acquired and liabilities assumed (IFRS 3)	Employee benefits—postemployment benefit obligations (IAS 19)	Intangible assets—revaluation model (IAS 38)
Financial instruments: recognition and measurement—assets/liabilities eligible for fair value option (IAS 39)	Investments in associates and joint ventures—held by mutual funds and similar entities (IAS 28)	Property, plant and equipment—revaluation model and exchange of assets (IAS 16)
Non-current assets held for sale and discontinued operations (IFRS 5)	Business combinations—contingent consideration (IFRS 3)	Financial instruments: recognition and measurement—derivatives (IAS 39)
Business combinations—non-controlling interests in an acquiree (IFRS 3)	Financial instruments: presentation—hybrid financial instruments (IAS 32)	Investment property (IAS 40)
Financial instruments (IFRS 9 and IAS 39)	Agriculture—biological assets (IAS 41)	Impairment of assets—nonfinancial assets (IAS 36)
Revenue (IAS 18)	Financial instruments: recognition and measurement—financial guarantee contracts (IAS 39)	Business combinations—warranty liabilities (IFRS 3)
Business combinations—goodwill (IFRS 3)	Inventories—inventory of commodity broker-trader (IAS 2)	Transfers of assets from customers (IFRIC 18)
Distributions of non-cash assets to owners (IFRIC 17)	Consolidated financial statements—investments in subsidiaries by investment entities (IFRS 10)	Financial instruments: recognition and measurement—debt and equity investments (IFRS 9 and IAS 39)

2.2 Scope Exceptions

The fair value standards do not apply to the following:

- Share-based payment transactions (see Topic 718 and Subtopic 505-50 and IFRS 2).
- Standards that require or permit measurements that are similar to fair value but that are not intended to measure fair value, such as: (i) lower of cost or market (net realisable value) measurements in accordance with ASC 330 or IAS 2; (ii) under IFRS, the value-in-use measure in IAS 36; and (iii) under U.S. GAAP, transactions measured based on vendor-specific objective evidence (VSOE).
- Accounting principles that address fair value measurements for purposes of lease classification or measurement in accordance with ASC 840 and IAS 17. This scope exception does not apply to assets acquired and liabilities assumed in a business combination. Under U.S. GAAP, this exception does not apply to an

acquisition by a not-for-profit entity that is required to be measured at fair value in accordance with Topic 805, regardless of whether those assets and liabilities are related to leases. IFRS has no separate acquisition guidance for not-for-profit entities.

These exceptions are further discussed below.

2.2.1 Share-Based Payments

The fair value standards do not apply to share-based payments accounted for under ASC 718, *Compensation—Stock Compensation* and IFRS 2, *Share-based Payment*. In addition to excluding transactions under ASC 718 and IFRS 2, the exception also extends to related interpretive guidance, such as ASC 505-50, *Equity—Equity-Based Payments to Non-Employees*.

2.2.2 Impact on Measurements Similar to Fair Value

The fair value standards do not apply to measurements that are similar to fair value, but that are not fair value. Those include:

- Under U.S. GAAP, revenue-recognition transactions that are measured based on, or use, VSOE of selling price or VSOE of fair value (such as in accordance with ASC 605, *Revenue Recognition* and ASC 985-605, *Software*, respectively). IFRS has no specific exception with respect to transactions measured based on VSOE.
- Lower of cost or market measurements in accordance with ASC 330, *Inventory*, and net realisable value measurements in accordance with IAS 2, *Inventories*. ASC 330 defines “market” as current replacement cost not to exceed net realizable value and not to be less than net realizable value less a normal profit margin. IAS 2 defines “net realisable value” as 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. This Guide uses the term “market” to refer to both market as defined by ASC 330, and net realisable value as defined by IAS 2.
- The value-in-use measure in IAS 36, *Impairment of Assets*.

Although the fair value standards do not apply to lower of cost or market measurements in accordance with ASC 330 and IAS 2, IFRS 13 does apply to commodity broker-traders who measure their inventories at fair value less costs to sell. Entities with commodity inventory will measure fair value under IFRS by reference to the market price for the item in the principal market. See FV 8.2.5.

Certain questions arise with respect to the scope exceptions and exclusions of the fair value standards as follows:

Question 2-1: Is inventory subject to the requirements of the fair value standards when measuring impairment or reserves?

PwC Interpretive Response

The fair value standards scope out measurements that are similar to fair value but that are not fair value. The scope exception specifically identifies inventory pricing pursuant to ASC 330 and IAS 2 as measures that are not fair value measurements.

ASC 330 and IAS 2 require that inventory be recorded at cost, unless cost exceeds market, at which time the inventory must be written down to market. The accounting requirement is referred to as reporting on the basis of lower of cost or market.

By scoping inventory pricing out of the fair value standards, the accounting framework set out in ASC 330 and IAS 2 was retained. The primary difference between fair value under the fair value standards and market measurements under ASC 330 and IAS 2 is the accounting for a normal profit margin. By retaining ASC 330's definition of market and IAS 2's definition of net realisable value, market measurements of inventory will continue to include an amount that provides for a normal profit margin at the time of sale.

Question 2-2: Does ASC 820 apply to measurements under ASC 605, *Revenue Recognition*?

PwC Interpretive Response

ASC 820-10-15-2 excludes from its scope measurements that are based on, or otherwise use, VSOE of selling price or VSOE of fair value (such as under ASC 605-25 and ASC 985-605, respectively). ASC 605 includes other similar measurements. For example, third-party evidence of fair value can be used in the absence of VSOE to support revenue recognition under an arrangement with multiple deliverables. Such evidence may be in the form of a reporting entity's or its competitor's prices of largely interchangeable products or services in sales to similarly situated customers.

Prior to the codification, FAS 157 paragraph C23 stated, in part:

... vendor-specific objective evidence of fair value refers to the price for a deliverable established by the reporting entity. ... Conceptually, vendor-specific objective evidence of fair value is a measurement determined based on a transaction price (an entry price) that is different from a fair value measurement (an exit price), whether considered from the perspective of the reporting entity or a third-party vendor (as a practical expedient).

Under ASC 605, an entity is required to allocate consideration to the various contractual elements based upon fair value. In substance this conforms with the concepts contained in ASC 820 irrespective of whether the allocation is based on VSOE of fair value or based on third-party evidence of fair value. However, in practice the measurement principles contained in ASC 605 may result in allocated values that are substantially different from a measurement of fair value under ASC 820. As a result, we believe the provisions of ASC 820 do not change how fair values are determined for individual units of accounting for multiple-element revenue contracts, whether VSOE or third party evidence of fair value is used in these circumstances.

Furthermore, Accounting Standards Update No. 2009-13, *Revenue Recognition (Topic 605): Multiple-Deliverable Revenue Arrangements—a consensus of the FASB Emerging Issues Task Force*, replaces the term fair value in the revenue allocation guidance with *selling price* to clarify that the allocation of revenue is based on entity-specific assumptions rather than assumptions of a market participant.

IFRS 13 applies to transactions under the scope of IAS 18, *Revenue*, and has no specific exception with respect to transactions measured based on VSOE.

2.2.2.1 Fair Value Measurements of Alternative Investments Using NAV

Under U.S. GAAP, ASC 820 permits reporting entities to estimate the fair value of certain alternative investments using NAV without further adjustment if NAV is calculated consistent with the guidance in ASC 946 as of the reporting entity's measurement date. Under the new guidance, NAV can be used to estimate fair value provided that:

- The investment is in an entity that has all of the attributes of an investment company (i.e., primary business purpose is to invest assets for current income and/or capital appreciation; ownership is in the form of units of investment; the owners' funds are pooled; and the entity is the primary reporting entity). These attributes are specified in ASC 946-10-15-2; **or**
- If one or more of the attributes specified in ASC 946-10-15-2 are not present, the investment is in an entity for which it is industry practice to issue financial statements using guidance consistent with ASC 946. For discussion regarding disclosure requirements of alternative investments, refer to FV 5: Disclosures.

Under U.S. GAAP, there are two instances when this practical expedient cannot be used. The first instance is when investments in entities have a readily determinable fair value, as defined in ASC 820-10-15-5 and the Master Glossary of the FASB Accounting Standards Codification. In that instance, fair value should be determined following the principles and guidance of ASC 820. An equity security has a readily determinable fair value if it meets any one of the following conditions:

1. If the sales price or bid/ask quotes are currently available on a securities exchange registered with the Securities and Exchange Commission (SEC) or in an over-the-counter market for which the prices are publicly reported by the National Association of Securities Dealers Automated Quotations or OTC Markets Group Inc.
2. If the security is traded in a foreign market, the foreign market has a breadth and scope comparable to one of the U.S. markets referred to in (1).
3. If the security is a mutual fund, the fair value per share (unit) is determined and published and is the basis for current transactions.

The second instance in which the practical expedient is not available under U.S. GAAP is when it is probable that an entity will sell its investment at an amount other than NAV. The principles in ASC 820 should similarly be followed to estimate fair value in those instances. To assist reporting entities in determining if the sale of an investment is considered probable, ASC 820 includes specific criteria, all of which must be met. The criteria are similar to those used in determining if a long-lived asset should be classified as held for sale under ASC 360, *Property, Plant, and Equipment*.¹

When the practical expedient cannot be used because it is probable that the entity will sell the investment(s) for an amount different from NAV, specific disclosures are required. These include (1) the total fair value of all such investments that would otherwise meet the criteria for the practicability exception and (2) details of remaining actions required to complete the sale. Refer to FV 5.2 for additional information.

There are different accounting requirements in IFRS and U.S. GAAP for measuring the fair value of investments in investment companies.

The practical expedient provided by ASC 820 that permits an entity with certain investments in investment companies to use as a measure of fair value the reported net asset value without adjustment has no equivalent in IFRS.

¹ Refer to FV 7.1.2.5 for a detailed description of the criteria to consider when evaluating whether sale at an amount other than NAV is considered probable.

The IASB considered providing such a practical expedient in its deliberations on IFRS 13. It decided against doing so because, at the time, there was no specific accounting guidance for investment entities in IFRS and there are different practices for calculating NAV in jurisdictions around the world.

In October 2012, the IASB issued *Investment Entities – Amendments to IFRS 10, IFRS 12 and IAS 27*. However, the IASB decided that it was outside the scope of the Investment Entities project to provide fair value measurement guidance for investments in investment entities. Moreover, the IASB still had concerns that NAV could be calculated differently in different jurisdictions. Consequently, the IASB decided not to provide an NAV practical expedient for fair value measurement.

2.2.3 Lease Accounting

Although the exclusion of lease-related transactions from the fair value measurement guidance in the fair value standards may appear to be straightforward, that exclusion only applies to fair value measurements that impact either lease classification or the measurement of lease assets or liabilities in accordance with ASC 840, *Leases*, and IAS 17, *Leases*.

The IASB concluded that applying the requirements in IFRS 13 could significantly change the classification of leases and the timing of recognising gains and losses for sale and leaseback transactions. Because there is a project under way to replace IAS 17, the IASB concluded that requiring entities to make potentially significant changes to their accounting systems for the IFRS on fair value measurement and then for the IFRS on lease accounting could be burdensome.

Under U.S. GAAP, the FASB considered, but ultimately rejected, extending the scope exception to other guidance impacting the accounting for leases. Examples of the application of ASC 820 to lease-transactions are discussed below.

2.2.3.1 Application in Measuring Impairment of Nonfinancial Assets

Under U.S. GAAP, ASC 360 addresses financial accounting and reporting for the impairment of long-lived assets, including long-lived assets that are being disposed of. ASC 360 incorporates the fair value measurement principles contained in the fair value standards. Included within the scope of ASC 360-10-35 is a lessee's assets under capital leases as well as a lessor's long-lived assets under operating leases. Specific considerations from the perspective of the lessee and lessor include the following:

Lessees – Capital Lease

When applying Step 2 of the impairment test under ASC 360, the fair value of a capital lease asset should be estimated in accordance with ASC 820.

It should be noted that ASC 840 includes interpretative guidance under which a lessee would record an asset subject to lease as if it were the legal owner. This can happen when a lessee is deemed the accounting owner of an asset it intends to lease upon completion of construction (i.e., a build-to-suit lease). It can also occur when real estate is subject to a sale leaseback (either directly or imputed) and contains prohibited continuing involvement. In such cases, the legal form of the transaction does not alter the accounting requirement to reflect the asset as property, plant, and equipment, nor affect its required evaluation in accordance with ASC 360.

Lessors—Operating Leases

In the case of an operating lease, the lessor continues to recognise the property under lease as a long-lived asset. Therefore, the lessor should apply the guidance in ASC 360 in assessing potential impairment. If application of Step 2 of the impairment assessment is required, ASC 820 should be applied in the determination of fair value.

Lessors—Other Leases

For all other leases, the long-lived asset is not recorded on the lessor's balance sheet. Therefore, ASC 840 is applied to the ongoing accounting for that lease, including evaluation of impairment and lease terminations.

Under IFRS, IAS 36 applies to all noncurrent nonfinancial assets not measured at fair value, with limited exceptions. Where a lease results in a nonfinancial asset on the entity's balance sheet, that asset is tested for impairment under IAS 36. Lease receivables are tested for impairment under IAS 39. Where the recoverable amount under IAS 36 is based on fair value less costs of disposal, it incorporates the fair value measurement principles contained in the fair value standards.

2.2.3.2 Application to Exit or Disposal Cost Activities

Under U.S. GAAP, fair value measurements used in accounting for exit or disposal cost activities in accordance with ASC 420 should be determined based on the principles of ASC 820, unless the practicability exception in ASC 420 can be used. Reporting entities with leases that will be terminated are required to recognize and measure liabilities at fair value at the time that the exit or disposal liabilities are incurred. For example, when a lessee terminates an operating lease, it should record a liability for the fair value of the cost of terminating the contract following the guidance for liability measurement in ASC 820. As discussed above, under U.S. GAAP accounting for a termination of a capital lease is governed by the lease accounting guidance in ASC 840.

A reporting entity may have an exit or restructuring plan that involves ceasing use of the assets under an operating lease and perhaps entering into a subleasing arrangement. Under U.S. GAAP (ASC 420-10-30-7 through 30-9), a liability should be measured at fair value when the entity ceases using the rights conveyed by the lease (the "cease-use" date). Determination of the liability's fair value should be based on the remaining lease rentals, reduced by any actual or estimated sublease rentals that could be reasonably obtained, regardless of whether the reporting entity actually intends to enter into a sublease. Cash flows related to the lease would be discounted using a credit-adjusted risk-free rate. This expected-present-value technique is subject to the fair value measurement guidance in ASC 820 and should incorporate the inputs and assumptions that would be used by market participants.

Under IFRS, lease accounting has no specific fair value requirement related to exit or disposal cost activities.

2.3 When Cost May Be Used in Place of Fair Value or as an Estimate of Fair Value

The fair value standards preserve certain practicability exceptions presented in other accounting standards where cost is an appropriate approximation of fair value. Under U.S. GAAP, ASC 820-10-15-3 describes those circumstances, including the following:

- Measurements that use a transaction price instead of an exit price. For example, ASC 820 does not change the guidance requiring the use of a transaction price (an entry price) to measure the fair value at initial recognition of guarantees under ASC 460, *Guarantees*.
- Certain measurements for which determining fair value is not practicable, such as the exception provided by ASC 825, *Financial Instruments* (e.g., the estimate of fair value cannot be made without incurring excessive costs). Additional disclosures are required by ASC 825-10-50-16 when an entity determines it is not practicable to estimate fair value.
- Certain measurements for which fair value is not reasonably determinable, such as the exceptions provided by ASC 845, *Nonmonetary Transactions*, ASC 410, *Asset Retirement and Environmental Obligations*, ASC 420, *Exit or Disposal Cost Obligations*, and the exemption for participation rights under ASC 715-30, *Compensation-Defined Benefit Plans—Pension*, and ASC 715-60, *Compensation-Defined Benefit Plans—Other Postretirement*.
- Fair value measurements that are not reliable, such as the exception provided by ASC 958, *Not-for-Profit Entities*.
- Certain measurement methods for assets acquired and liabilities assumed in a business combination referred to in ASC 805-20-30-10.

The FASB acknowledged that retaining circumstances where cost is an appropriate approximation of fair value may result in some inconsistency in practice; however, it concluded that some of them are being resolved in other projects (e.g., many of the practicability exceptions allowed in FASB Statement No. 141, *Business Combinations* (FAS 141) were eliminated through the issuance of the guidance now included in ASC 805).

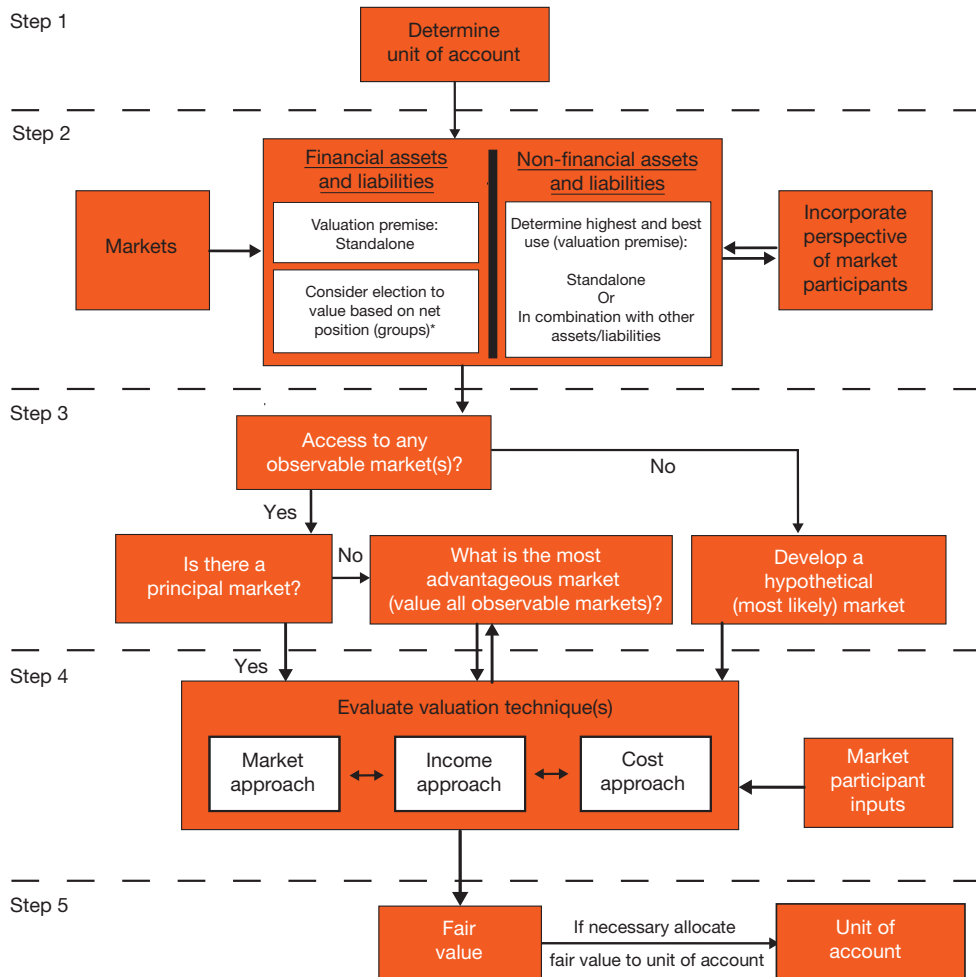
Under IFRS, the most common situations where cost may be used as an appropriate approximation of fair value, or as an alternative to fair value, include the following:

- Under IAS 39, in limited circumstances where the range of reasonable fair value estimates of an unquoted equity instrument is significantly wide and the probabilities of the various estimates cannot be reasonably assessed, an entity is precluded from measuring the instrument at fair value. In that situation, unquoted equity instruments are measured at cost, less impairment. A similar dispensation applies to derivative financial instruments that can only be settled by physical delivery of such unquoted equity instruments.
- There is a presumption in IAS 41 that cost can approximate fair value, particularly when: (i) little biological transformation has taken place since the costs were originally incurred (for example, fruit tree seedlings planted immediately prior to a balance sheet date); or (ii) the impact of biological transformation on price is not expected to be material (for example, in respect of the initial growth in a 30-year pine plantation cycle).

Chapter 3: Framework for Application of the Fair Value Standards

Chapter 3: Framework for Application of the Fair Value Standards

The fair value standards promulgate an overall framework for purposes of measuring fair value. In accordance with this framework, a reporting entity should apply a structured approach in determining all fair value measurements that are within the scope of the fair value standards. Key elements of this approach are depicted in the flowchart below.



* The election to value groups of financial assets and liabilities with offsetting market or credit risks on the basis of the net risk position is subject to the conditions in ASC 820-10-35-18E and IFRS 13.49, respectively. See FV 7.5 for a discussion of this exception.

We further discuss the concepts underlying the fair value standards in FV 4: Concepts, and provide practical application considerations in FV 7: Application to Financial Assets and Financial Liabilities, FV 8: Application to Nonfinancial Assets, Nonfinancial Liabilities, and Business Combinations, and FV 9: Consideration of Credit Risk. In addition, to assist in applying this framework, we provide an overview of the five-step application methodology as follows.

Step One: Determine Unit of Account

The reporting entity must determine the unit of account (i.e., what is being measured). As further discussed in ASC 820-10-35-2E and IFRS 13.14, the unit of account is generally determined based on other applicable guidance, except as provided in the

fair value standards. For example, the unit of account for a derivative is the contract, the unit of account for the first step of a goodwill impairment analysis under U.S. GAAP is the reporting unit, and the unit of account for goodwill impairment testing under IFRS is the cash-generating unit or group of cash-generating units to which goodwill is allocated. See further discussion of key concepts regarding this area in FV 4.1.1.

Step Two: Determine Valuation Premise

After determining the unit of account, the reporting entity must assess the valuation premise based on the nature of the asset or liability being measured.

Nonfinancial assets

In accordance with the fair value standards, the fair value of a nonfinancial asset is based on the use of the asset by market participants, founded on their ability to generate economic benefits. The highest and best use for a nonfinancial asset must be determined based on the perspective of market participants, even if the reporting entity intends a different use. Consideration of the highest and best use for a nonfinancial asset is an integral part of the identification of potential markets where the asset can be sold and establishes the valuation premise. The valuation premise may be either for the asset to be used in combination with other assets, other liabilities, or other assets and liabilities. Alternatively, the valuation premise may be for the asset to be used on a standalone basis. See further discussion of the determination of the highest and best use in FV 4.1.5.

Financial assets

The concept of “highest and best use” does not apply to financial assets. Therefore, the fair value of financial assets must be measured on a standalone basis, at the level of the unit of account as specified in other applicable guidance. The fair value standards include an exception to the fair value measurement guidance in instances in which an entity manages its market risk(s) and/or counterparty credit risk exposure within a group (portfolio) of financial instruments on a net basis (the “portfolio exception”). When elected, the portfolio exception allows an entity to measure the fair value of those financial assets (and financial liabilities) based on the net position of the portfolio (i.e., the price that would be received to sell a net long position or transfer a net short position for a particular market or credit risk exposure), rather than the individual positions within the portfolio (i.e., the gross positions).

Liabilities

Financial and nonfinancial liabilities are valued based on the transfer of the liability to a market participant on the measurement date. However, reporting entities must still consider market participant assumptions relative to the transfer of the liability. If the liability is held by another party as an asset, the liability should be valued using the assumptions of market participants that hold the asset, assuming they have access to the same markets, whether or not the asset has a quoted market price.

See further discussion of the valuation premise for financial assets and liabilities (including the election of the “portfolio exception” in FV 7.5).

Step Three: Determine Markets for Basis of Valuation

Once a reporting entity has considered potential markets, market participants, and the valuation premise, it must assess whether it has access to any observable markets. If access is available, a reporting entity must consider the following:

- Is there a principal market for the asset or liability? The principal market is the market with the greatest volume and level of activity for the asset or liability. If there is a principal market, the fair value measurement should be based on the price in that market, even if the price in another market is potentially more advantageous. The reporting entity cannot incorporate potentially more advantageous markets in its fair value measurements when it has a principal market. Unless there is contrary evidence, the market in which the reporting entity would normally sell the asset or transfer the liability is presumed to be the principal market (or, in the absence of a principal market, the most advantageous market).

Therefore, if the reporting entity does have a principal market, it will be able to expedite step three.

- What is the most advantageous observable market? If the reporting entity does not have a principal market, it should determine the most advantageous observable market for sale of the asset or transfer of the liability. As part of this determination, a reporting entity will need to consider all observable markets to which it has access and for which inputs can be reasonably obtained. Furthermore, for nonfinancial assets, the entity should evaluate whether the appropriate valuation premise is in combination with other assets, or on a standalone basis for each observable market. In some cases, a reporting entity will need to determine the value in multiple markets and may need to consider both valuation premises (for nonfinancial assets) in one or more markets, in order to determine the most advantageous market.

The market determination should incorporate the appropriate valuation technique(s), as described in step four below. The reporting entity will determine the most advantageous market using valuation technique(s) consistent with market participant assumptions in each observable market. The market that results in the highest value for the asset or the lowest amount that would be paid to transfer the liability (after transaction costs) will represent the most advantageous market.

In the application of the framework, it is important to note that the determination of highest and best use for nonfinancial assets, and development of the fair value measurement are based on market participant assumptions in markets to which the reporting entity has access.

If there are no observable markets for the asset or liability or the market is not active, the reporting entity must develop a hypothetical market based on the assumptions of potential market participants. See further discussion in FV 4.1.2.

Step Four: Apply the Appropriate Valuation Technique(s)

The fair value standards outline three potential valuation techniques: the market approach, the cost approach, and the income approach. It requires that the reporting entity consider and apply each valuation technique that is appropriate in the circumstances and for which market participant pricing inputs can be obtained without undue cost and effort. For example, a reporting entity should consider market conditions, nonperformance risk, risks and uncertainties, and other attributes and inputs that would bear on the fair value measurement. See further discussion in FV 4.3.

Step Five: Determine Fair Value

The outcome of the market determination and the application of valuation technique(s) will be a fair value measurement. If a nonfinancial asset is valued in combination with other assets, or the portfolio exception is used to measure fair value based on the net risk position of a group of financial assets and liabilities, the total calculated value must be allocated to each unit of account in the asset grouping based on the specific facts and circumstances.

Chapter 4: Concepts

Chapter 4: Concepts

This chapter discusses the key concepts in the fair value standards and addresses certain specific issues associated with their application.

4.1 Definition of Fair Value

The fair value standards define fair value as follows:

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.

Under the fair value standards, fair value is based on the exit price (the price that would be received to sell an asset or paid to transfer a liability), not the transaction price or entry price (the price that was paid for the asset or that was received to assume the liability). Conceptually, entry and exit prices are different. The exit price concept is based on current expectations about the sale or transfer price from the perspective of market participants. In accordance with the fair value standards, a fair value measurement should reflect all of the assumptions that market participants would use in pricing an asset or liability.

The fair value standards provide principles regarding:

- a. The asset or liability.
- b. The transaction.
- c. Market participants.
- d. The price.
- e. Application to nonfinancial assets.
- f. Application to liabilities and instruments classified in a reporting entity's shareholders' equity.
- g. Application to financial assets and financial liabilities with offsetting positions in market risks or counterparty credit risk.

4.1.1 The Asset or Liability and the Unit of Account

As described in the fair value standards (ASC 820-10-35-2B through 35-2E and IFRS 13.11-14), a fair value measurement relates to a particular asset or liability. Thus, the measurement should incorporate the asset or liability's specific characteristics, such as condition, location, and restrictions, if any, on sale or use, if market participants would take those characteristics into account when pricing the asset or liability at the measurement date.

In some cases, the fair value measurement will be applied to a standalone asset or liability (e.g., financial instrument or a non-financial asset) or a group of related assets and/or liabilities, such as a business, a reporting unit (under U.S. GAAP), or a cash-generating unit (CGU) (under IFRS). The determination of how the fair value measurement applies to an asset or a liability depends on the unit of account.

The unit of account is determined based on the level at which the asset or liability is aggregated or disaggregated in accordance with U.S. GAAP or IFRS applicable to the particular asset or liability being measured.

During the development of the fair value standards, the Boards reaffirmed that the fair value measurement project was to address “how” to measure fair value and not “what” is being measured at fair value. They decided that clarifying the unit of account when measuring fair value was outside of the scope of the Fair Value Measurement project. Accordingly, the fair value standards do not change the unit of account prescribed by other standards. As a result, differences between IFRS and U.S. GAAP with respect to the determination of the unit of account may result in differences in fair value measurements.

The fair value standards emphasise the unit of account (as defined in other guidance), generally requiring that the fair value of financial instruments be measured based on the level of the unit of account, rather than at an aggregated or disaggregated level. In some cases, the unit of account may not be clear. There are few instances in which the unit of account is explicitly defined. Often, it is inferred from the recognition or measurement guidance in the applicable standard and/or from industry practice. For example, in the U.S., it is clear that the unit of account for evaluating goodwill impairment is the reporting unit. On the other hand, the guidance on accounting for securities by investment companies is not explicit on the unit of account. Also, there are times when the unit of account varies depending on whether one is considering recognition, initial measurement, or subsequent measurement, including impairments.

The fair value standards allow an exception whereby if an entity manages a group of financial assets and financial liabilities on the basis of its net exposure to either market risks or credit risks, it can opt to measure the fair value of that group (portfolio) on the basis of the net position (this is the unit of measurement for the purposes of the fair value measurement, rather than the individual financial assets and liabilities). The “portfolio exception” is addressed in FV 4.1.7 and FV 7.5.

The fair value standards include restrictions on the incorporation of premiums and discounts relating to the size of a position of financial instruments held in measuring fair value. Because the unit of account is the level at which fair value measurement must be applied, the fair value standards distinguish between premiums or discounts related to size as a characteristic of the reporting entity’s holding (such as a blockage factor), which is prohibited, as opposed to premiums or discounts related to a characteristic of the asset or liability (for example, a control premium), which is permitted under certain circumstances.

Certain premiums or discounts are permitted for instruments that are not classified as Level 1. When determining whether it is appropriate to include a premium or discount in a Level 2 or Level 3 fair value measurement, reporting entities should consider the following:

- Market participant assumptions.
- The unit of account as defined by other guidance for the asset or liability being measured.
- The unit of measurement.
- Whether the premium or discount is related to the size of the entity’s holding of the asset or liability or rather reflective of a characteristic of the asset or liability itself.
- Whether the impact of the premium or discount is already contemplated in the valuation.

The unit of measurement (i.e., individually or with other assets and liabilities) is established from the perspective of market participants.

Another required element in determining fair value is the impact of both counterparty credit risk and the reporting entity's own credit risk. Consideration of credit risk is addressed in FV 9: Consideration of Credit Risk.

PwC Observation: While the determination of fair value, including the application of premiums and discounts, is rooted in market participant assumptions, such application cannot contradict the unit of account prescribed in other guidance for the asset or liability being measured.

4.1.2 The Asset or Liability and the Unit of Account Market

The fair value standards (ASC 820-10-35-5 and IFRS 13.16) discuss the concepts of principal market and most advantageous market. In accordance with these concepts, the transaction takes place either in:

- The principal market, the market with the greatest volume and level of activity for the asset or liability, or
- In the absence of a principal market, the most advantageous market. The most advantageous market is the market that maximizes the amount that would be received to sell the asset or minimizes the amount that would be paid to transfer the liability, after taking into account transaction costs and transportation costs. However, although transaction costs are taken into account when determining which market is the most advantageous, the price used to measure the asset's fair value is not adjusted for those costs (although it is adjusted for transport cost).

The principal market is the market with the greatest volume and level of activity *for the asset or liability*, not necessarily the market with the greatest volume of activity for the particular reporting entity. This concept emphasizes the importance of the market participant's perspective; however, the principal market is presumed to be the market in which the reporting entity transacts, unless there is evidence to the contrary. In evaluating the principal or most advantageous markets, the fair value standards restrict the eligible markets to only those that the entity can access at the measurement date.

If there is a principal market for the asset or liability, the fair value standards state that fair value should be based on the price in that market, even if the price in a different market is potentially more advantageous at the measurement date. It is only in the absence of the principal market that the most advantageous market should be used.

To determine the principal market, the reporting entity needs to evaluate the level of activity in various different markets. However, the entity does not have to undertake an exhaustive search of all possible markets in order to identify the principal or most advantageous market; it should take into account all information that is readily available. In the absence of evidence to the contrary, the market in which an entity normally transacts is presumed to be the principal market, or the most advantageous market in the absence of a principal market.

In many cases, a reporting entity may regularly buy and sell a particular asset and may have clearly identified exit markets. For example, a company engaged in trading natural gas may buy and sell financial gas commodity contracts on the New York

Mercantile Exchange (NYMEX) and in bilateral markets. In determining the principal market, the company would need to evaluate the level of activity in various markets. The reporting entity's principal market will be the market in which the gas commodity contracts have the greatest activity, even if the prices in other markets are more advantageous or if the entity itself has greater trading volume in the other market. Assuming the reporting entity has access, the fair value measurement will be based on the price in the asset's principal market.

The following example illustrates the framework for identifying the principal or most advantageous market.

Example 4-1: Market Identification

In a territory there are two available markets for soy beans:

- a. Export: this is the market in which higher prices are available for the producer. However, there are limitations in the volumes that can be sold in this market because the government sets a limit on the volume of exports and each producer needs to get an authorisation to export its production.
- b. Domestic: the prices are lower in this market as compared to the export market, but there are no restrictions in terms of volume (other than the demand of the product by purchasers).

Producers intend to sell all of the production they can in the export market and, when they do not have any further authorisation to export, they sell the remaining production in the domestic market.

Therefore, the most advantageous market is the export market, as this is the one that gives the higher benefits to the producers. However, because the domestic market has the highest volume for soy beans, the domestic market is the principal market by which the producers should determine fair value.

4.1.2.1 No Observable Markets or No Access to Markets

There may be situations in which there is no observable market for an asset or liability or a reporting entity may not have access to any markets. For example, there may be no specific market for the sale of a business or an intangible asset. In such cases, the reporting entity should identify potential market participants (i.e., strategic or financial buyers). The reporting entity will develop a hypothetical "most likely" market based on the expected assumptions of those market participants.

If the reporting entity does not have access to any known or observable markets, activity in inaccessible known markets may be considered in developing the inputs that would be used in a hypothetical market.

Question 4-1: How should a reporting entity determine a market when there is no observable exit market for an asset or liability?

PwC Interpretive Response

If there are no apparent exit markets, a reporting entity should determine the characteristics of a market participant to which it would hypothetically sell the asset if it were seeking to do so. Once the market participant characteristics have been

determined, the reporting entity would identify the assumptions that those market participants would consider when pricing the asset. The reporting entity should construct a hypothetical market for the asset based on its own assumptions about what market participants would consider in negotiating a sale of the asset or transfer of the liability.

Key considerations in developing market participant assumptions may include the specific location, condition, and other characteristics of the asset or liability (e.g., assumed growth rates, whether certain synergies are available to all market participants, and risk premium assumptions).

For example, there may be no apparent exit market for customer relationship intangible assets. In this case, a company may consider whether there are strategic buyers in the marketplace that would benefit from the customer relationship(s) that are being valued. Most companies seek to build up their customer base as they grow their businesses, so the company can look to potential participants in its industry that may be seeking additional growth and from that group determine a hypothetical group of market participants.

See also additional guidance on determining market participants in FV 4.1.3.

4.1.2.2 Market Determination—Other Considerations

The fair value standards (ASC Master Glossary and IFRS 13 App A) define an orderly transaction as:

A transaction that assumes exposure to the market for a period before the measurement date to allow for marketing activities that are usual and customary for transactions involving such assets or liabilities; it is not a forced transaction (for example, a forced liquidation or distress sale).

The fair value standards (ASC 820-10-35-6C and IFRS 13.21) further state:

Even where there is no observable market to provide pricing information about the sale of an asset or the transfer of a liability at the measurement date, a fair value measurement shall assume that a transaction takes place at that date, considered from the perspective of a market participant that holds the asset or owes the liability. That assumed transaction establishes a basis for estimating the price to sell the asset or to transfer the liability.

This definition emphasizes the use of market participant assumptions in the determination of fair value. In addition, the concept of an orderly transaction excludes a distressed sale or a forced liquidation as an input in the determination of fair value. For example, assume the normal lead time for sale of an operating asset is approximately three months, to allow for marketing and sufficient due diligence by market participants. However, if a company needed to raise cash quickly due to a liquidity crisis, it may agree to a distressed sale of certain operating assets at lower-than-market prices. These transactions would not be representative of the fair value for the related assets. In a forced liquidation, the transaction price may not equal the fair value of the asset or liability at initial recognition (see further discussion in FV 4.2 below).

The principal or most advantageous market is determined by considering whether the reporting entity has access to that market. This allows for differences among entities with different activities, even those that are party to the same transaction.

For example, the fair value standards (ASC 820-10-55-47 through 55-49 and IFRS 13.IE24-26) describe a dealer that enters into an interest rate swap with a retail customer. From the perspective of the dealer, the principal market for the swap is the dealer market; however, the principal market for the retail customer is the retail market because the customer does not have access to the dealer market.

In addition, different operating units within a reporting entity may have access to different markets and each separate unit must individually consider the principal market, and in the absence of a principal market, the most advantageous market. Therefore, the same reporting entity could have different fair value measurements for identical or similar assets or liabilities, depending on the operating units holding the assets or liabilities and differences in the markets to which they have access and the differences in assumptions of the market participants in those markets. For example, a reporting entity's operating units located in Asia, Europe and the U.S. may each hold investments in the same debt and equity securities. The fair value measurements reported by the operating units may differ at times due to differences in the markets to which they have access and the level of activity for the asset in each market. The fair value standards require that each reporting unit consider the facts and circumstances appropriate to its valuation of the asset or liability being valued and follow the framework of the fair value standards, independent of other reporting units that may be valuing an identical or similar asset or liability.

4.1.3 Market Participants

The fair value standards emphasize that a fair value measurement should be based on the assumptions of market participants (i.e., it is not an entity-specific measurement). Market participants are buyers and sellers in the principal (or the most advantageous) market for the asset or liability. The fair value standards (ASC Master Glossary and IFRS 13 App A) provide characteristics of market participants as follows. Market participants are:

- a. Independent of each other (that is, they are not related parties).
- b. Knowledgeable, having a reasonable understanding about the asset or liability and the transaction using all available information, including information that might be obtained through due diligence efforts that are usual and customary.
- c. Able to enter into a transaction for the asset or liability.
- d. Willing to enter into a transaction for the asset or liability (that is, they are motivated but not forced or otherwise compelled to do so).

The term "related parties" is used consistent with its use in ASC 850, *Related Party Disclosures*, and IAS 24, *Related party disclosures*. In identifying potential market participants, the fair value standards (ASC 820-10-35-9 and IFRS 13.23) state that reporting entities should consider "... factors specific to ... (a) the asset or liability, (b) the principal (or most advantageous) market for the asset or liability, [and] (c) market participants with whom the reporting entity would enter into a transaction in that market."

The reporting entity is not required to identify specific market participants but instead to develop a profile of potential market participants. The determination of potential market participants is a critical step in the overall determination of fair value due to the emphasis on the use of market participant assumptions. In some cases, the identification of market participants may be straightforward, as there may be general knowledge of the types of entities that transact in a particular market. However, in

certain other cases, a reporting entity may need to make assumptions about the type of market participant that may be interested in taking on a particular asset or liability.

The determination of the appropriate market and market participants may have a significant effect on the fair value measurement. Key issues in these determinations include the issue in Question 4-2.

Question 4-2: How should a reporting entity assess multiple market participants and multiple uses for assets when determining fair value?

PwC Interpretive Response

In some cases, a reporting entity may have more than one potential exit market, multiple potential uses, and many market participants in each exit market. The fair value standards state that the reporting entity need not undertake an exhaustive search of possible markets to identify the principal market, or in the absence of the principal market, the most advantageous market, but it should consider information that is reasonably available. Therefore, the reporting entity can use the price in the market in which it normally enters into transactions, unless there is evidence to the contrary.

Consistent with this guidance, a reporting entity should use information that is reasonably available to it when developing its profile of market participants.

4.1.4 The Price

Fair value is the price that would be received (asset) or paid (liability) in “an **orderly transaction** in the principal (or most advantageous) market at the measurement date under current market conditions (that is, an exit price) regardless of whether that price is directly observable or estimated using another valuation technique.”

4.1.4.1 Transaction Costs

The fair value standards (ASC 820-10-35-9B and IFRS 13.25) address the impact of transaction costs on fair value. They state in part:

The price in the principal (or most advantageous) market used to measure the fair value of the asset or liability shall not be adjusted for transaction costs. Transaction costs shall be accounted for in accordance with other Topics [IFRSs].

The fair value standards (ACS Master Glossary and IFRS 13 App A) define transaction costs as:

The costs to sell an asset or transfer a liability in the principal (or most advantageous) market for the asset or liability that are directly attributable to the disposal of the asset or the transfer of the liability and meet both of the following criteria:

- a. They result directly from and are essential to that transaction.
- b. They would not have been incurred by the entity had the decision to sell the asset or transfer the liability not been made (similar to costs to sell, as defined in ASC 360-10-35-38 and IFRS 5).

While transaction costs are not included in the fair value of the asset or liability under the fair value standards, these amounts are included when assessing the net transaction proceeds to determine the most advantageous market, as described above and in Example 4-2.

4.1.4.2 Transportation Costs

If location is a characteristic of the asset or liability being measured (e.g., in the case of a physical commodity), the fair value measurement should incorporate transportation costs. The cost of transporting a physical asset from its current location to the market should be considered in the computation of fair value that is based on the price in that market. For example, assume a company intends to sell corn by using a corn futures contract on the Chicago Board of Trade (CBOT). The contract calls for physical delivery at the Chicago Switching Yard; therefore, because location is an attribute of the contract, the company should deduct the cost of physically transporting the corn to the sale location in the calculation of fair value.

Example 4-2: The Impact of Transportation Costs and Transaction Costs on Fair Value and Market Identification

An entity has an asset that is sold in two different markets, Market A and Market B, with similar volumes of activities but with different prices. The entity enters into transactions in both markets and can access the price in those markets for the asset at the measurement date. There is no principal market for the asset.

	Market A	Market B
	In Currency Units (CU)	
Price	27	25
Transport costs	<u>(3)</u>	<u>(2)</u>
	24	23
Transaction costs	<u>(3)</u>	<u>(1)</u>
Net amount received	21	22

If Market A had been the principal market for the asset (that is, the market with the greatest volume and level of activity for the asset), the asset's fair value would be measured using the price that would be received in that market, after taking into account transport costs (CU 24). The same applies for Market B (CU 23).

As a principal market for the asset does not exist, however, the fair value of the asset would be measured using the price in the most advantageous market. The most advantageous market is the market that maximises the amount that would be received to sell the asset, after taking into account transaction costs and transport costs (that is, the net amount that would be received in the respective markets).

The entity would maximise the net amount that would be received for the asset in Market B (CU 22). So the fair value of the asset is measured using the price in that market (CU 25), less transport costs (CU 2), resulting in a fair value measurement of CU 23.

4.1.5 Application to Nonfinancial Assets – The Valuation Premise and Highest and Best Use

Under the fair value standards, the concepts of the valuation premise and highest and best use are only relevant when measuring the fair value of *non*financial assets (and financial assets and liabilities in the limited circumstances described in FV 4.1.7).¹

For nonfinancial assets, the objectives of the valuation premise are described such that the highest and best use of a nonfinancial asset may provide maximum value either in combination with a group of assets, or a group of assets and liabilities, or on a standalone basis. An example of a grouping of assets or liabilities may be a business. Liabilities associated with the complementary assets can include liabilities that fund working capital. However, liabilities used to fund assets other than those within the group of assets cannot be included in the valuation.

The valuation premise is established based on the highest and best use of the nonfinancial asset from the perspective of a market participant, which may be different from the reporting entity's intended use. For example, a company's management may intend to operate a property as a bowling alley, while market participants would pay a higher price to use the asset as a parking lot and zoning requirements allow for this change in use. In that case, highest and best use and the fair value of the property should be based on its use as a parking lot.

4.1.5.1 Interaction of Unit of Account and Valuation Premise for Nonfinancial Assets

The unit of account represents what is being valued, based upon other relevant U.S. GAAP or IFRS for the asset or liability being measured, while the valuation premise is intended to determine the fair value of nonfinancial assets based on a concept of highest and best use. In practice, there are many differences between the unit of account and the valuation premise. Therefore, a reporting entity must understand the interaction of these two key concepts.

The unit of account determines what is being measured for purposes of recognition in the financial statements by reference to the level at which the asset or liability is aggregated or disaggregated when applying other applicable U.S. GAAP or IFRS. A reporting entity must go through the fair value framework to establish the principal, most advantageous, or hypothetical market based on the unit of account being valued.

Whether the valuation premise is in combination with other assets and liabilities or standalone must be determined from the perspective of market participants. A unit of account may be grouped with other units of account to achieve the highest and best use. In addition to addressing the concept of aggregation, the fair value standards refer to the level at which an asset or liability is "disaggregated." The fair value standards define the unit of account as:

The level at which an asset or liability is aggregated or disaggregated in a Topic [or IFRS] for recognition purposes.

¹ Grouping financial instruments for purposes of determining their fair values is prohibited (except as provided for under the exception for portfolios described in FV 4.1.7). The fair value of financial instruments must be measured individually at the level of the unit of account as specified in other U.S. GAAP or IFRS.

In considering potential markets, a reporting entity may need to consider different groupings of nonfinancial assets to determine which grouping provides the highest value from the perspective of a market participant. However, a unit of account may not be included in more than one group in the final determination of fair value. Finally, asset groupings must be premised on the fact that the reporting entity has access to the market into which assets and liabilities in combination would be sold. The fair value standards require the unit of account to be measured assuming that the market participant has, or has access to, the other assets in the group.

Disaggregation is the process of determining the fair value of a unit of account based on the individual sale of the components of the group. This may be applicable if a unit of account can be disaggregated and sold in components that would maximize the overall value of the unit of account from the perspective of market participants. As with asset groupings, the reporting unit must have access to the market into which components of a unit of account would be sold.

ASC 820-10-35-11A [and IFRS 13.32] state:

The fair value measurement of a nonfinancial asset assumes that the asset is sold consistent with the unit of account specified in other Topics [or IFRS] (which may be an individual asset). That is the case even when that fair value measurement assumes that the highest and best use of the asset is to use it in combination with other assets or with other assets and liabilities because a fair value measurement assumes that the market participant already holds the complementary assets and associated liabilities.

The above indicates that the unit of account for nonfinancial assets may differ from the unit of measurement. If the highest and best use of an asset is that it should be combined with other assets, the fair value must then be determined for the asset in combination with those other assets. This may require the value of the group to be allocated to the components in a systematic and rational manner.

See FV 8: Application to Nonfinancial Assets, Nonfinancial Liabilities, and Business Combinations for further discussion of the valuation premise and highest and best use of nonfinancial assets.

When applying the concepts of both aggregation and disaggregation, it is critical to ensure that the valuation is allocated to the individual units such that the ultimate valuation relates solely to the unit of account. The following illustrate the concept.

Question 4-3: Assume a company in the business of refining oil into gasoline enters into a contract to purchase a quantity of crude oil and the contract qualifies as a derivative instrument under ASC 815, Derivatives and Hedging (ASC 815), and IAS 39. When determining the fair value of the contract for crude oil, is the company permitted to consider the market for gasoline products as the principal market into which the crude oil is sold?

PwC Interpretive Response

We do not believe that valuation of crude oil on the basis of the price of gasoline is an appropriate application of principal market and highest and best use in this fact pattern. The unit of account for the crude oil contract is established by ASC 815 and IAS 39 as the entire contract for the crude oil. The conversion of the crude oil into gasoline would not provide an appropriate valuation, because the price differential relates primarily to the process of converting crude oil to gasoline and not to the unit

of account. In this example, we would expect the potential markets for the crude oil contract to be based on the wholesale markets to which the crude oil can be transported and sold.

Example 4-3: Unit of Account and Valuation Premise Under U.S. GAAP

Assume a company is performing step 1 of its annual impairment test of goodwill pursuant to ASC 350, *Intangibles—Goodwill and Other*. Further, assume that the company has goodwill allocated among multiple reporting units. For purposes of performing step 1 of the impairment test, ASC 350 specifies that the test should be performed for the reporting unit as a whole; this establishes the unit of account for purposes of the fair value measurement.

Management evaluates the potential markets and market participants and determines that it may (1) sell the individual reporting units individually to buyers who will operate them independently or (2) sell the individual reporting units together or individually to buyers that will operate them together or with a similar complementary unit. The aggregation of two reporting units may provide the highest value to market participants. Furthermore, the company does not have a principal market for the sale of its reporting units. Therefore, management determines that there are two potential markets: one in-combination with other assets and one standalone. Management calculates the value of:

- The individual reporting units—each unit has an exit price of \$100 million (for a total of \$200 million).
- The reporting units together—the exit price increases to \$220 million.

Based on this analysis, management concludes that valuing the asset in combination with other assets (i.e., sale of the two asset groups) provides the maximum value from the perspective of market participants. However, the unit of account for the asset being measured is the individual reporting unit. Therefore, the additional value of \$20 million realised by aggregating the reporting units into their highest and best use must be allocated to the individual units of account. The value should be allocated based on management's judgment as to the contribution of each unit of account to the combined total.

Under IFRS, each cash-generating unit or group of cash-generating units to which goodwill has been allocated is individually tested for impairment. Combining these units is not permitted.

Question 4-4: When determining the highest and best use of a nonfinancial asset, including the determination of the most advantageous market, what costs should be included?

PwC Interpretive Response

When determining the highest and best use of a nonfinancial asset, a reporting entity should consider potential markets, including the valuation premise, that is, whether the nonfinancial asset would provide maximum value either in combination with a group of assets, or a group of assets and liabilities, or on a standalone basis.

Assuming there is no principal market, the most advantageous market should be determined based on the valuation premise and market that yields the highest value

based on net proceeds. Once the reporting entity has identified potential markets and the related valuation premise, the entity should calculate the value in each market. For the purpose of determining the most advantageous market, the entity should take into consideration costs that market participants would incur in the circumstances, including transaction costs. However, such transaction costs would not be reflected in the recorded fair value. The following example illustrates this concept.

Example 4-4: Market Determination

If a parcel of land zoned for agricultural use is currently used for farming, the value should reflect the cost structure to continue operating the land for farming, including any tax credits that could be realized by market participants.

However, if it is determined that market participants would consider an alternate use for the land, such as commercial or residential use, the value should include all costs (e.g., legal costs, viability analysis, traffic studies) associated with rezoning the land to the market participant's intended use. In addition, demolition and other costs associated with preparing the land for a different use should be included in the net proceeds. This concept is illustrated in 820-10-55-30 through 31 of ASC 820 (Case B, *Land*) and IFRS 13.IE7 (Example 2, *Land*). This example demonstrates the concept that the current use of the land is presumed to be its highest and best use unless market or other factors suggest a different use. The highest and best use of the land is determined by comparing the value of the land as currently developed with the value of the land if it had a different use, taking into account the costs noted above, including the uncertainty related to whether the approval needed for rezoning would be obtained, because market participants would take that into account when pricing the land.

4.1.6 Application to Liabilities and Instruments Classified in a Reporting Entity's Shareholders' Equity

4.1.6.1 Liabilities

Under the fair value standards, the fair value of a liability is based on the price to transfer the obligation to a market participant at the measurement date, assuming the liability will live on in its current form. However, in the absence of an observable market for the transfer of a liability, the fair value standards require that preparers consider the value of the corresponding asset held by a market participant when measuring the liability's fair value. The Basis for Conclusions of ASU 2011-4 and IFRS 13 states, "in the boards' view, the fair value of a liability equals the fair value of a ... corresponding asset ..., assuming an exit from both positions in the same market."

The Boards believe that fair value from the viewpoint of investors and issuers should be the same in an efficient market, otherwise arbitrage would result. They considered whether these different viewpoints could result in different fair values because the asset is liquid but the liability is not. The asset holder could easily sell the asset to another party, whereas the liability issuer will usually find it more difficult to transfer the liability to another party. The Boards decided that there was no conceptual reason why a different fair value should result, given that both parties are measuring the same instrument with identical contractual terms in the same market.

When valuing a liability by reference to the corresponding asset in the same principal or most advantageous market, reporting entities should consider the following.

1. ASC 820-10-35-16D and IFRS 13.39 note that the fair value of the liability should not incorporate the effect of any restriction preventing the sale of the asset. ASC 820-10-35-18C and IFRS 13.46 state that there should be no separate inputs or adjustments to existing inputs for restrictions on transfer of liabilities in the measurement of fair value. Paragraph BC37 of ASU 2011-04 and IFRS 13.BC100 indicate that the Boards had two reasons for this guidance. First, restrictions on the transfer of a liability relate to the performance of the obligation whereas restrictions on the transfer of an asset relate to its marketability. Second, nearly all liabilities include a restriction on transfer, whereas most assets do not. As a result, the effect of a restriction on transfer of a liability would theoretically be the same for all liabilities. This differs from the treatment of assets with restrictions. See FV 4.6.
2. The fair value of the liability may not be the same as the fair value of the corresponding asset when the pricing includes a bid-ask spread. In such cases, the liability should be valued based on the price within the bid-ask spread that is most representative of fair value for the liability, which may not necessarily be the same as the price within the bid-ask spread that is most representative of fair value for the corresponding asset.

In addition, ASC 820-10-35-17 and IFRS 13.42 state:

The fair value of a liability reflects the effect of nonperformance risk. Nonperformance risk includes, but may not be limited to, a reporting entity's own credit risk. Nonperformance risk is assumed to be the same before and after the transfer of the liability.

This concept assumes that the liability would be transferred to a credit-equivalent entity. However, transfers of liabilities are rare. In practice, most liabilities are settled with the holder or may be extinguished through execution of an offsetting contract. Therefore, measuring the "transfer" value of a liability has proven to be a challenge when settlement has historically been the primary means for exit.

ASC 820-10-35-16H and IFRS 13.37 address the situation in which a quoted price for the transfer of an identical or similar liability or instrument classified in a reporting entity's shareholder's equity is not available and the identical item is not held by another party as an asset. In that case, the reporting entity should measure fair value using a valuation technique from the perspective of a market participant that owes the liability or has issued the claim on equity.

The fair value standards also provide guidance on the income approach for the measurement of certain liabilities at fair value. ASC 820-10-35-16J and IFRS 13.B31 indicate that the compensation that a market participant would require for taking on the obligation includes the return that the market participant would require for (1) undertaking the activity and (2) assuming the risk associated with the obligation. The return for *undertaking the activity* represents the value of fulfilling the obligation, for example, by using resources that could be used for another purpose. The return for *assuming the risk* represents the value associated with the risk that cash outflows may ultimately differ from expectations.

The fair value standards include five examples to illustrate the measurement of liabilities. The following summarizes the key points illustrated in each case:

ASC 820: Case A: Liabilities and Credit Risk—General (IFRS 13: Measuring liabilities – IFRS 13.IE32)

This case illustrates the fact that the fair value of a liability differs for each entity as it incorporates the entity's credit standing.

ASC 820: Case B: Structured Note (IFRS 13: Example 10 – Structured note)

This case illustrates the use of an expected present value technique.

ASC 820: Case C: Asset Retirement Obligation (IFRS 13: Example 11 – Decommissioning liability)

This case also illustrates the use of an expected present value technique. In Case C, the expected present value is determined by probability-weighting several possible cash flow estimates.

ASC 820: Case D: Debt Obligation with Quoted Price (a market approach) (IFRS 13: Example 12 – Debt obligation: quoted price)

This case illustrates the use of the quoted price of an identical liability traded as an asset to measure the fair value of a liability under the fair value option. It reminds preparers to evaluate whether the quoted price for the asset includes the effect of factors not applicable to the fair value of the liability, such as third-party credit enhancements. Because there is no adjustment, the example concludes that the quote is a Level 1 measure of fair value. See FV 4.5.

ASC 820: Case E: Debt Obligation Using Present Value Technique (an income approach) (IFRS 13: Example 13 – Debt obligation: present value technique)

This case illustrates the income approach and the use of estimated proceeds at the measurement date (an entry value concept) to measure fair value. The issuer estimates the change in the required rate of return that a market participant would require based upon changes in the issuer's credit spread and performs a discounted cash flow calculation for the remaining term of the debt. As the revised discount rate captures a market participant's assumptions, no additional risk premium or profit is taken from the estimated proceeds used in the discounted cash flow calculation. Based on the prohibition in the guidance, no adjustment is made to the estimated proceeds for any restriction on transferability of the liability.

See FV 9: Consideration of Credit Risk for a detailed discussion of incorporation of credit risk in the fair value measurement of assets and liabilities. In addition, other issues with respect to applying the fair value concepts to liabilities include Question 4-4 and Example 4-5 below.

Question 4-5: How does fair value measurement based on a transfer price differ from a valuation based on settlement of a liability with the counterparty?

PwC Interpretive Response

The value of a liability measured at fair value is the price that would be paid to transfer the liability to a third party. The amount that would be required to pay a third party (of equivalent credit or nonperformance risk) to assume a liability may differ from the amount that a reporting entity would be required to pay its counterparty to extinguish the liability.

For example, a financial institution transferee may be willing to assume non-demand-deposit liabilities for less than the principal amount due to the depositors because of the relatively low funding cost of such liabilities. However, in other instances,

an additional risk premium above the expected payout may be required because of uncertainty about the ultimate amount of the liability (e.g., asbestos liabilities or performance guaranties). The risk premium paid to a third party may differ from the settlement amount the direct counterparty would be willing to accept to extinguish the liability. In addition, the party assuming a liability may have to incur certain costs to manage the liability or may require a profit margin.

These factors may cause the transfer amount to differ from the settlement amount. In measuring liabilities at fair value, the reporting entity must assume that the liability is transferred to a credit equivalent entity and that it continues after the transfer (i.e., it is not settled). As such, it follows that the hypothetical transaction used for valuation is based on a transfer to a credit equivalent entity that is in need of funding and willing to take on the terms of the obligation.

In application, there may be significant differences between settlement value and transfer value. Among the differences is the impact of credit risk, which is often not considered in the settlement of a liability, as demonstrated in the following example.

Example 4-5: Transfer Value Compared to Settlement Value

Consider a debt obligation held by a bank with a face value of \$100,000 and a market value of \$95,000. For purposes of this example, assume market interest rates are consistent with the amount in the note; however, there is a \$5,000 discount due to market concerns about the risk of nonperformance.

Settlement value

Absent exceptional circumstances, we would expect that the counterparty (Counterparty A) would be required to pay the full face value of the note to settle the obligation, as the bank may not be willing to discount the note by the credit risk adjustment. Therefore, the settlement value would be equal to the face amount of the note.

Transfer value

In order to calculate the transfer value, Counterparty A must construct a hypothetical transaction in which another party (Counterparty B), with a similar credit profile, is seeking financing on terms that are substantially the same as the note. Counterparty B could choose to enter into a new note agreement with the bank or receive the existing note from Counterparty A in a transfer transaction. In this hypothetical transaction, Counterparty B should be indifferent to obtaining financing through a new bank note or assumption of the existing note in transfer for a payment of \$95,000. The bank should also be indifferent to Counterparty B's choice, as both counterparties have similar credit profile. Therefore, the transfer value would be \$95,000, \$5,000 less than the settlement amount.

In order to ensure compliance with the fair value standards, reporting entities must adopt an approach to valuing liabilities that incorporates the transfer concept. There is no exemption from or "practical expedient" for this requirement.

4.1.6.2 Shareholders' Equity

The principles in the fair value standards are also applied to shareholders' equity. An example of this is when equity interests are issued as consideration in a business combination. The guidance specifies that even when there is no observable market

to provide pricing information about the transfer of an entity's own equity instrument, the entity should measure the fair value of its own equity instruments from the perspective of a market participant who holds the instrument as an asset. Similar to the application to liabilities, when equity instruments are not held by other parties as assets in an observable market, an entity should use a valuation technique using market participant assumptions.

4.1.7 Application to Financial Assets and Financial Liabilities with Offsetting Positions in Market Risks or Counterparty Credit Risk

The fair value standards include an exception to the general valuation principles when an entity manages its market risk(s) and/or counterparty credit risk exposure within a group (portfolio) of financial instruments, on a net basis. This exception includes portfolios of derivatives that meet the definition of a financial instrument that are managed on a net basis.

The "portfolio exception" allows for the fair value of those financial assets and financial liabilities to be measured based on the net positions of the portfolios (i.e., the price that would be received to sell a net long position or transfer a net short position for a particular market or credit risk exposure), rather than the individual values of financial instruments within the portfolio. This represents an exception to how financial assets and financial liabilities are measured under the fair value standards, which requires each unit of account within a portfolio to be measured on its own (that is, on a gross basis).

For further discussion of the portfolio exception, see 7.5.

4.2 Fair Value at Initial Recognition

Certain accounting standards require or permit an asset or a liability to be initially recognized at fair value. The fair value standards state that in many cases the transaction price equals fair value, such as when on the transaction date the transaction to buy an asset takes place in the market in which the asset would be sold. In determining whether a transaction price represents the fair value at initial recognition, a reporting entity should take into account factors specific to the transaction and to the asset or the liability. As discussed in ASC 820-10-30-3A and IFRS 13.B4, a transaction price may not represent the fair value of an asset or a liability at initial recognition if any of the following conditions exist:

- The transaction is between related parties, although the price in a related party transaction may be used as an input into a fair value measurement if the reporting entity has evidence that the transaction was entered into at market terms;
- The transaction takes place under duress or the seller is forced to accept the transaction price because of some urgency;
- The unit of account represented by the transaction price is different from the unit of account for the asset or liability measured at fair value (e.g., if the asset or liability is only one element in the transaction, such as in a business combination if the transaction includes unstated rights and privileges that are measured separately, or if the transaction price includes transaction costs); or
- The market in which the transaction takes place is different from the principal (or most advantageous) market (e.g., a wholesale market versus a retail market).

Under U.S. GAAP, if the transaction involves one or more of the above factors, a reporting entity may determine that the transaction price does not represent the fair value of the asset or the liability at initial recognition, resulting in recognition of a Day one gain or loss. In addition, in certain situations, the fair value measurement of certain hybrid financial instruments may differ from the transaction price, resulting in an unrealized gain or loss as indicated by ASC 815-15-25.

Under IFRS, a Day 1 gain or loss on a financial instrument (i.e., upon initial recognition of the instrument) is recognised only when the fair value of that instrument is evidenced by other observable current market transactions in the same instrument (i.e., without modification or repackaging) or based on a valuation technique whose variables include only data from observable markets.

4.3 Valuation Techniques

The fair value standards describe three main approaches to measuring the fair value of assets and liabilities: the market approach, the income approach, and the cost approach. The approaches are further described below.

4.3.1 Market Approach

ASC 820-10-55-3A through 55-3C and IFRS 13.B5-7 indicate that the market approach uses prices and other relevant information generated by market transactions involving identical or comparable (that is, similar) assets, liabilities, or a group of assets and liabilities, such as a business.

For example, valuation techniques consistent with the market approach often use market multiples derived from a set of comparables. Multiples might be in ranges with a different multiple for each comparable. The selection of the appropriate multiple within a range requires judgment, considering qualitative and quantitative factors specific to the measurement.

The market approach includes the use of matrix pricing. Matrix pricing is a mathematical technique that may be used to value debt securities by relying on the securities' relationship to other benchmark quoted prices and is commonly used to price bonds.

4.3.2 Cost Approach

ASC 820-10-55-3D and IFRS 13.B8 define the cost approach as follows:

The cost approach reflects the amount that would be required currently to replace the service capacity of an asset (often referred to as current replacement cost).

The cost approach assumes that the fair value would not exceed what it would cost a market participant to acquire or construct a substitute asset of comparable utility, adjusted for obsolescence. That is because a market participant buyer would not pay more for an asset than the amount for which it could replace the service capacity of that asset. Obsolescence includes "physical deterioration, functional (technological) obsolescence, and economic (external) obsolescence." Therefore, in using a replacement cost approach, a reporting entity would need to consider the impact of product improvements and changes in its assessment of the replacement cost.

4.3.3 Income Approach

ASC 820-10-55-3F and 3G and IFRS 13.B10-11 define the income approach as follows:

The income approach converts future amounts (for example, cash flows or income and expenses) to a single current (that is, discounted) amount. When the income approach is used, the fair value measurement reflects current market expectations about those future amounts.

Those valuation techniques include, for example, the following:

- a. Present value techniques
- b. Option-pricing models, such as the Black-Scholes-Merton formula or a binomial model (a lattice model), that incorporate present value techniques and reflect both the time value and the intrinsic value of an option
- c. The multi-period excess earnings method, which is used to measure the fair value of some intangible assets.

4.3.3.1 Application of Valuation Techniques

As noted above, present value techniques are a type of income approach. The fair value standards neither prescribe the use of one single specific present value technique nor limit the use of present value techniques to measure fair value, instead indicating that a reporting entity should use the appropriate technique based on facts and circumstances specific to the asset or liability being measured and the market in which they are transacted. However, the fair value standards (ASC 820-10-55-4 and IFRS 13.B12) discuss the use of present value techniques in the determination of fair value. Those techniques include the “discount rate adjustment” technique and the “expected cash flow (expected present value)” technique.

ASC 820-10-55-5 and IFRS 13.B13 indicate that the following key elements from the perspective of market participants should be captured in developing a fair value measurement using present value:

- a. An estimate of future cash flows;
- b. Expectations about possible variations in the amount and timing of cash flows;
- c. The time value of money based on the risk-free rate for monetary assets with maturity dates or durations that coincide with the period covered by the cash flows and pose neither uncertainty in timing nor risk of default to the holder (i.e., a “risk-free” interest rate);
- d. A risk premium for any uncertainty in the cash flows;
- e. Other factors that market participants would take into account in the circumstances; and
- f. For a liability, the risk of nonperformance, including the reporting entity’s own credit risk if not already included in the risk premium.

ASC 820-10-55-6 and IFRS 13.B14 discuss general principles that govern the application of all present value techniques.

- Cash flows and discount rates should reflect assumptions that market participants would use when pricing the asset or liability.
- Cash flows and discount rates should take into account only the factors attributable to the asset or liability being measured.
- To avoid double counting or omitting the effects of risk factors, discount rates should reflect assumptions that are consistent with those inherent in the cash flows. For example, a discount rate that reflects the uncertainty in expectations about future defaults is appropriate if using contractual cash flows of a loan (that is, a discount rate adjustment technique). That same rate should not be used if using expected (that is, probability-weighted) cash flows (that is, an expected present value technique) because the expected cash flows already reflect assumptions about the uncertainty in future defaults; instead, a discount rate that is commensurate with the risk inherent in the expected cash flows should be used.
- Assumptions about cash flows and discount rates should be internally consistent. For example, nominal cash flows, which include the effect of inflation, should be discounted at a rate that includes the effect of inflation. The nominal risk-free interest rate includes the effect of inflation. Real cash flows, which exclude the effect of inflation, should be discounted at a rate that excludes the effect of inflation. Similarly, after-tax cash flows should be discounted using an after-tax discount rate. Pretax cash flows should be discounted at a rate consistent with those cash flows.
- Discount rates should be consistent with the underlying economic factors of the currency in which the cash flows are denominated.

PwC Observation: In practice, adjusting the expected cash flows to reflect systematic risk is often difficult. In most instances, therefore, the discount rate that is applied to cash flows would incorporate systematic, or non-diversifiable risk, which would often be represented by a weighted-average cost of capital that would be required by a marketplace participant.

The fair value standards do not prescribe which valuation technique(s) should be used when measuring fair value and do not prioritize among the techniques. Instead, the fair value standards state that reporting entities should measure fair value using the valuation techniques that are appropriate in the circumstances and for which sufficient data are available, maximizing the use of relevant observable inputs and minimizing the use of unobservable inputs. Potential valuation approaches are highlighted in Figure 4-1.

Figure 4-1: Selected Valuation Techniques

Cost Approach	Market Approach	Income Approach
<i>"Mark-to-cost"</i>	<i>"Mark-to-market"</i>	<i>"Mark-to-model"</i>
<ul style="list-style-type: none">• Replacement cost method• Reproduction cost method	<ul style="list-style-type: none">• Market pricing based on recent transactions• Multiples	<ul style="list-style-type: none">• Relief from royalty method• Price premium method• Multi-period excess-earnings method (MEEM)• Incremental cash flow method• Discounted cash flow method (DCF)• Contingent claims/real option models

The selection of appropriate valuation techniques may be affected by the availability of relevant inputs as well as by the relative reliability of the inputs. In some cases, one valuation technique may provide the best indication of fair value (e.g., the use of the market approach in the valuation of an actively traded equity security); however, in other circumstances, multiple valuation techniques may be appropriate (e.g., in valuing a reporting unit for purposes of step 1 of a goodwill impairment test under U.S. GAAP or a cash-generating unit for purposes of a goodwill impairment test under IFRS).

When reconciling multiple valuation techniques, there may be fair value measurements for which one or more valuation techniques are not relevant either due to limited availability of inputs or based on the type of asset or liability being valued. Furthermore, the results of the application of the various techniques may not be equally representative of fair value, due to factors such as assumptions made in the valuation. In cases in which multiple techniques are used, the reporting entity will need to evaluate the results, considering the reasonableness of the range of values indicated by those results. The fair value will be based on the most representative point within the range in the specific circumstances.

ASC 820-10-35-24C and IFRS 13.64 state:

If the transaction price is fair value at initial recognition and a valuation technique that uses unobservable inputs will be used to measure fair value in subsequent periods, the valuation technique shall be calibrated so that at initial recognition the result of the valuation technique equals the transaction price. Calibration ensures that the valuation technique reflects current market conditions, and it helps a reporting entity to determine whether an adjustment to the valuation technique is necessary (for example, there might be a characteristic of the asset or liability that is not captured by the valuation technique). After initial recognition, when measuring fair value using a valuation technique or techniques that use unobservable inputs, a reporting entity shall ensure that those valuation techniques reflect observable market data (for example, the price for a similar asset or liability) at the measurement date.

As discussed in ASC 820-10-35-25 through 35-26 and IFRS 13.65-66, reporting entities should consistently apply the valuation techniques used to measure fair value for a particular type of asset or liability. However, it is appropriate to change a valuation technique or an adjustment that is applied to a valuation technique if the change will result in a measurement that better represents fair value; for instance, a change in a particular technique's weighting when multiple valuation techniques are used may be appropriate based on changes in facts and circumstances. A change in valuation technique may also be warranted as new markets develop, new information becomes available, information previously used is no longer available, valuation techniques improve, or market conditions change. Revised valuations resulting from a change in the valuation technique or its application are accounted for as a change in accounting estimate, with the change impacting the current and future periods, if applicable.

4.4 Inputs to Valuation Techniques

Inputs are used in applying the various valuation techniques and broadly refer to the assumptions that market participants use to make pricing decisions, including assumptions about risk. The fair value standards distinguish between (1) observable inputs, which are based on market data obtained from sources independent of the reporting entity and (2) unobservable inputs, which reflect the reporting entity's own view of the assumptions market participants would use. The fair value standards emphasize that a reporting entity's valuation technique for measuring fair value should maximize observable inputs and minimize unobservable inputs, regardless of whether the reporting entity is using the market approach, income approach, or cost approach. Inputs may include price information, volatility factors, specific and broad credit data, liquidity statistics, and all other factors that have more than an insignificant effect on the fair value measurement.

4.4.1 Observable Inputs Are Market-Based

A determination of what constitutes "observable inputs" will require significant judgment. We believe that observable inputs comprise the following hierarchical order:

- Prices or quotes from exchanges or listed markets (e.g., NYMEX, CBOT, or New York Stock Exchange (NYSE)) in which there is sufficient liquidity and activity;
- Proxy observable market data that is proven to be highly correlated and has a logical, economic relationship with the instrument that is being valued (e.g., electricity prices in two different locations, or "zones" that are highly correlated); and
- Other direct and indirect market inputs that are observable in the marketplace.

The following characteristics, if present, would provide evidence that an input is market-based and observable:

- Not proprietary: Observable data incorporated into an input of a valuation technique comes from sources other than within the reporting entity that is making the determination. In addition, the data should be distributed broadly, and not limited in its distribution to only the entity that is making the determination or to a small group of users. The data should be available to and regularly used by participants in the relevant market/product sector as a basis for pricing transactions or verifying such prices (i.e., an assumption generated internally by a reporting entity should be comparable to the external data).

- **Readily available:** Market participants should be able to obtain access to the data, although the supplier of the information could impose a reasonable fee for access.
- **Regularly distributed:** The term “regular distribution” means that the data is made available in a manner that is timely enough to allow the data to be meaningful in pricing decisions. Further, there should be procedures in place to verify that changes between intervals have not occurred that would render the data meaningless. In addition, the distributed information should indicate its effective date to ensure that data received is not stale.
- **From multiple independent sources:** Relevant comparable data should be obtainable from multiple acceptable sources. For example, to obtain sufficient evidence, a reporting entity may utilize both multiple broker quotes and pricing services that aggregate information from a number of data providers. Also, to be meaningful, the sources of data should be independent of one another, not all drawn from the same original source. For exchange-traded items, all sources will come from the original exchange, which is an independent source of information.
- **Transparent:** The people/sources providing and/or distributing the data and their role in a particular product/market should be transparent and known to be reliable. In addition, it needs to be clear to the people who provide the data that market participants use this information to price/verify transactions.
- **Verifiable:** The data should be verifiable. Further, there should be evidence that users are, in fact, regularly verifying the data. For example, people who are independent of a particular entity should be able to contact the third-party data provider directly in order to verify the data that is obtained and used. It also should be possible for people to verify the data by comparing it with data that is obtained from other reliable sources.
- **Reliable:** The data should reflect actual market parameters and be subject to certain levels of periodic testing and controls. These controls should exist at the entity that is providing the data, as well as at the entity that uses the data. Reporting entities should test and review the reliability of a source’s data on an ongoing basis before actually using that source as a basis for determining a fair value measurement.
- **Based on consensus:** The data or inputs that are provided by multiple sources should be comparable within a reasonably narrow range before an entity can safely regard the information as demonstrating a market consensus. The various items of data should be consistent with one another, with one source verifying other sources.
- **Provided by sources actively involved in the relevant market:** The data should originate from a source that is an active participant with respect to the relevant product and within the relevant market. Further, the entity that is using the data should periodically demonstrate that the source of the data provides reliable information on a consistent basis. Although there are instances in which market forces could help ensure that a data source provides reliable information, such assurance may need to be supplemented with other evidence, such as the results of back-testing that has been applied to verify the consistency and reliability of a particular source’s data.
- **Supported by market transactions:** Although data need not be traced directly to a “live” or “perfectly offsetting” transaction, there should be strong evidence that (1) the data sources draw their information from actual transactions or (2) the information is used by market participants to price actual market transactions. The reporting entity will normally need to perform a degree of review and/or verification of the data supporting the quote.

The above guidance only addresses whether inputs used in a fair value measurement are based on observable data. Models that are used in a valuation technique also should be reviewed and reassessed on an ongoing basis to ensure that they reliably calculate an accurate fair value measurement.

Reporting entities should consider all relevant evidence in a fair value measurement. In weighing information from various sources, reporting entities should assess the extent to which the evidence supports the objective of a fair value measurement. For example, when evaluating indications of fair value from broker quotes and pricing services, reporting entities should obtain an understanding of how the broker or pricing service determined the quotes, including the sources of fair value inputs used. Less reliance should be placed on internally-developed models that have not been calibrated to relevant observable transactions.

4.4.1.1 Different Types of Markets with Observable Inputs

ASC 820-10-35-36A and IFRS 13.68 provide examples of markets in which inputs might be observable for some assets and liabilities (e.g., financial instruments). They include the following:

- Exchange market: In an active exchange market, closing prices are both readily available and representative of fair value (e.g., NYSE, London Stock Exchange (LSE), Brazilian Mercantile & Futures Exchange Bolsa de Valores Mercadorias & Futuros de São Paulo (BM&FBOVESPA) and other major exchanges' closing prices are both readily available and representative of fair value).
- Dealer market: In a dealer market, dealers stand ready to trade for their own account, thereby providing market liquidity by using their capital to hold an inventory of the items for which they make a market. Typically, bid prices and ask prices are more readily available than closing prices. Over-the-counter markets are dealer markets. Dealer markets also exist for other assets and liabilities, such as financial instruments, commodities, and physical assets.
- Brokered market: In a brokered market, brokers attempt to match buyers with sellers, do not stand ready to trade for their own account, and do not use their own capital to hold an inventory of the items for which they make a market. For a broker quote to be observable, a reporting entity will need transparency into the market data used to develop the quote and to make a judgment as to whether the market data is observable.
- Principal-to-principal market: Principal-to-principal transactions (both originations and resales) are negotiated independently, with no intermediary. Often, very little information about these transactions is publicly available.

Entities should consider the characteristics of the underlying markets in assessing whether a valuation input is observable.

4.4.1.2 Fair Value Measurements and Inactive Markets

ASC 820-10-35-54C through 35-54H and IFRS 13.B37-42 address valuations in markets that previously were active but are inactive in the current reporting period.

The fair value standards provide additional factors to consider in measuring fair value when there has been a significant decrease in market activity for an asset or a liability and quoted prices are associated with transactions that are not orderly. For those measurements, pricing inputs for referenced transactions may be less relevant to

their measurement. A reporting entity must determine if a pricing input for an inactive security was “orderly” and representative of fair value by assessing if it has the information to determine that the transaction is not forced or distressed. If it cannot make that determination, the input may be less relevant to the measurement.

Evaluating Whether There Has Been a Significant Decrease in Volume or Level of Activity

ASC 820-10-35-54C and IFRS 13.B37 provide a list of factors to consider in determining whether there has been a significant decrease in the volume or level of activity in relation to normal market activity. The factors that an entity should evaluate include (but are not limited to):

- There are few recent transactions.
- Price quotations are not developed using current information.
- Price quotations vary substantially either over time or among market makers (for example, some brokered markets).
- Indices that previously were highly correlated with the fair values of the asset or liability are demonstrably uncorrelated with recent indications of fair value for that asset or liability.
- There is a significant increase in implied liquidity risk premiums, yields, or performance indicators (such as delinquency rates or loss severities) for observed transactions or quoted prices when compared with the reporting entity’s estimate of expected cash flows, taking into account all available market data about credit and other nonperformance risk for the asset or liability.
- There is a wide bid-ask spread or significant increases in the bid-ask spread.
- There is a significant decline in the activity of, or there is an absence of a market for new issues (that is, a primary market) for that asset or liability or similar assets or liabilities.
- Little information is publicly available (for example, a principal-to-principal market).

If a reporting entity concludes that there has been a significant decrease in the volume or level of activity for an asset or liability, the reporting entity should perform further analysis of the transactions or quoted prices observed in that market. Further analysis is required because the transactions or quoted prices may not be determinative of fair value and significant adjustments may be necessary when using the information in estimating fair value.

Adjusting Observable Inputs

The guidance in the fair value standards does not prescribe a methodology for making significant adjustments to transactions or quoted prices when estimating fair value. Instead of applying a prescriptive approach, reporting entities should weight indications of fair value.

If there has been a significant decrease in the volume and level of activity for the asset or liability, it may be appropriate for the reporting entity to change its valuation technique or to apply multiple valuation techniques. For example, a reporting entity may use indications of fair value developed from both a market approach and a present value technique in its estimate of fair value. When using multiple indications of fair value, the reporting entity should consider the reasonableness of the range of

fair value indications. The objective is to determine the point within that range that is most representative of fair value under current market conditions.

An approach to selecting a point within a range of indications of fair value would be to weight the multiple indications. Reporting entities are required to consider the reasonableness of the range, as noted ASC 820-10-35-54F and IFRS 13.B40, a wide range of fair value measurements might indicate that further analysis is required in order to achieve the fair value measurement objective. Importantly, the fair value measurement objective remains the same regardless of the valuation technique(s) used, even where circumstances indicate that there has been a significant decrease in the volume and level of activity for the asset or liability.

PwC Observation: When there has been a significant decrease in the volume or level of activity for the asset or liability, a reporting entity will need to perform additional work to evaluate observable inputs, such as quoted prices or broker quotes, to determine whether observable inputs reflect orderly transactions or whether a valuation technique reflects market participant assumptions. A reporting entity may still use price quotes when markets are not active, including those obtained from pricing services and broker quotes, provided it determines that those prices reflect orderly transactions. Furthermore, a reporting entity is not precluded from concluding that the inputs are Level 2 in the fair value hierarchy on the basis that a market is not active.

The reporting entity's intention to hold an asset is not relevant in estimating fair value at the measurement date. Rather, the fair value measurement should be based on a hypothetical transaction to sell the asset or transfer the liability at the measurement date, considered from the perspective of willing market participants.

Identifying Transactions that Are Not Orderly

ASC 820-10-35-54I and IFRS 13.B43 state that even when an entity determines that there has been a significant decrease in the volume and level of activity for an asset or liability in relation to normal market activity for the asset or liability (or similar assets or liabilities), it is not appropriate to conclude that all transactions in the market for the asset or liability are not orderly. Rather, a determination as to whether a transaction is orderly, and thus a relevant input into valuation requires analysis and often a high degree of judgment. The fair value standards provide a list of circumstances that may indicate that a transaction is not orderly, including (but not limited to):

- There was not adequate exposure to the market for a period before the measurement date to allow for marketing activities that are usual and customary for transactions involving such an asset or liability.
- There was a usual and customary marketing period, but the seller marketed the asset or liability to a single market participant.
- The seller is in or near bankruptcy or receivership (i.e., distressed) or the seller was required to sell to meet regulatory or legal requirements (i.e., forced).
- The transaction price is an outlier when compared with other recent transactions for the same (or a similar) asset or liability.

The determination of whether transactions are orderly should be based on the weight of the available evidence.

Evaluating Observable Transaction Prices

The determination of whether a transaction is (or is not) orderly is more difficult if there has been a significant decrease in the volume and level of activity for the asset or liability. ASC 820-10-35-54J and IFRS 13.B44 provide guidance to be considered in evaluating observable transaction prices under different circumstances:

- *Transaction is not orderly*—If the evidence indicates the transaction is not orderly, a reporting entity is required to place little, if any, weight (compared with other indications of fair value) on that observable transaction price when estimating fair value.
- *Transaction is orderly*—If the evidence indicates the transaction is orderly, a reporting entity is required to consider that transaction price when estimating fair value. The amount of weight placed on that transaction price (when compared with other indications of fair value) will depend on the facts and circumstances of the transactions and the nature and quality of other available inputs.

If a reporting entity does not have sufficient information to conclude whether an observed transaction is orderly (or is not orderly), it is required to consider that transaction price when estimating fair value or implied market risk premiums. In those circumstances, that transaction price may not be determinative (i.e., the sole or primary basis) for estimating fair value. Less weight should be placed on transactions in which an entity has insufficient information to conclude whether the transaction is orderly when compared with other transactions that are known to be orderly.

4.5 Fair Value Hierarchy

To increase consistency and comparability in fair value measurements, the fair value standards establishes a fair value hierarchy to prioritize the inputs used in valuation techniques. There are three broad levels to the fair value hierarchy of inputs to fair value (Level 1 being the highest priority and Level 3 being the lowest priority):

- Level 1: Observable inputs that reflect quoted prices (unadjusted) for identical assets or liabilities in active markets;
- Level 2: Inputs other than quoted prices included in Level 1 that are observable for the asset or liability either directly or indirectly; and
- Level 3: Unobservable inputs (e.g., a reporting entity's own data).

By distinguishing between inputs that are observable in the marketplace, and therefore more objective, and those that are unobservable and therefore more subjective, the hierarchy is designed to indicate the relative reliability of the fair value measurements.

In some cases, a valuation technique used to measure fair value may include inputs from multiple levels of the fair value hierarchy. The lowest level of significant input determines the placement of the entire fair value measurement in the hierarchy. Assessing the significance of a particular input to the fair value measurement requires judgment, considering factors specific to the asset or liability. Determining whether a fair value measurement is based on Level 1, Level 2, or Level 3 inputs is important because certain disclosures required by the fair value standards are applicable only to those fair value measurements that use Level 3 inputs. See further discussion of disclosure requirements in FV 5: Disclosures.

The key characteristics of each level of the fair value hierarchy are as follows.

Figure 4-2: Fair Value Hierarchy

The fair value hierarchy gives the highest priority to quoted prices in active markets and gives the lowest priority to unobservable inputs. Some of the key differentiating factors are:

Level	Characteristics	Examples
1	<ul style="list-style-type: none"> • Observable • Quoted prices for identical assets or liabilities in active markets (unadjusted) 	<ul style="list-style-type: none"> • NYSE process for equity securities • London Metal Exchange (LME) futures contract prices
2	<ul style="list-style-type: none"> • Quoted; similar items in active markets • Quoted; identical/similar items, no active market • Liabilities traded as assets in inactive markets 	<ul style="list-style-type: none"> • Posted or published clearing prices, if corroborated with market transactions • A dealer quote for a non-liquid security, provided the dealer is standing ready and able to transact
3	<ul style="list-style-type: none"> • Unobservable inputs (e.g., a company's own data) • Market perspective is still required 	<ul style="list-style-type: none"> • Inputs obtained from broker quotes that are indicative (i.e., not firm and able to be transacted upon) or not corroborated with market transactions • Models that incorporate management assumptions that cannot be corroborated with observable market data

Level 1 inputs should be used whenever available. Inputs must be observable for substantially the full term to qualify as Level 2. Valuations using Level 3 inputs require significantly more disclosure. Note that the above are examples of inputs that may be considered appropriate for the levels indicated. However, the facts and circumstances applicable to the measurement should always be assessed.

PwC Observation: The categorization of a particular instrument in the fair value hierarchy may change over time. As markets evolve, certain markets become more or less liquid, inputs become more or less observable, and the level within the fair value hierarchy could change.

Further discussion of the characteristics of each of the levels is as follows.

4.5.1 Level 1 Inputs

Level 1 inputs are quoted prices (unadjusted) for identical assets or liabilities in active markets. A quoted price for an identical asset or liability in an active market (e.g., an equity security traded on a major exchange) provides the most reliable fair value measurement and, if available, should be used to measure fair value in that particular market.

The fair value standards state that there should be no adjustment to Level 1 inputs. In accordance with ASC 820-10-35-44 and IFRS 13.80, the fair value of a position for a single financial instrument in an active market should be calculated as the product of

the quoted price for the individual instrument times the quantity held. Also, ASC 820-10-35-36B and IFRS 13.69 state in part:

In all cases, if there is a quoted price in an active market (that is, a Level 1 input) for an asset or liability, a reporting entity shall use that quoted price without adjustment when measuring fair value.

That is, blockage factors and control premiums are specifically not permitted to be applied to instruments in which there is a quoted price in an active market.

As discussed in FV 4.1.3, the “market” determination is made from the perspective of the reporting entity and the availability of pricing inputs is not part of that assessment. For example, if the reporting entity is a retail customer and does not have access to the wholesale market, quoted prices in the wholesale market will not qualify as Level 1 inputs for that reporting entity. However, the availability of pricing inputs may impact the choice of valuation technique (e.g., if Level 1 inputs are available for a market approach, that approach may provide more objective evidence of fair value than an income approach using Level 2 inputs). Furthermore, if Level 1 inputs are available within a particular market, those inputs should be prioritized over Level 2 or 3 inputs in the same market, except as further discussed below.

ASC 820-10-35-40 through 35-46 and IFRS 13.76-80 discuss other considerations when using Level 1 inputs as follows.

4.5.1.1 Level 1 Inputs—Large Number of Similar Assets and Liabilities

ASC 820-10-35-41C and IFRS 13.79 provide a practical expedient for the fair value measurement of a large number of similar assets or liabilities (e.g., debt securities) for which quoted prices in active markets are available but not readily accessible. In accordance with this guidance, a reporting entity may measure fair value by using an alternative pricing method (e.g., matrix pricing) instead of obtaining quoted prices for each individual security, provided that the reporting entity demonstrates that the method replicates actual prices. If an alternative pricing method is used as a practical expedient, the resulting fair value measurement will be Level 2.

4.5.1.2 Level 1 Inputs—Post-Market Close Events

As discussed in ASC 820-10-35-41C and IFRS 13.79, in some situations, significant events (e.g., principal-to-principal transactions, brokered trades, or announcements) may occur after the close of a market but before the measurement date. When that is the case, a quoted market price may not be representative of fair value on the measurement date. Reporting entities should establish and consistently apply a policy for identifying and incorporating events that may affect fair value measurements. In addition, if a reporting entity adjusts the quoted price, the resulting measurement will not be classified in Level 1, but will be a lower-level measurement.

PwC Observation: The measurement date, as specified in each accounting standard requiring or permitting fair value measurements, is the “effective” valuation date. Accordingly, a valuation should reflect only facts and circumstances that exist on the specified measurement date (these include events occurring before the measurement date or that were reasonably foreseeable on that date) so that the valuation is appropriate for a transaction that would occur on that date.

4.5.1.3 Level 1 Inputs—Blockage Factors

When measuring the fair value of a financial instrument that trades in an active market, the fair value standards prohibit the use of a blockage factor, a discount applied to reflect the inability to trade a block of the security because the market for the security, although an active one, cannot absorb the entire block at one time without adversely affecting the quoted market price.

4.5.1.4 Level 1 Inputs—Control Premiums

In ASC 820-10-35-36B and IFRS 13.69, the Boards clarified that control premiums are also not permitted as adjustments to Level 1 instruments.

Question 4-6: Can a single price source or quote be considered a Level 1 valuation?

PwC Interpretive Response

Maybe. Absent the source being transactions on an exchange, in general, a single source would not be a Level 1 input since a single market-maker would almost by definition suggest an inactive market. However, in some rare cases, a single market-maker dominates the market for a particular security such that trading in that security is active but all flows through that market-maker. In those limited circumstances, a Level 1 determination may be supported.

Absent that fact pattern, the reporting entity must determine if the single broker quote represents a Level 2 or Level 3 input. Key considerations in making this assessment include the following:

- Level 2: a single broker quote may be supported as a Level 2 input, if there is observable market information on comparables to support the single broker quote, and/or the broker stood willing to transact in the security at that price.
- Level 3: a single broker quotation is frequently a Level 3 input if there are no comparables and the quote was provided an indicative value with no commitment to actually transact at that price (e.g., information obtained under an agreement to provide administrative pricing support to a fund for a security purchased from that broker). Such information will require additional follow-up or due diligence procedures when used in financial reporting.

A reporting entity should specifically consider the underlying facts associated with each valuation input in assessing the appropriate classification in the fair value hierarchy.

4.5.2 Level 2 Inputs

Level 2 inputs are inputs that are observable, either directly or indirectly, but do not qualify as Level 1. In accordance with ASC 820-10-35-48 and IFRS 13.82:

If the asset or liability has a specified (contractual) term, a Level 2 input must be observable for substantially the full term of the asset or liability. Level 2 inputs include the following:

- a. Quoted prices for similar assets or liabilities in active markets
- b. Quoted prices for identical or similar assets or liabilities in markets that are not active

- c. Inputs other than quoted prices that are observable for the asset or liability, for example:
 - 1. Interest rates and yield curves observable at commonly quoted intervals
 - 2. Volatilities [Implied volatilities]
 - 3. Prepayment spreads [Credit spreads]
 - 4. Loss severities
 - 5. Credit risks
 - 6. Default rates.
- d. Market-corroborated inputs.

Adjustments to Level 2 inputs should include factors such as the condition and/or location of the asset or the liability on the measurement date and the volume and level of activity in the markets within which the inputs are observed. An adjustment that is significant to the fair value measurement may place the measurement in Level 3 in the fair value hierarchy.

PwC Observation: Certain inputs derived through extrapolation or interpolation may be corroborated by observable market data (e.g., extrapolating observable one- and five-year interest rate yields to derive three-year yields) and would be considered a Level 2 input. For example, assume that the Argentinean interest rate yield curve is correlated to the Chilean interest rate yield curve. Also assume that the Argentinean yield curve is observable for three years but the Chilean yield curve is observable for only two years. A company could extrapolate the third year of the Chilean yield curve based on the extrapolation of the Chilean yield curve from years one and two and the correlation of the third year Argentinean yield curve. In this example, the Chilean yield for year three would be considered a Level 2 input. However, extrapolating short term data to measure longer term inputs may require assumptions and judgments that cannot be corroborated by observable market data and therefore, may represent a Level 3 input.

4.5.3 Level 3 Inputs

ASC 820-10-35-52 and IFRS 13.86 define Level 3 inputs as follows:

Level 3 inputs are unobservable inputs for the asset or liability.

Unobservable inputs shall be used to measure fair value to the extent that relevant observable inputs are not available, thereby allowing for situations in which there is little, if any, market activity for the asset or liability at the measurement date. However, the fair value measurement objective remains the same, that is, an exit price at the measurement date from the perspective of a market participant that holds the asset or owes the liability. Therefore, unobservable inputs shall reflect the assumptions that market participants would use when pricing the asset or liability (including assumptions about risk).

Level 3 inputs may include information derived through extrapolation or interpolation that cannot be directly corroborated by observable market data. In developing Level 3 inputs, a reporting entity need not undertake exhaustive efforts to obtain information about market participant assumptions; however, it should take into account all information that is reasonably available. Therefore, if a reporting entity uses its own data to develop Level 3 inputs, that data should be adjusted if information is reasonably available that indicates that market participants would use different assumptions.

Due to the amount of judgment involved in categorizing an input within the fair value hierarchy, a number of questions arise in application:

Question 4-7: How does the level of activity in a market affect the classification of an input in the fair value hierarchy?

PwC Interpretive Response

The level of activity in the market will contribute to the determination of whether an input is observable as a Level 1 or Level 2 input.

The fair value standards define an active market as one in which transactions for the asset or liability being measured take place with sufficient frequency and volume to provide pricing information on an ongoing basis. However, an observable input that may otherwise be a Level 1 input will be rendered Level 2 if the information relates to a market that is not active.

For example, in assessing market inputs, consider a security for which aggregate broker data is published on occasion, and for which trading does not occur on a regular basis. In this case, the price is quoted only occasionally and the security is not regularly traded. In determining the level of inputs within the hierarchy, the company should consider what recent activity the quote is based on, as well as trading volume trends. While all of the facts and circumstances need to be examined, the information provided in this example appears to indicate the quote is a Level 2 or Level 3 input.

Question 4-8: Does the valuation technique selected impact the classification of the fair value measurement within the fair value hierarchy?

PwC Interpretive Response

The fair value hierarchy prioritizes the inputs to the valuation techniques, not the valuation techniques themselves. Selecting the appropriate valuation technique(s) should be based on an assessment of the facts and circumstances specific to the asset or liability being measured. A reporting entity is required to use those valuation techniques that are appropriate in the circumstances and for which inputs are available without undue cost. However, a valuation technique using observable inputs should be prioritized over an approach populated with unobservable inputs.

Question 4-9: What is the impact of the use of valuation models on the classification within the fair value hierarchy?

PwC Interpretive Response

Reporting entities commonly use proprietary models to calculate certain fair value measurements (e.g., some long-term derivative contracts, impairments of financial

instruments, and illiquid investments such as real estate). Models may also be used to perform other fair value measurements, such as those required for asset retirement obligations or impairments of long-lived assets. The level within the fair value hierarchy is determined based on the characteristics of the inputs to the valuation, not on the methodology or complexity of the model. However, certain valuations may require the use of complex models to develop forward curves and other inputs; therefore, the models and inputs are frequently inextricably linked.

The use of a model does not automatically result in a Level 3 fair value measurement. For example, a standard valuation model that uses all observable inputs is likely to result in a measurement that is classified as Level 2. However, to the extent that adjustments or interpolations are made to Level 2 inputs in an otherwise standard model, the measurement may fall into Level 3, depending on whether the adjusted inputs are significant to the measurement. Furthermore, if a reporting entity uses a valuation model that is proprietary and relies on unobservable inputs, the resulting fair value measurement will be categorized as Level 3.

For example, consider the measurement of a financial asset that is not actively traded. The valuation is performed using a proprietary model incorporating inputs provided by brokers. However, while the financial asset is not actively traded, assume the broker providing the inputs is standing ready to transact at the quoted price and/or sufficient corroborating data is obtained. Provided the model does not include management assumptions used to make adjustments to the data, it may be reasonable to conclude that the inputs, and thus the measurement, would be classified as a Level 2 fair value measurement.

However, in situations where Level 2 inputs are not available and the company is required to develop a forward price curve because the duration of the contract exceeds the length of time that observable inputs are available, or is otherwise required to make adjustments to observable data, the valuation is relying on Level 3 inputs and would be classified as a Level 3 fair value measurement if those inputs are significant to the overall fair value measurement.

Question 4-10: How does the use of a pricing service or broker quotes impact the classification of an input in the fair value hierarchy?

PwC Interpretive Response

Many reporting entities obtain information from pricing services, such as Bloomberg, Interactive Data Corporation, Loan Pricing Corporation, Markit's Totem Service, broker pricing information, and similar sources, for use as inputs in their fair value measurements. The information provided by these sources could be any level in the fair value hierarchy, depending on the source of the information for a particular security. Classification within the hierarchy is further discussed as follows:

Level 1 Inputs

Generally, for a price or other input to qualify as Level 1 in the fair value hierarchy, reporting entities should be able to obtain the price from multiple sources and result from actual transactions in identical assets and liabilities. Level 1 inputs relate to items traded on an exchange or an active index/market location.

Level 2 and Level 3 Inputs

In some cases, reporting entities may rely on pricing services or published prices that represent a consensus reporting of multiple brokers. It may not be clear if the prices provided can be transacted upon. In order to support an assertion that a broker

quote or information obtained from a consensus pricing service represents a Level 2 input, the reporting entity should perform due diligence to understand how the price was developed, including understanding the nature and observability of the inputs used to determine that price. Additional corroboration could include:

- Discussions with pricing services, dealers, or other companies to obtain additional prices of identical or similar assets to corroborate the price;
- Back-testing of prices to determine historical accuracy against actual transactions; or
- Comparisons to other external or internal valuation model outputs.

The level of due diligence performed is highly dependent on the facts and circumstances, such as the type and complexity of the asset or liability being measured, as well as its observability and liquidity in the marketplace. Generally, the more specialized the asset or liability being measured and the less liquid it is, the more due diligence will be necessary to corroborate the price in order to support classification as a Level 2 input.

When performing due diligence, reporting entities should clearly document the assessment performed in arriving at their conclusions. Without additional supporting information, prices obtained from a single or multiple broker sources or a pricing service are indicative values or proxy quotes, and we believe such information generally represents Level 3 inputs.

Finally, it is important to note that an entity must have some higher-level (i.e., observable) data to support classification of an input as Level 2. A broker quote for which the broker does not stand ready to transact cannot be corroborated with an internal model populated with Level 3 information to support a Level 2 classification. Multiple indicative broker quotes based on Level 3 inputs do not raise the categorization of that instrument to Level 2. However, there may be other instances in which pricing information can be corroborated by market evidence, resulting in a Level 2 input.

Other Considerations

Ultimately, it is management's responsibility to determine the appropriateness of its fair value measurements and their classification in the fair value hierarchy, including measurements for which pricing services are used. Therefore, reporting entities that use pricing services will need to understand how the pricing information has been developed and obtain sufficient information to be able to determine where instruments fall within the fair value hierarchy.

For example, a pricing service could provide quoted prices for an actively traded equity security which, if corroborated by the reporting entity, would be Level 1 inputs. The same pricing service may also provide a corporate bond price based on matrix pricing, which may constitute a Level 2 or Level 3 input depending on the information used in the model.

In another example, a reporting entity may obtain a price from a broker for a residential mortgage-backed security. The reporting entity may be fully aware of the depth and liquidity of the security's trading in the marketplace based on its historical trading experience. In addition, the pricing methodology for the security may be common and well understood (e.g., matrix pricing) and therefore less due diligence may be required. However, a similar conclusion may not be appropriate in all

instances (e.g., a collateralized debt obligation that is not frequently traded and does not have liquidity in the marketplace).

Question 4-11: How should a reporting entity assess the significance of an input in determining the classification of a fair value measurement within the fair value hierarchy?

PwC Interpretive Response

In describing the fair value hierarchy, ASC 820-10-35-37A and IFRS 13.73 state, in part:

In some cases, the inputs used to measure the fair value of an asset or liability might be categorized within different levels of the fair value hierarchy. In those cases, the fair value measurement is categorized in its entirety in the same level of the fair value hierarchy as the lowest level input that is significant to the entire measurement.

It should be noted, however, an input could be unobservable and have little impact on the valuation at initial recognition, but the same input could have a significant remeasurement impact if markets and related assumptions change.

The valuation of many assets and liabilities necessarily involves inputs from two or more levels within the hierarchy. Determining the significance of a particular input to a fair value measurement is a matter of judgment. A starting point is to have a basic understanding of all of the inputs that factor into the fair value measurement, the relative significance of each of the inputs, and whether those inputs are externally verifiable or are derived through internal estimates.

There are no bright lines for determining significance, and two different entities may reach different conclusions in the same fact pattern. ASC 820-10-55-21(b) and IFRS 13.B35(b) provide an example of an interest rate swap with a ten-year life has an observable yield curve for nine years. In that example, provided that the extrapolation of the yield curve to ten years is not significant to the fair value measurement of the swap in its entirety, the fair value measurement is considered Level 2. The final year of the instrument was judged as not being a significant input. We believe a reporting entity should consider the impact of lower level inputs on the fair value measurement at the time the measurement is made.

In assessing the significance of unobservable inputs to an asset or liability's fair value, a reporting entity should (1) consider the sensitivity of the asset or liability's overall value to changes in the data and (2) assess the likelihood of variability in the data over the life of the asset or liability. Additionally, we believe that the assessment should be performed on both an individual and an aggregate basis when more than one item of unobservable data (or more than one parameter) is used to measure the fair value of an asset or liability. This assessment will depend on the facts and circumstances specific to a given asset or liability and will require significant professional judgment.

Given the level of judgment that may be involved, a reporting entity should document its rationale when the determination of the classification of inputs in the fair value hierarchy is not straightforward. In addition, a reporting entity should develop and consistently apply a policy for determining significance.

Specific issues that may arise in application of the fair value hierarchy include the following.

Question 4-12: If a reporting entity invests in a fund (an alternative investment) that invests primarily in exchange-traded equity securities, can the fair value measurement be classified as Level 1 in the fair value hierarchy?

PwC Interpretive Response

It depends. In this fact pattern the reporting entity should first determine the appropriate unit of account (i.e., what is being measured). As further discussed in ASC 820-10-35-2E and IFRS 13.14, the unit of account is determined based on other applicable U.S. GAAP or IFRS.

In most instances we would expect the unit of account for interests in mutual or alternative fund investments to be the interest in the investee fund itself, rather than the individual assets and liabilities held by the fund. The categorization within the fair value hierarchy thus should be assessed based on the investment security in the fund itself and not the securities within the fund. The investment could be classified as Level 1 if the fair value measurement of the interest in the fund (not the underlying investments) was based on observable inputs that reflect quoted prices (unadjusted) for identical assets in active markets (i.e., the fund is exchange-traded). The assessment should be based on the individual facts and circumstances for each investment and reflect the considerations discussed in FV 4.5 and ASC 820-10-35-54B.

An investor cannot simply “look through” an interest in an alternative investment to the underlying assets and liabilities to estimate fair value or to determine the classification of the fair value measurement within the fair value hierarchy in accordance with the fair value standards. Rather, the reporting entity should consider the inputs used to establish the fair value and whether they were observable or unobservable.

Under U.S. GAAP, ASC 820 provides a practical expedient that permits an entity with an investment in an investment company to use as a measure of fair value in specific circumstances the reported net asset value without adjustment. This practical expedient is not permitted under IFRS. Refer to FV 2.2.2.1 for additional information.

Question 4-13: How would the fair value measurement of a foreign exchange contract be classified in the fair value hierarchy if it is based on interpolated information?

PwC Interpretive Response

In this fact pattern, assume that the reporting entity prepares its fair value measurement based on interpolation of observable market data. Key considerations in determining the appropriate classification within the fair value hierarchy include the following:

- A spot foreign exchange (FX) rate that can be verified through market data is a Level 1 input.
- A fair value measurement that can be interpolated using externally quoted sources would generally be a Level 2 valuation. For example, assume that there are forward prices available for 30 and 60-day FX contracts and the company is valuing a 50-day contract. If the price can be derived through simple interpolation, the resulting measurement is a Level 2 valuation.

However, if the contract length is three years and prices are only available for the next two years, any extrapolated amount would be considered a Level 3 valuation if there was no other observable market information to corroborate the pricing inputs in the third year.

For discussion of the levels within the fair value hierarchy of certain instruments, including investments that calculate net asset value, see FV 7.

4.5.4 Inputs Based on Bid and Ask Prices

Bid-ask price quoting is common within markets for certain securities, financial instruments and commodities. In these markets, dealers stand ready to buy at the bid price and sell at the ask price. If an input within the fair value hierarchy is based on bid prices and ask prices, the fair value measurement should represent the price within the bid-ask spread at which market participants would transact on the measurement date. The fair value standards provide a practicability exception to this principle, allowing the use of mid-market pricing or other pricing conventions within the bid-ask spread as a practical expedient for fair value. A reporting entity may also establish a policy to use bid prices for long positions (assets) and ask prices for short positions (liabilities). Once established, a reporting entity should follow its accounting policy consistently.

Many reporting entities currently use or are contemplating the use of the mid-market convention as permitted by the fair value standards because it simplifies some of the necessary calculations and allows use of the same quotes and prices when calculating the fair value of both assets and liabilities. As a result of the diversity in practice, the following questions arise with respect to the bid-ask spread guidance in the fair value standards.

Question 4-14: Can a reporting entity change its policy with respect to the use of the mid-market pricing convention?

PwC Interpretive Response

ASC 820-10-35-36C through 35-36D and IFRS 13.70-71 provide the following guidance when considering use of a practical expedient for valuation when using inputs based on bid and ask prices:

- If an asset or liability measured at fair value has a bid price and an ask price (for example, an input from a dealer market), the price within the bid-ask spread that is most representative of fair value in the circumstances shall be used to measure fair value, regardless of where in the fair value hierarchy the input falls (Level 1, 2, or 3). The use of bid prices for long positions (assets) and ask prices for short positions (liabilities) is permitted but not required.
- The fair value standards do not preclude the use of mid-market pricing or other pricing conventions that are used by market participants as a practical expedient for fair value measurements within a bid-ask spread. Under U.S. GAAP, bid-ask spread pricing methods appropriate under Securities and Exchange Commission (SEC) Accounting Series Release No. 118, Accounting for Investment Securities by Registered Investment Companies, are appropriate under this Subtopic.

Given these alternatives, a reporting entity must adopt and consistently apply an accounting policy for pricing within the bid-ask spread. When developing its policy, a reporting entity will want to consider the practical and other implications of their possible choices.

The method of estimating fair value should generally be applied consistently. Use of the mid-market convention is a practical expedient allowed by the fair value standards, but its use may result in a measurement that is less precise than the use of bid prices for long positions and ask prices for short positions.

Question 4-15: In what circumstances is application of the mid-market pricing convention appropriate?

PwC Interpretive Response

The fair value standards indicate that pricing inputs with bid-ask spreads may be Level 1, 2, or 3 inputs; however, they do not specifically address when it is appropriate to use the mid-market practical expedient. Election of the mid-market practical expedient is presumed appropriate for pricing inputs within a bid-ask spread that falls within Level 1 of the fair value hierarchy (i.e., unadjusted observable quoted prices for identical assets or liabilities). In these cases, a reporting entity does not need to evaluate mid-market pricing against expectations of where it actually would trade within the bid-ask range.

The mid-market practical expedient is appropriate for inputs from markets in which stand-ready, dealer-based bid-ask pricing exists. In addition, it may be applicable in other circumstances in which a bid-ask pricing protocol is used by market participants in valuation and measurement. Generally, the less observable the input, the less probable that it is subject to a bid-ask spread and, therefore, the less likely that use of a mid-market convention would be appropriate. For example, it may not be appropriate to apply a mid-market convention when the bid-ask spread is wide, indicating the inclusion of a pricing element other than transaction costs (e.g., a liquidity reserve).

Question 4-16: Is it appropriate to record a gain or loss at the inception of a contract as a result of the use of a mid-market pricing convention?

PwC Interpretive Response

The fair value standards permit the use of a mid-point pricing convention as a practical expedient. Whether it is appropriate to record a gain or loss at the inception of the contract as a result of the use of this convention will depend on the facts. For example, assume a company enters into a six-month forward contract for the purchase of natural gas at an actively traded location (the company's principal market for that type of transaction) and the contract is accounted for at fair value under ASC 815 and IAS 39. The bid-ask spread is \$1 (bid: \$99; ask: \$100). Use of the mid-point convention will result in a \$0.50 loss at initial recognition assuming the company purchased at the ask price and recorded the contract using the mid-price convention.

In this case, because the contract trades at a liquid point and was entered into in the company's principal market, the transaction price would be expected to be the same as the exit price. For Level 1 inputs, it is expected that differences between the mid-market pricing and the trade execution prices would be due to transaction costs and should be minimal. Thus, recognition of an initial loss in this case would be appropriate if the reporting entity has a policy of pricing at the mid-point in the spread.

However, as further described above, a reporting entity should evaluate significant bid-ask spreads to determine whether the mid-point is truly indicative of the fair value of the contract.

Question 4-17: How should a reporting entity account for transaction costs in a bid-ask spread?

PwC Interpretive Response

While conceptual and/or economic arguments can be made that transaction costs represent a component of the bid-ask spread, we believe that a reporting entity should not bifurcate the bid-ask spread to identify and account for transaction costs within the valuation framework of the fair value standards.

4.6 Restricted Assets

If a reporting entity holds an asset that has restrictions on its sale or transferability (i.e., a restricted asset), the fair value measurement should be adjusted to reflect the discount, if any, a market participant would require as a result of the restriction. The impact of a restriction on the sale or use of an asset depends on whether the restriction would be considered by market participants in pricing the asset.

Case A: *Restriction on the Sale of an Equity Instrument* of ASC 820 (ASC 820-10-55-52 through 55-53) and Example 8: *Restriction on the sale of an equity instrument* of IFRS 13 (IFRS 13.IE28) illustrate a situation in which an entity holds an equity instrument (a financial asset) for which sale is legally or contractually restricted for a specified period. (For example, such a restriction could limit sale to qualifying investors.) The restriction is a characteristic of the instrument and, therefore, would be transferred to market participants. In that case the fair value of the instrument would be measured on the basis of the quoted price for an otherwise identical unrestricted equity instrument of the same issuer that trades in a public market, adjusted to reflect the effect of the restriction. The adjustment would reflect the amount market participants would demand because of the risk relating to the inability to access a public market for the instrument for the specified period. The adjustment will vary depending on all the following:

- a. the nature and duration of the restriction;
- b. the extent to which buyers are limited by the restriction (for example, there might be a large number of qualifying investors); and
- c. qualitative and quantitative factors specific to both the instrument and the issuer.

Also, Case B: *Restriction on the Use of an Asset* of ASC 820 (ASC 820-10-55-54 through 55-55) and Example 9: *Restrictions on the use of an asset* of IFRS 13 (IFRS 13.IE29) illustrate the impact of a contractual restriction on the use of donated land to a not-for-profit organization. In those examples, the not-for-profit organization is perpetually restricted in its use of the property. However, it determines that the contractual restriction exists through an agreement (donor agreement) that is separate and distinct from the asset itself. The restriction would not legally be transferred to market participants if the land were to be sold as it is not part of the deed or legal description of the property. Therefore, this asset restriction is specific to the not-for-profit organization and another owner could use the land for other purposes based on zoning where it is located. In this case, the restriction is not considered in the valuation of the land since the restriction is not an attribute of the asset itself and thus not a relevant input for market participants when determining the fair value of the land.

Chapter 5: Disclosures

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The disclosure requirements included in the fair value standards are intended to provide information about:

- The extent to which a reporting entity measures assets and liabilities at fair value;
- The valuation techniques and inputs used to measure fair value; and
- The effect of fair value measurements on earnings.

The disclosure requirements vary depending on whether the asset or liability is measured on a recurring (at the end of each reporting period) or nonrecurring (in particular circumstances) basis, the classification of the fair value measurement within the fair value hierarchy, and under U.S. GAAP, whether the reporting entity is public or nonpublic.

The fair value standards also encourage reporting entities to combine the fair value measurement disclosures with the fair value disclosures required under other accounting standards (e.g., ASC 825, *Financial Instruments*, IFRS 7, *Financial Instruments: Disclosures*, and IFRS 9), if practicable.

The fair value standards set out minimum requirements and emphasise the reporting entities' responsibility to meet the overall disclosure objectives, which may require additional disclosures. The overall disclosure objectives as defined in ASC 820-10-50-1 and IFRS 13.91 are:

A reporting entity shall disclose information that helps users of its financial statements to assess both of the following:

- a. For assets and liabilities that are measured at fair value on a recurring or nonrecurring basis in the statement of financial position **after initial recognition**, the valuation techniques and inputs used to develop those measurements. Emphasis added.
- b. For recurring fair value measurements using significant unobservable inputs (Level 3), the effect of the measurements on earnings (or changes in net assets) or other comprehensive income for the period.

Additional disclosures may be necessary to meet these objectives. ASC 820-10-50-1A and IFRS 13.92 indicate that a reporting entity should consider the level of detail necessary, the degree of emphasis of each requirement, the degree of aggregation or disaggregation, and whether additional information is needed to evaluate the quantitative disclosures. The fair value standards go on to say that regardless of the specific requirements, "if the disclosures provided ... are insufficient to meet the objectives ..., a reporting entity shall disclose additional information necessary to meet those objectives."

5.1 Disclosures—Public Companies

5.1.1 Main Requirements

There are specific quantitative and qualitative disclosures required for assets and liabilities measured at fair value or for which the fair value is disclosed. These disclosures must be made for each interim and annual period separately for, at a minimum, each class of asset and liability with sufficient detail to permit reconciliation of the disclosures to the line items in the balance sheet. The disclosures are intended

to provide users with information to assess the quality of reported earnings by providing quantitative information about unobservable inputs and assumptions used, a description of the valuation process in place, and a qualitative discussion about the sensitivity of recurring Level 3 fair value measurements.

In summary, ASC 820-10-50-2 through 50-4A and IFRS 13.93 through 13.99 require the following disclosures.

Disclosure Requirement	Related Information
The fair value measurement at the end of the reporting period, and for nonrecurring fair value measurements, the reasons for the measurement	<ul style="list-style-type: none"> • This disclosure is also applicable to assets and liabilities for which fair value is only disclosed (ASC 820-10-50-2E and IFRS 13.97).¹ • See also Question 5-14.
The level that a measurement falls in its entirety within the fair value hierarchy, segregated between Level 1, Level 2 and Level 3 measurements by class of assets or liabilities	<ul style="list-style-type: none"> • Transfers into each level should be disclosed separately from transfers out of each level. • A reporting entity should disclose and consistently follow its policy for determining when transfers between levels are recognised. The policy about the timing of recognising transfers should be the same for transfers in and out of all levels. Examples of policies for determining the timing of transfers include the actual date of the transfers, assuming the transfer occurs at the beginning of the period, or assuming the transfer occurs at the end of the period. • See also Question 5-5.
For recurring fair value measurements of assets and liabilities held at the end of the reporting period, the amounts of any transfers between Level 1 and Level 2, the reasons for the transfers, and the reporting entity's policy for determining when a transfer has occurred ¹	<ul style="list-style-type: none"> • If there has been a change in the valuation technique, that change should be disclosed along with the reason for making it. • This disclosure is also applicable to assets and liabilities for which fair value is only disclosed (ASC 820-10-50-2E and IFRS 13.97).¹
For Level 2 and Level 3 fair value measurements, a description of the valuation technique(s) and the inputs used in determining the fair values of each class of assets or liabilities	<ul style="list-style-type: none"> • This disclosure is also applicable to assets and liabilities for which fair value is only disclosed (ASC 820-10-50-2E and IFRS 13.97).¹

(continued)

Disclosure Requirement**Related Information**

For Level 3 fair value measurements, quantitative information about *all* significant unobservable inputs used in the fair value measurement

- ASC 820-10-55-104 and IFRS 13.IE64 note that “a reporting entity should provide additional information that will help users of its financial statements to evaluate the quantitative information disclosed.” This might include “information about the nature of the item being measured at fair value, including the characteristics of the item being measured that are taken into account in the determination of the relevant inputs.”
- A reporting entity is not required to create quantitative information to comply with this disclosure if quantitative unobservable inputs are not developed by the entity. It can use the “third-party pricing exception” when it uses prices from prior transactions or third-party pricing information without adjustment. This allows the reporting entity to omit the quantitative disclosures about significant unobservable inputs. However, the entity cannot ignore quantitative unobservable inputs that are significant to the fair value measurement and are reasonably available. When a reporting entity uses unobservable inputs it has not developed, it must disclose information to allow users of the financial statements to understand how it has used those inputs in its fair value measurements.
- If a reporting entity uses the net asset value practical expedient under U.S. GAAP and the investment is categorized in Level 3, the entity may also omit this disclosure. In BC 89 of ASU 2011-4, the FASB indicated that this information is not meaningful as the determination of the level is based on the ability to redeem the investment, not on whether the inputs are observable.
- There is no specific exemption in the fair value standards from the qualitative disclosures of sensitivities required by ASC 820-10-50-2(g), **even when the quantitative unobservable input disclosures are not required.**
- See also Questions 5-10 through 5-13.

(continued)

Disclosure Requirement**Related Information**

For recurring Level 3 fair value measurements, a reconciliation of the beginning and ending balances, separately presenting changes during the period attributable to any of the following:

- total gains or losses for the period, separately presenting gains or losses recognised in earnings (or changes in net assets) and gains or losses recognised in other comprehensive income
- a description of where the gains or losses recognised in earnings (or changes in net assets) or recognised in other comprehensive income are reported in the statement of income or in other comprehensive income
- the total amount of gains or losses for the period included in earnings that is attributable to the change in unrealised gains and losses and the line item where those unrealised gains and losses are reported in net income
- purchases, sales, issues, and settlements (each type disclosed separately)
- all transfers in and out of Level 3, the reasons for those transfers, and the reporting entity's policy for determining when a transfer occurs

For Level 3 fair value measurements, a description of the valuation processes used by the reporting entity (including, for example, how an entity decides its valuation policies and procedures and analyzes changes in fair value measurements from period to period)

- Transfers *in* to Level 3 should be disclosed separately from transfers *out* of Level 3.
- See also Questions 5-6 through 5-9 and Example 5-1.

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- ASC 820-10-55-105 requires and IFRS 13.IE65 suggests that a reporting entity expand its disclosure of policies and guidelines, and provide additional information on internal reporting procedures.

(continued)

Disclosure Requirement	Related Information
<p>For recurring Level 3 fair value measurements, a narrative description of the sensitivity of the fair value measurement to changes in unobservable inputs if a change in those inputs to a different amount might result in a significantly higher or lower fair value measurement¹</p> <p><u>IFRS only</u></p> <p>If changing unobservable inputs to reflect reasonably possible alternative assumptions would change the fair values of financial assets and financial liabilities significantly,* disclose that fact, the effect of those changes, and how the effect of the change was calculated</p> <p>*Significance is judged with respect to profit or loss, and total assets or total liabilities, or, when changes in fair value are recognised in other comprehensive income, total equity</p>	<ul style="list-style-type: none"> • See also Question 5-15. • If there are interrelationships between those inputs and other unobservable inputs used in the fair value measurement, an entity should also provide a description of those interrelationships and how they might magnify or mitigate the effect of changes in unobservable inputs on the fair value measurement.
<p>The highest and best use of a nonfinancial asset measured or disclosed at fair value when it differs from its current use, and why</p>	<ul style="list-style-type: none"> • This disclosure is also applicable to assets and liabilities for which fair value is only disclosed (ASC 820-10-50-2E and IFRS 13.97).¹
<p>The accounting policy decision to use the exception applicable to financial assets and liabilities with offsetting positions in market risks or counterparty credit risk, as described in FV 7.5</p>	
<p>For issuers, the existence of an inseparable third-party credit enhancement that is issued with a liability that is measured at fair value</p> <p><u>IFRS only</u></p> <p>And whether the credit enhancement is reflected in the fair value of the liability</p>	<ul style="list-style-type: none"> • The effect of an inseparable third-party credit enhancement that is accounted for separately should not be included by the issuer in the fair value measurement of a liability. • Refer to FV 9.2.1 for a discussion of the measurement of liabilities with inseparable third-party credit enhancements.

¹ Not applicable for nonpublic companies under U.S. GAAP (ASC 820-10-50-2F). Under IFRS, the International Financial Reporting Standard for Small and Medium-Sized Entities ("IFRS for SMEs") addresses the fair value disclosure requirements of entities without public accountability. IFRS for SMEs was issued in July 2009 prior to the issuance of IFRS 13 and contains significantly fewer disclosure requirements than IFRS. IFRS for SMEs is currently being updated.

The fair value standards (ASC 820-10-50-8 and IFRS 13.99) require quantitative disclosures to be presented in a tabular format, except that under IFRS another format may be used if it is more appropriate.

The fair value standards require fair value disclosures by class of assets and liabilities. Reporting entities need to apply judgment to determine the appropriate classes of assets and liabilities and should provide information sufficient to permit reconciliation to the line items presented in the statement of financial position. The fair value standards state that fair value measurements will often require greater disaggregation than the line items in the balance sheet and a reporting entity should determine classes based on the nature, characteristics and risks of the assets and liabilities. The classification of measurements in the fair value hierarchy also affects the level of disaggregation because of the varying degrees of uncertainty and

subjectivity involved in the measurements at each level (i.e., the number of classes may need to be greater for fair value measurements using significant unobservable inputs). Finally, if other standards specify the classes, those may be used if they meet the requirements of the fair value standards. ASC 820-10-55-100 and IFRS 13.IE60 (Example 15) provide an example of disaggregation. See also Question 5-10.

Under U.S. GAAP, for derivative assets and liabilities, all fair value disclosures must be presented on a gross basis except for the roll forward disclosures required by ASC 820-10-50-2(c) through 50-2(d), which may be presented on either a gross or a net basis.

ASC 820-10-55-99 through 55-107 and IFRS 13.IE59 through 13.IE66 (Examples 15 through 19) provide examples of disclosures for assets and liabilities measured at fair value.

5.2 U.S. GAAP-Only Disclosures

As noted in FV 1: Overview and FV 2: Scope, ASC 820 contains a practical expedient under which reporting entities are permitted to use NAV without adjustment as fair value, for investments that meet certain criteria, such as most interests in hedge funds, private equity funds, real estate funds, venture capital funds, offshore fund vehicles, and funds of funds.

In addition to the other disclosure requirements of ASC 820, ASC 820-10-50-6A contains the following disclosures for investments within the scope of ASC 820-10-15-4 through 15-5 (i.e., certain investments for which an NAV is calculated). These disclosures are required for each interim and annual period, regardless of whether the practical expedient to use NAV as fair value is used:

- a. The fair value (as determined by applying paragraphs 820-10-35-59 through 35-62) of the investments in the class at the reporting date, and a description of the significant investment strategies of the investee(s) in the class.
- b. For each class of investment that includes investments that can never be redeemed with the investees, but the reporting entity receives distributions through the liquidation of the underlying assets of the investees, the reporting entity's estimate of the period of time over which the underlying assets are expected to be liquidated by the investees.
- c. The amount of the reporting entity's unfunded commitments related to investments in the class.
- d. A general description of the terms and conditions upon which the investor may redeem investments in the class (for example, quarterly redemption with 60 days' notice).
- e. The circumstances in which an otherwise redeemable investment in the class (or a portion thereof) might not be redeemable (for example, investments subject to a lockup or gate). Also, for those otherwise redeemable investments that are restricted from redemption as of the reporting entity's measurement date, the reporting entity shall disclose its estimate of when the restriction from redemption might lapse. If an estimate cannot be made, the reporting entity shall disclose that fact and how long the restriction has been in effect.
- f. Any other significant restriction on the ability to sell investments in the class at the measurement date.
- g. If a reporting entity determines that it is probable that it will sell an investment(s) for an amount different from net asset value per share (or its equivalent) as

described in paragraph 820-10-35-62, the reporting entity shall disclose the total fair value of all investments that meet the criteria in paragraph 820-10-35-62 and any remaining actions required to complete the sale.

- h. If a group of investments would otherwise meet the criteria in paragraph 820-10-35-62, but the individual investments to be sold have not been identified (for example, if a reporting entity decides to sell 20 percent of its investments in private equity funds but the individual investments to be sold have not been identified), so the investments continue to qualify for the practical expedient in paragraph 820-10-35-59, the reporting entity shall disclose its plans to sell and any remaining actions required to complete the sale(s).

IFRS does not allow the use of NAV as a practical expedient. Therefore, there are no incremental disclosures under IFRS with regard to NAV.

5.3 IFRS-Only Disclosures

As noted in FV 1.4, entities reporting under IFRS recognise a Day 1 gain or loss only when the fair value of the instrument is evidenced by a quoted price in an active market for an identical asset or liability (i.e., a Level 1 input) or based on a valuation technique that uses only data from observable markets. In such cases, IFRS 7.28 indicates that the entity should disclose (1) its accounting policy for recognising in profit or loss the difference between the fair value at initial recognition and the transaction price, and (2) why the entity concluded the transaction price was not the best evidence of fair value, including a description of the evidence that supports the fair value.

5.4 Questions and Interpretive Responses

The following questions and interpretive responses address common issues encountered in applying the disclosure requirements for fair value measurements.

Question 5-1: Are measurements based on fair value subject to the fair value standards' disclosure requirements?

PwC Interpretive Response

Yes. Paragraphs BC 17 of ASU 2011-4 and BC 20 of IFRS 13 indicate the Boards' belief that measurements based on fair value, such as fair value less cost to sell, are subject to both the measurement and disclosure requirements of the fair value standards (with certain exceptions as noted in the standards). One such example under U.S. GAAP is real estate held for sale, which may be carried at fair value less cost to sell, and is a nonrecurring measurement for which disclosures are required.

Question 5-2: Are all fair value disclosures required in interim periods?

PwC Interpretive Response

U.S. GAAP

Yes. ASC 270-10-50-1(k) indicates that when publicly traded companies report summarized financial information at interim dates, all disclosures in ASC 820-10-50-1 through 50-6 are required at a minimum. Further, ASC 270-10-50-1 states "the... information with respect to the current quarter and the current year-to-date or the last 12 months to date should be furnished together with comparable data for the preceding year." Thus, comparative disclosures are required.

IFRS

Yes. IAS 34, *Interim Financial Reporting*, paragraph 16A(j), requires specific fair value disclosures for financial instruments, with reference to particular paragraphs in IFRS 13 and IFRS 7. These specific disclosures are also required for comparative periods, except in the year of adoption. Other fair value disclosures mandated by IFRS 13 are not part of the minimum interim disclosures required by IAS 34.

Question 5-3: Are cash equivalents subject to the fair value measurement disclosure requirements?

PwC Interpretive Response

Many reporting entities classify certain short-term debt and equity securities, such as treasury bills, commercial paper and money market funds, as part of cash equivalents. This classification is consistent with the guidance in ASC 230-10-20 and IAS 7.7. However, these securities may still be subject to the disclosure requirements of ASC 320-10-50, IAS 39 (which will be superseded by IFRS 9, in 2015), IFRS 7, and the fair value standards.

The applicability of the fair value measurement disclosure requirements depends upon how the loans and securities presented as cash equivalents are classified for accounting purposes. The cash equivalents may be carried at amortized cost, either because they are held-to-maturity securities or because they are loans. Such instruments are subject to more limited disclosure requirements in ASC 825 and IFRS 7 for instruments disclosed at fair value but not measured at fair value. Debt and equity securities classified as trading or available-for-sale are subject to the fair value disclosure requirements. The fair value standards indicate that entities should disclose information that helps users of its financial statements assess the valuation techniques and inputs used to develop the fair value measurements.

Given the short maturity of these securities, in most cases there will be no significant difference between amortized cost and fair value. However, past instances in which money market funds “broke the buck” (i.e., the net asset value fell below one dollar) highlight the fact that their carrying value is an approximation of fair value.

Question 5-4: Are the fair value measurements required for disclosure purposes by ASC 825/IFRS 7 subject to the ASC 820/IFRS 13 disclosure requirements?

PwC Interpretive Response

ASC 825 and IFRS 7 require that reporting entities disclose the fair value of all of their financial instruments whether or not recognized on the balance sheet at fair value. Therefore, while certain financial instruments presented on the balance sheet may be recorded on a basis other than fair value, a fair value measurement for that financial instrument is still required to be disclosed, unless carrying value approximates fair value. ASC 825 is within the scope of ASC 820 and IFRS 7 is within the scope of IFRS 13; therefore, the concepts within the fair value standards apply even when measuring fair value for disclosure purposes only.

ASC 825-10-50-2E and IFRS 9.97 include the specific disclosures required for those financial instruments for which fair value is only disclosed. They are noted above in FV 5.1.1.

Question 5-5: What are appropriate policies for reporting transfers in and out of the levels?

PwC Interpretive Response

ASC 820-10-50-2C and IFRS 13.95 provide guidance on reporting transfers in and out of the levels. The standards require reporting entities to disclose and consistently follow a policy for determining when transfers between levels of the fair value hierarchy are deemed to have occurred. The standards also require that the policy about the timing of recognising transfers be the same for transfers into the levels as that for transfers out of the levels. Examples of policies for determining the timing of the transfers include the following:

- a. The date of the event or change in circumstances that caused the transfer.
- b. Assume the transfer occurs at the beginning of the reporting period.
- c. Assume the transfer occurs at the end of the reporting period.

There are practical implications associated with the policy that is chosen regarding the timing of transfers. For example, unrealised and realised gain and loss activity during the period would not be reflected in the Level 3 rollforward for that period if a reporting entity adopted an end-of-period convention for transfers in.

An example of such an implication can be demonstrated with mortgage-backed securities during the economic downturn experienced in the third quarter of 2008. Under an end-of-period convention, unrealised losses from those securities would not have been reflected in the third quarter 2008 rollforward table if the losses related to investments that were classified in the Level 2 category at the beginning of the quarter.

However, as a practical matter, some reporting entities may have formal procedures for assessing the level in the hierarchy only at the end of an external reporting period (i.e., at the end of each quarter) and thus assuming end-of-period transfers in and out would be operationally efficient.

A reporting entity's policy choice with respect to the timing of transfers in and out of the levels will also impact the relationship between the year-to-date disclosures and quarter disclosures. Use of end-of-period or beginning-of-period methods generally will result in the quarterly information not summing to the year-to-date totals because the beginning and ending dates for timing of a transfer will be different in a year to date disclosure than in a quarterly disclosure.

Question 5-6: Should a reporting entity include activity related to instruments that were both purchased and sold or both transferred in and out of the Level 3 category during a single reporting period in the Level 3 rollforward disclosure?

PwC Interpretive Response

A reporting entity may exclude the activity from the Level 3 rollforward disclosure if the instruments were not in Level 3 at either the beginning or end of the reporting period. This would be the case if an instrument was both purchased and sold or both transferred in and out during the same period and thus was not a Level 3 security at either the beginning or end of the reporting period.

Question 5-7: How should a reporting entity calculate unrealised gains and losses for an interest bearing security held at period end for purposes of the Level 3 rollforward?

PwC Interpretive Response

There are several acceptable methods for determining unrealised gains/losses for items still held at the reporting date:

- *Method A*—“Balance Sheet View:” Determine unrealised gains and losses as the fair value of the security less its amortized cost basis. This view holds that gains and losses are realised at maturity or sale date; thus the entire gain/loss is considered unrealised until maturity.
- *Method B*—“Income Statement View:” Determine unrealised gains and losses as the total gains and losses during the period less the cash received or paid for those items. This view holds that each cash receipt or settlement represents a realised gain or loss in its entirety.
- *Method C*—First determine any realised gains or losses as the difference between the beginning-of-the-period expected cash flows and actual cash flows for the period. Then, determine unrealised gains or losses for items still held at the reporting date as the remaining expected cash flows for future periods at the end of the period less the remaining expected cash flows for future periods at the beginning of the period.

The fair value standards do not specify a particular method. As a result, we consider all views to be acceptable. However, reporting entities should select a method, disclose which method is used, and apply it consistently.

Question 5-8: Are impairment (other-than-temporary impairment (OTTI) under U.S. GAAP and significant or prolonged declines in fair value under IFRS) losses considered realised or unrealised in the Level 3 rollforward?

PwC Interpretive Response

The fair value standards require disclosure of recognised gains and losses and unrealised gains and losses related to assets and liabilities held at the balance sheet date in the Level 3 rollforward.

We believe there are two acceptable methods to preparing the Level 3 rollforward information for fair value adjustments to securities for which there has been an other-than-temporary impairment, or a significant or prolonged decline in value:

- *Method A*—Present OTTI losses and significant declines in value as “realized” in the Level 3 rollforward table. This view is supported by the guidance in ASC 320, which describes the nature of OTTI losses as “realized,” and IAS 39.61, which indicates that recognition of an impairment loss is required when “a significant or prolonged decline in the fair value of an investment in an equity instrument below its cost” has occurred.
- *Method B*—Present OTTI losses and significant declines in value as “unrealised” in the Level 3 rollforward table. The overall objective of the Level 3 rollforward disclosures is to present the income statement impact of Level 3 fair value measurements that have not been verified with an observable transaction (i.e., a sale in the marketplace). Proponents of this view point to the fact that recognition of an OTTI or significant decline in value is not an observable or realised transaction.

Although we consider either view to be acceptable, the method selected should be applied consistently.

Question 5-9: What disclosures are required for assets and liabilities held at the end of the reporting period for items transferred either into or out of Level 3 during the period?

PwC Interpretive Response

In addition to the Level 3 rollforward table, ASC 820-10-50-2(d) and IFRS 13.93(f) require disclosure of:

- the amount of unrealised gains or losses in the rollforward table included in earnings that is attributable to the change in unrealised gains or losses relating to those assets and liabilities held at the end of the reporting period, and
- the line item(s) in the income statement in which those unrealised gains or losses are recognised.

The amount disclosed as the unrealised gain/loss relating to assets and liabilities held at the end of the reporting period should be consistent with the company's policy for the timing of transfers of securities into and out of Level 3 (e.g., beginning of the period or end of the period) and consistent with the amount of total gains and losses included in the Level 3 rollforward table for that period. This is because the unrealised gain/loss should only be included for the period in which the instrument was Level 3.

Example 5-1: Unrealised Gains or Losses in the Rollforward Table Included in Earnings Attributable to the Change in Unrealised Gains or Losses Relating to the Assets and Liabilities Held at the End of the Reporting Period (ASC 820-10-50-2(d) and IFRS 13.93(f))

A company has disclosed an accounting policy that for purposes of the required Level 3 rollforward activity, all transfers into and out of Level 3 are deemed to occur at the beginning of the period (the first day of the first month of each quarter).

[Another convention that companies may use is to deem transfers as occurring at the beginning of the cumulative reporting period (for example, for a calendar year-end company, April 1 for the second quarter ended June 30, and January 1 for the year-to-date six months ended June 30), which would result in different disclosures than those shown here. The convention utilized should be disclosed and consistently applied.]

What amounts would be included in the disclosure for the quarter and year-to-date periods for items transferred *into and out of* Level 3 during the quarter?

The value of Investment A, a trading security, changes during the six-month period as follows:

Transfer into Level 3

Investment A is classified as Level 2 at 1/1/20x1 and 3/31/20x1. Investment A transfers into a Level 3 measurement in the second quarter ending 6/30/20x1 and is classified as Level 3 at that date.

(continued)

The rollforward table required to be disclosed would be as follows:

The disclosure should also include the line item in the income statement in which the unrealised loss is recognised.

Note on Transfer *in*: Because the investment transferred into Level 3 during the quarter, and all transfers are deemed to occur at the beginning of the quarter, the unrealised loss while classified as a Level 3 investment is only (\$10), as opposed to the cumulative year-to-date unrealised loss of (\$15).

Transfer out of Level 3

Assume instead that Investment A is classified as Level 3 at 1/1/20x1 and 3/31/20x1. Investment A transfers out of a Level 3 measurement in the quarter ending 6/30/20x1 and is classified as Level 2 at that date.

The rollforward table required to be disclosed would be as follows:

The disclosure should also include the line item in the income statement in which the unrealised loss is recognised.

Note on Transfer *out*: Even though Investment A is no longer classified as Level 3 as of 6/30/20x1, disclosure of the unrealised loss that was included in the total gain or loss amount in the Level 3 rollforward table during the 6 months ended 6/30/20x1 (\$5) is still required for the year-to-date disclosures, in accordance with ASC 820-10-50-2(d) and IFRS 13.93(f). However, since Investment A was transferred out of the Level 3 measurement at the beginning of the second quarter, the (\$10) unrealised loss that occurred in the second quarter was not part of the total gains and losses amount in the rollforward table for the second quarter. Therefore, the required unrealised loss disclosure amount in accordance with ASC 820-10-50-2(d) and IFRS 13.93(f) is zero for Investment A for the *quarter* ended 6/30/20x1.

Question 5-10: What level of disaggregation is required for the quantitative disclosures relating to significant unobservable inputs?

PwC Interpretive Response

It depends. The guidance requires entities to provide, at a minimum, fair value disclosures for each class of assets and liabilities. The fair value standards do not prescribe the level of disaggregation (below the class level of assets and liabilities) required for the quantitative disclosures relating to significant unobservable inputs. However, the disclosure should contain sufficient detail to allow users to understand the unobservable inputs used and how those inputs vary over time.

When considering how detailed the disclosure should be, a reasonable starting point is to evaluate the classes for each of the assets and liabilities being included in other fair value disclosures (e.g., the fair value hierarchy table), followed by consideration of the nature and risk of the types of assets and liabilities and inputs in each class. The objective of this exercise is to determine whether there are reasonable levels of homogenous pools of inputs for the Level 3 assets and liabilities that can be separated out of the related class. ASC 820-10-50-2B and IFRS 13.94 provide guidance on the determination of classes of assets and liabilities, which includes the consideration of the nature, characteristics, and risks of the asset or liability and the level of the fair value hierarchy within which the fair value measurement is categorized.

In some cases, it may be appropriate to limit the disaggregation of the disclosure to the class level. However, to meet the objective of the quantitative disclosure, reporting entities may need to further disaggregate to provide more meaningful information about the significant unobservable inputs used and how these inputs vary over time.

For example, an entity's derivative assets and liabilities may be disaggregated at the class level (e.g., interest rate instruments, commodity instruments, and foreign exchange rate instruments). However, an entity's commodity instruments may comprise a number of different types of commodities that do not share similar risk characteristics. An entity may conclude that disaggregating its class of commodity derivatives by type of commodity would provide more meaningful information.

Similarly, it may be appropriate when considering a product, such as mortgage-backed securities, to further disaggregate the disclosure by residential and commercial securities. For private equity securities held, it may be appropriate to disaggregate by industry.

Entities should balance the level of disaggregation against the usefulness of the disclosure. For example, while it may at times be difficult to develop a disaggregated disclosure due to the existence of a number of pools of homogeneous risks, that should not preclude the entity from developing and disclosing such disaggregated information. Conversely, an entity should consider whether it has provided too much disaggregated information such that the disclosure becomes cumbersome and less meaningful.

When there is a wide range of values for the significant unobservable inputs, we believe it is a best practice to include the weighted average, or some other measure of the distribution, and to disclose the way in which it is calculated, because such a measure will de-emphasise the impact of outliers. Assuming like portfolios, inclusion of weighted averages will aid in comparing companies.

Question 5-11: Level 3 fair value measurements may contain a number of unobservable inputs. Such unobservable inputs may be developed using a variety of assumptions and “underlying” unobservable inputs (e.g., a number of assumptions are used to arrive at a long-term growth rate input). Are underlying inputs used to develop significant unobservable inputs required to be included in the quantitative disclosures?

PwC Interpretive Response

Generally no. We would not expect underlying assumptions regarding the unobservable inputs (“inputs to inputs”) to be included in this disclosure. Most inputs in general include underlying assumptions; the disclosure of these underlying assumptions could result in a significant amount of extraneous information being disclosed, and could add unnecessary complexity to the disclosure. As a result, the overall disclosure could become less understandable. We therefore believe inclusion of such information is beyond the scope of the disclosure requirement.

In addition, the example in ASC 820-10-55-103 and IFRS 13.IE63 includes disclosure of inputs such as weighted average cost of capital, long-term revenue growth rate, and long-term pretax operating margin. These unobservable inputs are based on a variety of assumptions that are also by their nature considered inputs. For example, a weighted average cost of capital input may include a number of assumptions such as the risk-free rate, effective tax rate, required equity rate of return, and the proportion of debt versus equity. These underlying inputs are not included in the example disclosure.

Question 5-12: When can the third-party pricing exception to the quantitative disclosures about significant unobservable inputs be used?

PwC Interpretive Response

It depends.

ASC 820-10-35-54K and IFRS 13.B45 indicate that the use of quoted prices provided by third parties, such as pricing services or brokers, is permitted if the entity has determined that the quoted prices provided by those parties are developed in accordance with the fair value guidance.

ASC 820-10-50-2(bbb) and IFRS 13.93(d) allow a reporting entity to use the “third-party pricing exception” to omit certain quantitative disclosures about the inputs not developed by the reporting entity (e.g., prices from prior transactions or obtained from third-party pricing sources).

It should be noted that under U.S. GAAP, the qualitative sensitivity disclosures for such inputs must be provided if required by ASC 820-10-50-2(g) and under IFRS, qualitative and quantitative disclosures for such inputs must be provided if required by IFRS 13.93(h)(i) and 93(h)(ii), respectively. This is true even if the exception for the quantitative disclosure in ASC 820-10-50-2(bbb) and IFRS 13.93(d) is elected.

If a reporting entity measures fair value using unadjusted prices from prior transactions or third-party pricing information, those inputs may qualify for the exception. However, reporting entities should not ignore quantitative unobservable inputs that are significant to the fair value measurement and that are reasonably available to the entity. Therefore, when a reporting entity is contemplating use of this exception, we would expect it to make a reasonable attempt at obtaining quantitative information from the third party about unobservable inputs being used.

If an entity adjusts the price obtained from a prior transaction or a third party in developing its fair value measurement, then this exception should not be used for that input. Consequently, any adjustments to a third-party price would require the entity to provide quantitative information about such adjustments to the extent they are significant. For example, if a reporting entity estimates its fair value measurement based on 50 percent internally-developed inputs and 50 percent from unadjusted third-party pricing, the quantitative information would be required for the internally-developed inputs, if significant, as this represents the adjustment to the third-party price.

However, if an entity uses an internal model, but adjusts the result to equal the third-party price, then the third-party price would qualify for this exception. In that case, the reporting entity is essentially using a third-party price and developing a model only for purposes of validating the price. Under ASC 820-10-55-104(b) and IFRS 13.IE64(b), entities that use third-party pricing for their fair value measurements should also consider whether it is appropriate to disclose how third-party information such as broker quotes, pricing services, net asset values, and relevant market data were considered in the measurement of fair value.

Management should evaluate whether it has performed sufficient diligence over the fair value measurements and inputs obtained externally, including the related fair value hierarchy level determinations.

Additionally, management of SEC registrants (both entities reporting under U.S. GAAP and foreign private issuers reporting under IFRS) should be cognizant

of the SEC's ongoing scrutiny of entities' use of broker quotes and third-party pricing services when measuring fair value. The SEC expects management to take responsibility for its fair value measurements, even when not developed by the entity.

All companies should provide sufficiently robust disclosures when using third party pricing services in the development of fair value measurements. Specifically, disclosures would include:

- how and the extent to which the reporting entity uses brokers and pricing services for its fair value measurements;
- the nature and amount of assets valued using brokers or pricing services;
- classification of the assets and liabilities in the fair value hierarchy;
- information on the use of multiple broker quotes;
- the reasoning and methodology for any adjustments made to prices from brokers or pricing services;
- the extent to which the brokers are using observable market information as compared to proprietary models and unobservable data;
- whether the quotes are binding; and
- procedures performed to validate the fair value measurements.

Question 5-13: How should derivative assets and liabilities and their related unobservable inputs be presented in the quantitative table about unobservable inputs?

PwC Interpretive Response

It depends. We believe, similar to the fair value hierarchy table disclosure, derivative assets and liabilities should be presented on a gross basis in the quantitative disclosure of unobservable inputs.

Any unobservable inputs that are applied to the gross positions (e.g., volatility adjustments for options) should be classified with the corresponding derivative asset or liability on a gross basis. Unobservable inputs applied to a net derivative position (such as when it meets the requirements for netting on the balance sheet or is a net position under the "portfolio exception") should be classified and disclosed in the quantitative table with the derivative assets and/or liabilities impacted by the input consistent with how they are classified in other financial statement presentations or disclosures (e.g., balance sheet presentation or fair value hierarchy table).

Question 5-14: The fair value standards require disclosure of the level of the fair value hierarchy in which recurring and nonrecurring fair value measurements are categorised in their entirety (i.e., Level 1, 2, or 3) for each class of assets and liabilities that are not measured at fair value in the statement of financial position, but for which fair value is disclosed. Is disclosure of the level in the fair value hierarchy required for assets and liabilities for which fair value is only disclosed, when their carrying values approximate fair value?

PwC Interpretive Response

Generally yes under U.S. GAAP, but no under IFRS. In accordance with ASC 825 and IFRS 7, entities are required to disclose the fair value of financial assets and liabilities

that are not measured at fair value on the balance sheet but for which fair value is disclosed.

Under U.S. GAAP, ASC 825-10-50-14 provides an exception to the fair value disclosures for trade receivables and trade payables with carrying values that approximate fair value. Because these instruments are scoped out of the fair value disclosure requirement, reporting entities are not required to provide fair value hierarchy information. We do not believe this exception to the disclosure should be extended to other financial assets or financial liabilities, as this guidance is specific to trade receivables and trade payables.

Under IFRS 7.29(a), the exception to the fair value disclosures is more broadly applicable. It extends to all instances “when the carrying amount is a reasonable approximation of fair value” and uses short-term trade receivables and payables as an example of one such instance. However, we believe it is a best practice to state that the carrying value approximates fair value, even though it isn’t required by the guidance.

In general, management should carefully evaluate a conclusion that the fair value of its trade receivables or trade payables approximates carrying value. While that will often be the case, management should consider the nature, risk, and terms of the trade receivable or payable. For example, the fair value of structured or long-term trade receivables and payables may not approximate their carrying amounts. In such cases, a reporting entity would be required to disclose the fair value of the related trade receivable or payable along with the level in the fair value hierarchy.

In addition to the quantitative disclosures, the fair value standards require certain qualitative disclosures relating to fair value measurements. These disclosure requirements include (1) a description of the valuation process in place for both recurring and nonrecurring Level 3 fair value measurements and (2) a qualitative discussion about sensitive inputs used in recurring Level 3 fair value measurements. These fair value disclosures for instruments not measured at fair value, but only disclosed at fair value, are not required for nonpublic companies under U.S. GAAP.

Question 5-15: What level of disaggregation is required for the qualitative disclosure about sensitivity of significant unobservable inputs?

PwC Interpretive Response

It depends. The disclosure should include, at a minimum, discussion of the unobservable inputs included in the quantitative table. ASU 820-10-50-2(g) and IFRS 13.93(h)(i) require a narrative disclosure about the sensitivity of recurring Level 3 fair value measurements to certain changes in unobservable inputs. This guidance requires the potential effect of changes in unobservable inputs to be described if such changes might result in a significantly different fair value measurement. Furthermore, to the extent there are interrelationships between those inputs and other unobservable inputs used in the fair value measurement, such interrelationships and the potential impact on sensitivity should also be disclosed. ASC 820-10-55-106 and IFRS 13.IE66 (Example 19) provide an example disclosure for entities to consider when developing this qualitative disclosure.

Under U.S. GAAP, the guidance does not require a quantitative disclosure about sensitivity; therefore, entities are not required to provide specific amounts or quantify the potential changes in the inputs or the fair value measurements in order to comply with the guidance.

IFRS 13.93(h)(ii) requires quantitative disclosure about the sensitivity of recurring Level 3 fair value measurements to certain changes in unobservable inputs if changing one or more of the unobservable inputs to reflect reasonably possible alternative assumptions would change fair value significantly.

Question 5-16: Under IFRS, upon recognition of an impairment of a financial asset previously measured at amortised cost, the asset is remeasured using an observable market price, as discussed in IAS 39.AG84. Does this mean that fair value disclosures are required for the asset under IFRS 13?

PwC Interpretive Response

We believe that based on the text of IAS 39, it is reasonable to conclude that the instrument is still considered to be at amortised cost. Therefore, no additional disclosure is necessary.

Question 5-17: Do the fair value standards' disclosure requirements apply to a hedged item that is otherwise reported at fair value or has been hedged from inception for changes in its overall fair value such that it is essentially measured at its full fair value?

PwC Interpretive Response

Application of the disclosure requirements of the fair value standards requires a level of judgment. For a hedged item that is otherwise reported at fair value or has been hedged from inception for changes in its overall fair value such that it is essentially measured at its full fair value, we believe it would be appropriate to apply the disclosure requirements of ASC 820-10-50-1 through 50-3 and IFRS 13.93 through 13.99.

For a hedged item reported on a measurement basis other than fair value, we do not believe the partial measurement of fair value achieved through the adjustments of carrying value require the reporting entity to provide the required disclosures of the fair value standards for the hedged item as a whole or for the adjustments to the carrying value separately. However, to provide transparency and consistent disclosure for all significant measurements that involve fair value, management should consider including these instruments in the fair value standards' disclosures.

Question 5-18: Do the fair value disclosures apply to pension plan assets in the financial statements of the plan sponsor?

PwC Interpretive Response

No, but certain similar disclosures may be required under other guidance in U.S. GAAP.

U.S. GAAP

Under ASC 820-10-50-10, plan assets of a defined benefit pension or other postretirement plan that are accounted for in accordance with ASC 715, *Compensation—Retirement Benefits*, are not subject to the disclosure requirements in the amended guidance. However, these assets are subject to the disclosures required by ASC 715-20-50-1(d)(iv) for public entities and 715-20-50-5(c)(iv) for nonpublic entities. This guidance requires, among other items, disclosures about the level within the fair value hierarchy in which the fair value measurements fall, a

reconciliation for fair value measurements of plan assets categorized as Level 3, and information about the valuation techniques and inputs used and any changes in techniques and inputs.

ASU 2013-09, *Deferral of the Effective Date of Certain Disclosures for Nonpublic Employee Benefit Plans in Update No. 2011-4*, issued in July 2013, provided nonpublic employee benefit plans an indefinite deferral of the quantitative disclosures required by ASC 820-10-50-2(bbb) for investments held by a nonpublic employee benefit plan in its plan sponsor's or affiliate's own nonpublic entity equity securities.

IFRS

IFRS 13.7 indicates that its fair value disclosures are not required for plan assets measured at fair value under IAS 19, *Employee Benefits*, and retirement benefit plan investments measured at fair value under IAS 26, *Accounting and Reporting by Retirement Benefit Plans*. However, these assets are subject to the disclosures required by IAS 19. This guidance requires certain disclosures with regard to the fair value of plan assets, e.g., a disaggregation of the fair value of the plan assets into classes that distinguish the nature and risks of those assets, subdividing each class of the plan asset into those that have a quoted market price in an active market (as defined in IFRS 13) and those that do not.

Question 5-19: Should the financial statements of pension plans under U.S. GAAP apply the public or nonpublic fair value disclosure requirements?

PwC Interpretive Response

It depends. In order to determine which fair value disclosures a pension plan should include in its financial statements, the plan must first determine whether it is a public or nonpublic entity.

As noted in the table in FV 5.1.1, certain of the new fair value disclosures are not required for nonpublic entities, including (1) information about transfers between Level 1 and Level 2 of the fair value hierarchy, (2) information about the sensitivity of a fair value measurement categorized within Level 3 to changes in unobservable inputs and any interrelationships between those unobservable inputs, and (3) the categorization by level of the fair value hierarchy for items not measured at fair value in the statement of financial position but for which the fair value is required to be disclosed.

The guidance in ASC 820-10-50-2F refers to the first definition of a “nonpublic entity” within the Master Glossary of the FASB Codification. Under that definition, a nonpublic entity is an entity that does not meet any of the following conditions:

- a. Its debt or equity securities trade in a public market either on a stock exchange (domestic or foreign) or in an over-the-counter market, including securities quoted only locally or regionally.
- b. It is a conduit bond obligor for *conduit debt securities* that are traded in a public market (a domestic or foreign stock exchange or an over the counter market, including local or regional markets).
- c. It files with a regulatory agency in preparation for the sale of any class of debt or equity securities in a public market.

- d. It is required to file or furnish financial statements with the Securities and Exchange Commission.
- e. It is controlled by an entity covered by criteria (a) through (d).

Based on the nature and activities of pension plans, criteria (a) through (c) will generally not apply to these entities. As it relates to criterion (d), if the financial statements of the pension plan are filed with the SEC in a Form 11-K or similar filing, then the pension plan would not qualify as a nonpublic entity. Such pension plans would be required to provide all the required disclosures.

If criterion (d) is not met, management would need to evaluate criterion (e) above to determine if the pension fund is controlled by an entity covered by criteria (a) through (d) (essentially, whether it is controlled by a public entity). If management concludes that the pension plan is controlled by a public entity, the pension plan would need to provide all the disclosures required by the ASU.

Question 5-20: Do the fair value standards' disclosure requirements apply to the fair values determined for acquisition accounting under ASC 805 and IFRS 3?

PwC Interpretive Response

No. The fair value disclosures are not required upon initial recognition of fair value in a business combination as ASC 820-10-50-1 indicates that disclosures are required for assets and liabilities measured at fair value "after initial recognition." However, assets and liabilities measured at fair value after the initial valuation will be subject to the fair value disclosure requirements. See also FV 8.4.

Question 5-21: Do the fair value standards' disclosure requirements apply to goodwill and indefinite-lived intangibles?

PwC Interpretive Response

Under U.S. GAAP, while goodwill and indefinite-lived intangibles are not remeasured at fair value on a recurring basis, the impairment models for goodwill and indefinite-lived intangible assets are fair value-based assessment models. Under IFRS, an entity tests impairment using the higher of fair value less costs of disposal and value in use. Consistent with the guidance included in ASC 350, there is no requirement to disclose information about the fair value used in the impairment test, unless an impairment loss is recognised. IAS 36 requires disclosures when fair value is used to value a CGU, even if there is no impairment.

In the period in which an impairment of goodwill or indefinite-lived intangible assets is recognised in the financial statements, the disclosure requirements in ASC 820-10-50-1 through 50-3 and IAS 36 should be followed. From a U.S. GAAP perspective, this information will supplement the required disclosures in ASC 350 about the basis for determination of fair value in the event an impairment loss is recognised.

Question 5-22: What are the fair value disclosure requirements for a long-lived asset to be disposed of by sale?

PwC Interpretive Response

An adjustment to assets held for sale to reflect fair value less costs of disposal is recognised on a non-recurring basis. Such adjustments are recognized only in periods in which the fair value does not exceed the carrying value at the date the decision to sell was made. Therefore, the disclosure requirements of ASC 820-10-50-1 through 50-3 and IFRS 13.91-97 will apply each time the recorded amount of the long-lived assets held for sale is adjusted.

Question 5-23: What are the ASC 820 disclosure requirements for asset retirement obligations (AROs)?

PwC Interpretive Response

An ARO is initially measured at fair value and is subsequently accreted through earnings. A change to the timing or amount of undiscounted cash flows expected to be paid to retire the asset after initial measurement creates a change in estimate event for the ARO.

AROs are initially recognised at fair value when a reasonable estimate of fair value can be made. The initial measurement of an ARO is subject to the measurement requirements of ASC 820. Subsequent adjustments to the original liability do not represent a fair value measurement; thus, they are not subject to the disclosures of ASC 820.

The disclosures required by ASC 410-20-50-1 are similar to those required by ASC 820. In addition, a reporting entity is not precluded from providing supplemental disclosures consistent with the requirements of ASC 820 if it believes such disclosures will be useful to users of the financial statements.

Under IFRS, decommissioning costs are nonfinancial liabilities that fall in scope of IAS 37, *Provisions*. The measurement basis in IAS 37 is not fair value and so is not in the scope of IFRS 13.

Question 5-24: Are costs associated with exit or disposal activities subject to the fair value disclosures?

PwC Interpretive Response

In accordance with ASC 420, the amount recognised for costs related to exit and disposal activities should be measured initially at fair value using the ASC 820 framework. The subsequent measurement of the liability is not at fair value. As such, the disclosure requirements of ASC 820 are not applicable as ASC 820-10-50-1 indicates that disclosures are required for assets and liabilities measured at fair value “after initial recognition.”

Under IFRS, there is no specific fair value measurement or disclosure requirement related to exit or disposal cost activities.

Question 5-25: Are comparative disclosures required in the first year of adoption of the fair value standards?

PwC Interpretive Response

No. Entities are to apply the fair value standards prospectively. Because the new guidance is prospective, we do not believe that comparative disclosures for prior years are required in the year of adoption under either U.S. GAAP or IFRS. IFRS 13 specifically states that its disclosure requirements are not required to be applied in comparative form for periods prior to the adoption of the standard. Under U.S. GAAP, while not explicitly stated in ASU 2011-4, we believe this is consistent with the FASB's intention.

Additionally, because application is prospective, any changes in fair value measurements resulting from the application of the new guidance are to be recorded as a change in estimate through the income statement in the first period of application. However, in the period of adoption, a reporting entity had to disclose the change, if any, in the valuation techniques applied and related inputs resulting from the application of the new guidance and quantify the total effect, if practicable.

Chapter 6: Fair Value Option

Chapter 6: Fair Value Option

U.S. GAAP and IFRS provide reporting entities with an option to measure many financial instruments and other items in the balance sheet at fair value. The fair value option (FVO) provided by U.S. GAAP and IFRS considerably expands the ability of a reporting entity to select the basis of measurement for certain assets and liabilities.

Under U.S. GAAP, the key standards that have a FVO include:

ASC 815-15, *Derivatives and Hedging—Embedded Derivatives*, which provides a FVO for certain hybrid financial instruments that contain an embedded derivative that would otherwise require separation.

- ASC 860-50, *Transfers and Servicing—Servicing Assets and Liabilities*, which permits a reporting entity to choose between the amortization method and the fair value measurement method for each class of separately recognised servicing assets and servicing liabilities.
- ASC 825-10, *Financial Instruments—Overall*, which provides a measurement basis election for most financial instruments (i.e., either historical cost or fair value), allowing reporting entities to mitigate potential mismatches that arise under the current mixed measurement attribute model. For example, potential differences may arise because certain financial assets are required to be measured at fair value but the related financial liabilities are required to be measured at amortized historical cost.

As a result, entities can avoid application of the complex hedge accounting provisions of ASC 815 by electing the FVO for a hedged item that qualifies for the FVO, which results in offsetting income statement impacts for the changes in the fair values of a derivative instrument and the related hedged item.

In accordance with the requirements of ASC 815-15, ASC 860-50, and ASC 825-10, once the FVO election for a specific instrument is made, it is irrevocable for that instrument. Because the FVO is not a requirement, its election may result in reduced comparability of financial reporting, both among similar reporting entities and within a single entity, because similar assets or liabilities could be reported under different measurement attributes (i.e., some at historical cost and some at fair value). However, the disclosure provisions in those topics are intended to mitigate this by requiring (1) identification of instruments for which the option is elected and (2) extensive information about the effects on the financial statements.

Under IFRS, the key standards that provide a FVO include:

- IAS 28, *Investments in associates and joint ventures*, which permits a venture capital organisation, mutual fund, unit trust and similar entities, including investment-linked insurance funds, to measure investments in associates and joint ventures at fair value through profit or loss in accordance with IFRS 9.
- IAS 16, *Property, plant and equipment*, which permits a reporting entity to choose either the cost model or the revaluation model as its accounting policy after initial recognition.
- IAS 38, *Intangible assets*, which permits a reporting entity to choose either the cost model or the revaluation model as its accounting policy after initial recognition when an active market exists for an intangible asset.

- IAS 39, which permits the FVO for a financial asset or financial liability (or a group of financial assets, financial liabilities, or both) on initial recognition, with changes in fair value recognised in profit or loss if certain criteria are met.
- IAS 40, *Investment property*, which permits an entity to choose as its accounting policy either the fair value model or the cost model.
- IFRS 3, *Business combinations*, which provides the acquirer with the option to measure a noncontrolling interest (NCI) in an acquiree at either fair value or the present ownership instruments' proportionate share in the recognised amounts of the acquiree's net identifiable assets.

This chapter discusses overall concepts regarding election of the fair value option. In addition, see discussion of application of the fair value option to specific areas in FV 7: Application to Financial Assets and Financial Liabilities.

6.1 Scope

6.1.1 U.S. GAAP Scope

ASC 825-10-15-4 states:

All entities may elect the fair value option for any of the following eligible items:

- a. A recognized **financial asset** and **financial liability**, except any listed in the following paragraph
- b. A **firm commitment** that would otherwise not be recognized at inception and that involves only financial instruments (for example, a forward purchase contract for a loan that is not readily convertible to cash—that commitment involves only financial instruments—a loan and cash—and would not otherwise be recognized because it is not a derivative instrument)
- c. A written loan commitment
- d. The rights and obligations under an insurance contract that has both of the following characteristics:
 1. The insurance contract is not a **financial instrument** (because it requires or permits the insurer to provide goods or services rather than a cash settlement).
 2. The insurance contract's terms permit the insurer to settle by paying a third party to provide those goods or services.
- e. The rights and obligations under a warranty that has both of the following characteristics:
 1. The warranty is not a financial instrument (because it requires or permits the warrantor to provide goods or services rather than a cash settlement).
 2. The warranty's terms permit the warrantor to settle by paying a third party to provide those goods or services.
- f. A host financial instrument resulting from the separation of an embedded nonfinancial derivative instrument from a nonfinancial hybrid instrument under paragraph 815-15-25-1, subject to the scope exceptions in the following paragraph (for example, an instrument in which the value of the bifurcated

embedded derivative is payable in cash, services, or merchandise but the debt host is payable only in cash)

Under ASC 825-10-15-5, the following items are explicitly excluded from the scope of ASC 825:

- a. An investment in a subsidiary that the entity is required to consolidate.
- b. An interest in a variable interest entity (VIE) that the entity is required to consolidate.
- c. Employers' and plans' obligations (or assets representing net overfunded positions) for pension benefits, other postretirement benefits (including health care and life insurance benefits), postemployment benefits, employee stock options and stock purchase plans, and other forms of deferred compensation arrangements, as defined in Topics 420; 710; 712; 715; 718; and 960.
- d. Financial assets and liabilities recognized under leases, as defined in Subtopic 840-10. (This exception does not apply to a guarantee of a third-party lease obligation or a contingent obligation arising from a cancelled lease.)
- e. Deposit liabilities, withdrawable on demand, of banks, savings and loan associations, credit unions, and other similar depository institutions.
- f. Financial instruments that are, in whole or in part, classified by the issuer as a component of shareholder's equity (including temporary equity) (for example a convertible debt security with a non-contingent beneficial conversion feature).

The items above are generally excluded from the FVO election because the accounting for these items is already addressed by specific accounting pronouncements, and the FASB concluded that the appropriate time for debating the measurement attribute for such items is during any reconsideration of those specific accounting pronouncements.

PwC Observation: Some insurance and investment contracts include features that permit the insured (or the investor) to withdraw (i.e., "demand") amounts specified in the contract; therefore, a question arises as to whether such contracts are subject to the exclusion applicable to demand deposit liabilities as discussed above. We believe the investor is eligible to elect the FVO for these contracts because the scope exception is limited to demand-deposit liabilities of specified financial institutions. However, the valuation of such insurance contracts would need to reflect the impact of the right of the insured/investor to withdraw.

Question 6-1: Does the presence of a service element embedded in a financial instrument or an otherwise eligible insurance contract prevent the election of the ASC 825-10 fair value option?

PwC Interpretive Response

ASC 825-10-15-4 allows the fair value election for financial instruments, including insurance contracts that meet the definition of a financial instrument. The fair value election is also available for insurance contracts that are not financial instruments (because they require or permit the insurer to provide goods or services rather than a cash settlement), if the insurance contract's contractual terms permit the insurer to settle by paying a third party to provide those goods or services.

The fair value option is not available for service contracts. In some cases, an item otherwise eligible for the fair value option may contain a significant service component. The SEC and FASB staffs have indicated that a general partnership interest, which is a financial instrument, is not eligible for the fair value option if there is a significant service component. We believe this should apply to any financial instrument that is otherwise eligible for the fair value option, including an insurance contract. Therefore, an entity should carefully evaluate whether the service component embedded within an otherwise eligible asset or liability is significant to determine whether the item is eligible for the fair value option.

The determination of what constitutes a significant service component must be made in light of the particular instrument in question. Many financial instruments include implicit or explicit servicing components that are an inherent part of the instrument but would typically not be considered significant. For example, a bank may initiate a loan and charge an 8 percent interest rate, 1 percent of which implicitly covers the cost to service the loan. Similarly, an insurance company may issue a variable annuity contract with an explicit fee that in part is meant to cover the costs incurred by the insurer to manage the investments purchased with the policyholder's deposit premium. If these fees are not significant at inception and are not expected to be significant in the future in comparison to the fair value of the instrument and are comparable to a typical fee charged for such an instrument, election of the fair value option would not be precluded.

Question 6-2: Is convertible debt with attached warrants and a non-contingent beneficial conversion feature eligible for application of the fair value option?

PwC Interpretive Response

On one hand, ASC 815-15 allows a company that is required to separate a derivative from a hybrid financial instrument (i.e., convertible debt) to make an irrevocable election at the beginning of the contract to fair value the entire instrument. However, ASC 815-15 does not discuss this election for convertible debt with a non-contingent beneficial conversion feature. On another hand, ASC 825-10-15-5 states that the fair value option cannot be elected for a financial instrument that is in whole or in part classified by the issuer as a component of shareholders' equity. The example provided in ASC 825 is that of a convertible debt security with a non-contingent beneficial conversion feature. Therefore, a question arises as to whether a reporting entity may elect the FVO under ASC 815-15 for convertible debt with a non-contingent beneficial conversion feature, even though such election was explicitly precluded under ASC 825-10-15-5.

We believe that the accounting should be consistent whether ASC 815-15 or ASC 825-10 is applied because their measurement objectives are the same. Even though a company believes that it can elect the FVO under 815-15 for the entire hybrid financial instrument, if the instrument contains a non-contingent beneficial conversion feature (BCF), it would be precluded from doing so under ASC 825-10.

Question 6-3: Can a reporting entity elect to apply the fair value option to its equity interest in a newly-formed joint venture?

PwC Interpretive Response

Yes. Under current accounting, a contribution of assets or exchange of a consolidated business for an interest in a joint venture typically would not result in gain recognition, absent the receipt of cash or near cash consideration. However,

we believe a reporting entity may elect the fair value option and recognise the appreciation in value at the time of the contribution, provided that reporting entity's adoption of the FVO is substantive.

This is because ASC 825-10-25-4 states that an entity may choose to elect the fair value option for an eligible item at the date on which "the accounting treatment for an investment in another entity changes because... the investor ceases to consolidate a subsidiary or VIE but retains an interest." However, the exchange of assets upon formation of the joint venture does not represent the culmination of the earnings process. Thus, any gain recognised as a result of the election of the fair value option should be classified as an unrealised gain on the noncontrolling interest in the joint venture, not as a realised gain in the income statement related to the disposal of a subsidiary.

6.1.2 IFRS Scope

IAS 16, IAS 40, and IAS 38

All items under the scope of IAS 16 and IAS 40 and some items under IAS 38 (when an active market exists for the intangible asset) are eligible for the fair value option (revaluation model for assets under IAS 38 and IAS 16 and fair value model for assets under IAS 40). Accordingly, when determining eligibility for the fair value option, it is important to consider whether the item is properly within the scope of one of these standards.

The following items are explicitly excluded from the scope of IAS 38:

- a. intangible assets that are within the scope of another Standard;
- b. financial assets, as defined in IAS 32, *Financial Instruments: Presentation*;
- c. the recognition and measurement of exploration and evaluation assets (see IFRS 6, *Exploration for and Evaluation of Mineral Resources*); and
- d. expenditure on the development and extraction of minerals, oil, natural gas and similar non-regenerative resources.

IAS 16 does not apply to:

- a. property, plant and equipment classified as held for sale in accordance with IFRS 5, *Non-current Assets Held for Sale and Discontinued Operations*;
- b. biological assets related to agricultural activity (IAS 41, *Agriculture*);
- c. the recognition and measurement of exploration and evaluation assets (see IFRS 6, *Exploration for and Evaluation of Mineral Resources*); or
- d. mineral rights and mineral reserves such as oil, natural gas and similar non-regenerative resources.

However, IAS 16 applies to property, plant and equipment used to develop or maintain the assets described in (b)-(d).

PwC Observation: Subsequent to initial recognition, IAS 16 permits an entity to adopt either the cost model or the revaluation model as its accounting policy. The adopted policy should be applied to the whole of a class of property, plant and equipment and not merely to individual assets within a class. Similarly, under IAS 40 where the fair value model is chosen, an entity may not carry any of its investment property at cost.

The following items are explicitly excluded from the scope of IAS 40:

- a. biological assets related to agricultural activity (IAS 41); and
- b. mineral rights and mineral reserves such as oil, natural gas and similar non-regenerative resources.

IFRS 3

When a transaction or other event meets the definition of a business combination, the acquirer can use the option provided by IFRS 3 to measure at fair value noncontrolling interests in an acquiree. IFRS 3 does not apply to:

- a. The formation of a joint venture.
- b. The acquisition of an asset or a group of assets that does not constitute a business. In such cases the acquirer shall identify and recognise the individual identifiable assets acquired (including those assets that meet the definition of, and recognition criteria for, intangible assets in IAS 38) and liabilities assumed.
- c. A combination of entities or businesses under common control.

IAS 28

The option to measure at fair value investments in associates and joint ventures is limited by IAS 28 to venture capital organisations, mutual funds, unit trusts and similar entities, including investment-linked insurance funds.

IAS 39

The following items are explicitly excluded from the scope of IAS 39:

- a. Those interests in subsidiaries, associates and joint ventures that are accounted for under IAS 27, *Consolidated and Separate Financial Statements*, IAS 28, or IAS 31, *Interests in Joint Ventures*. However, entities shall apply this Standard to an interest in a subsidiary, associate or joint venture that according to IAS 27, IAS 28 or IAS 31 is accounted for under IAS 39.
- b. Rights and obligations under leases to which IAS 17 applies. However:
 - i. lease receivables recognised by a lessor are subject to the derecognition and impairment provisions of this Standard (see paragraphs 15-37, 58, 59, 63-65 and Appendix A paragraphs AG36-AG52 and AG84-AG93);
 - ii. finance lease payables recognised by a lessee are subject to the derecognition provisions of this Standard (see paragraphs 39-42 and Appendix A paragraphs AG57-AG63); and
 - iii. derivatives that are embedded in leases are subject to the embedded derivatives provisions of this Standard (see paragraphs 10-13 and Appendix A paragraphs AG27-AG33).

- c. Employers' rights and obligations under employee benefit plans, to which IAS 19 applies.
- d. Financial instruments issued by the entity that meet the definition of an equity instrument in IAS 32 (including options and warrants) or that are required to be classified as an equity instrument in accordance with paragraphs 16A and 16B or paragraphs 16C and 16D of IAS 32. However, the holder of such equity instruments shall apply IAS 39 to those instruments, unless they meet the exception in (a) above.
- e. Rights and obligations arising under (i) an insurance contract as defined in IFRS 4, *Insurance Contracts*, other than an issuer's rights and obligations arising under an insurance contract that meets the definition of a financial guarantee contract, or (ii) a contract that is within the scope of IFRS 4 because it contains a discretionary participation feature. However, IAS 39 applies to a derivative that is embedded in a contract within the scope of IFRS 4 if the derivative is not itself a contract within the scope of IFRS 4. Moreover, if an issuer of financial guarantee contracts has previously asserted explicitly that it regards such contracts as insurance contracts and has used accounting applicable to insurance contracts, the issuer may elect to apply either IAS 39 or IFRS 4 to such financial guarantee contracts. The issuer may make that election contract by contract, but the election for each contract is irrevocable.
- f. Any forward contracts between an acquirer and a selling shareholder to buy or sell an acquire that will result in a business combination at a future acquisition date. The term of the forward contract should not exceed a reasonable period normally necessary to obtain any required approvals and to complete the transaction.
- g. Loan commitments other than those loan commitments described in paragraph 4 of IAS 39. An issuer of loan commitments shall apply IAS 37, *Provisions, Contingent Liabilities and Contingent Assets*, to loan commitments that are not within the scope of IAS 39. However, all loan commitments are subject to the derecognition provisions of IAS 39.
- h. Financial instruments, contracts and obligations under share-based payment transactions to which IFRS 2 applies, except for contracts within the scope of paragraphs 5-7 of IAS 39.
- i. Rights to payments to reimburse the entity for expenditure it is required to make to settle a liability that it recognises as a provision in accordance with IAS 37, or for which, in an earlier period, it recognised a provision in accordance with IAS 37.

Under IAS 39, the fair value option is not available for investments in equity instruments that do not have a quoted market price in an active market and whose fair value cannot be reliably measured. Therefore, in the absence of a quoted market price in an active market, if the fair value of an equity investment is not reliably measurable, because the range of reasonable fair value estimates is significant and the probabilities of the various estimates within the range cannot be reasonably assessed, an entity is precluded from measuring the instrument at fair value (IAS39. AG80-81).

6.2 Application

6.2.1 U.S. GAAP

6.2.1.1 Accounting Election

The financial instruments guidance in ASC 825-10 permits reporting entities to apply the FVO on an instrument-by-instrument basis. Therefore, a reporting entity can elect the FVO for certain instruments but not others within a group of similar instruments (e.g., for a portion of an identical portfolio of available-for-sale securities but not for others). However, if the FVO is not elected for all eligible instruments within a group of similar instruments, the reporting entity is required to disclose the reasons for its partial election. In addition, the reporting entity must disclose the amounts to which it applied the FVO and the amounts to which it did not apply the FVO within that group. ASC 825-10-25-7 summarises exceptions to the instrument-by-instrument election as follows:

The fair value option may be elected for a single eligible item without electing it for other identical items with the following four exceptions:

- a. If multiple advances are made to one borrower pursuant to a single contract (such as a line of credit or construction loan) and the individual advances lose their identity and become part of a larger loan balance, the fair value option shall be applied only to the larger balance and not to each advance individually. This differs from a syndicate loan (discussed below) that are separate instruments for purposes of ASC 825-10.
- b. If the fair value option is applied to an investment that would otherwise be accounted for under the equity method of accounting, it shall be applied to all of the investor's eligible financial interests in the same entity (equity and debt, including guarantees).
- c. If the fair value option is applied to an eligible insurance or reinsurance contract, it shall be applied to all claims and obligations under the contract.
- d. If the fair value option is elected for an insurance contract (base contract) for which integrated or nonintegrated contract features or coverages (some of which are called riders and are defined under paragraph 944-30-35-30) are issued either concurrently or subsequently, the fair value option also must be applied to those features or coverages. The fair value option cannot be elected for only the nonintegrated contract features or coverages, even though those features or coverages are accounted for separately under Subtopic 944-30. For purposes of applying this Subtopic, neither an integrated contract feature or coverage nor a nonintegrated contract feature or coverage qualifies as a separate instrument.

A single contract that is deemed to be a financial instrument may not be further separated for purposes of electing the FVO. One exception is a loan syndication arrangement that results in multiple loans issued to the same borrower. Under ASC 825-10, each of those loans is considered a separate instrument, and the FVO may be elected for some loans but not others.

In the U.S., many financial institutions have elected the fair value option for their mortgage loans held in the pipeline awaiting sale or securitization. This election obviates the need to meet the requirements to achieve hedge accounting as it allows

for consistent fair value treatment of the loans and the related derivatives used to economically hedge the risks of holding the loans.

For U.S. GAAP financial reporting purposes, securities for which the fair value option has been elected are not presented as a separate category. If a reporting entity elects the fair value option for one or more investments, it may use terminology such as “securities carried at fair value” in describing these securities, instead of the “trading” terminology in ASC 320. Some reporting entities may be precluded from engaging in security trading activities by law or regulation; these restrictions do not preclude election of the FVO.

Question 6-4: Does the fair value option, if elected by a U.S. GAAP reporting entity, have to be applied on an entity-wide basis? For example, is a subsidiary required to elect the fair value option for a particular financial instrument in its separate reporting if the parent company has elected the fair value option for the instrument for consolidated reporting?

PwC Interpretive Response

No. We believe that a parent and subsidiary may apply a different treatment because the fair value election under ASC 815-15 is not based on management’s intent, as is the case with other areas of accounting (such as ASC 820).

Under U.S. GAAP, the FASB considered requiring the FVO election to be made on an entity-wide basis. However, the FASB rejected this approach because it could limit the number of reporting entities that would elect the FVO. Accordingly, subsidiaries and parent companies may make different elections with respect to a particular financial asset or liability.

6.2.1.2 Timing

A reporting entity may elect the FVO only in certain circumstances. ASC 825-10-25-4 states:

An entity may choose to elect the fair value option for an eligible item only on the date that one of the following occurs:

- a. The entity first recognizes the eligible item.
- b. The entity enters into an eligible firm commitment.
- c. Financial assets that have been reported at fair value with unrealized gains and losses included in earnings because of specialized accounting principles, but which subsequently cease to qualify for that specialized accounting. For example, a transfer of assets from a subsidiary subject to the Investment Companies guidance under Subtopic 946-10 to another entity within the consolidated reporting entity not subject to that Subtopic.
- d. The accounting treatment for an investment in another entity changes because either of the following occurs:
 1. The investment becomes subject to the equity method of accounting (for example, the investment may previously have been reported as a security accounted for under either Subtopic 320-10 or the fair value option in this Subtopic).

2. The investor ceases to consolidate a subsidiary including a variable interest entity (VIE) but retains an interest (for example, because the investor no longer has control, but continues to retain some common stock).
- e. An event that requires an eligible item to be measured at fair value, but does not impose a subsequent re-measurement obligation, excluding the recognition of impairment under lower-of-cost-or-market accounting or other-than-temporary impairment.

Remeasurement events are described in ASC 825-10-25-5 and include (1) business combinations as defined in ASC 805-10; (2) the initial consolidation or deconsolidation of a subsidiary or a VIE, or the reconsolidation of a deconsolidated VIE; and (3) significant modifications of debt, as defined in ASC 470-50, *Debt—Modifications and Extinguishments*.

PwC Observation: ASC 825-10 requires reporting entities to make a separate decision about whether to elect the FVO for each eligible item as its election date occurs. Entities may also elect the fair value option based on a pre-existing policy for specified types of eligible items. We believe that the level of documentation of such a policy may vary among reporting entities but that such documentation should be sufficiently clear so that it is easily understood which items are subject to the FVO election.

Question 6-5: Under U.S. GAAP, the FVO must be elected at acquisition, issuance, or when a previously recognised financial instrument is subject to a remeasurement (new basis) event. What qualifies as a “remeasurement event”?

PwC Interpretive Response

The master glossary in the ASC defines remeasurement (new basis) as an “event identified in other authoritative accounting literature, other than the recognition of an other-than-temporary impairment, that requires a financial instrument to be remeasured to its fair value at the time of the event but does not require that financial instrument to be reported at fair value continually with the change in fair value recognized in earnings.” For example, business combinations and significant modifications of debt under ASC 470-50 and ASC 310 are remeasurement events. Other examples of remeasurement events include the preparation of liquidation basis financial statements and fresh-start reporting for companies emerging from bankruptcy.

6.2.1.3 Presentation

ASC 825 requires immediate recognition of upfront costs and fees related to items for which the FVO is elected. For example, if the FVO is elected for an insurance contract, a reporting entity should not recognise any deferred acquisition costs related to that contract. Similarly, if the FVO is elected for a loan receivable, the reporting entity should not recognise any deferred loan-origination fees or costs related to that loan.

Immediate recognition of income and expense items that would be deferred absent election of the FVO might significantly change both the recognition pattern and the presentation of income or expense in the income statement. For example, for originated loans that are not measured using the FVO, deferred fees and costs are

capitalized as a net basis adjustment and either amortized to interest income or recognised as part of the gain/loss on the sale of the loan. However, if an originated loan is measured using the FVO, the costs and fees are recognised in current earnings in the applicable expense or revenue accounts (e.g., salaries, legal fees, fee revenue).

Interest Income and Expense

Prior to the codification, FAS 159, paragraph C1, amended Accounting Principles Board Opinion No. 21, *Interest on Receivables and Payables*, to state that amortization of premiums and discounts and the debt issuance costs of liabilities do not apply to items that are reported at fair value (ASC 835-30-45-1 through 45-4). Furthermore, ASC 825-10 indicates that it does not establish requirements for recognising and measuring dividend income, interest income, or interest expense but that the reporting entity's policy for such recognition should be disclosed.

ASC 825-10 allows for significant policy discretion in how to report interest income and expense for items under the FVO. We believe reporting entities may apply one (or some variation) of the following models for reporting interest income and expense:

- Present the entire change in fair value of the FVO item, including the component related to accrued interest, in a single line item in the income statement.
- Separate the interest income or expense from the full change in fair value of the FVO item and present that amount in interest income/expense. The remainder of the change in fair value should be presented in a separate line item in the income statement. The allocation of the change in fair value to interest income/expense should be an appropriate and acceptable method under GAAP. However, the SEC staff has historically expressed a view that such presentation should occur in limited circumstances. Please see below "Other Income Statement Impact."

Each presentation covers the same net change in fair value of the FVO item but can result in significant differences in individual line items in the income statement. Reporting entities should select a policy for income statement presentation that is appropriate for their individual facts and circumstances, disclose the policy in the notes to financial statements, and follow it consistently.

Other Income Statement Impact

The SEC staff has historically expressed a view related to the presentation in the income statement of instruments measured at fair value. The SEC staff generally believes that changes in the fair value of an instrument recognised at fair value each reporting period should be presented in a single line in the income statement. If existing GAAP prescribes a method of calculating interest income for identical instruments not carried at fair value, the SEC staff would not object to a presentation using that method for instruments that are carried at fair value.

Examples of instances where changes in fair value are permitted to be included in more than one line include derivatives that have been designated in qualifying hedging relationships; certain investments in debt and equity securities; certain originated or acquired loans; and, certain indebtedness. The change in fair value of these instruments may be presented in other than a single line presentation pursuant to the GAAP applicable to the instruments.

Question 6-6: An insurance company may elect the fair value option under ASC 825-10. Where should “Day 1” gains and acquisition costs be classified in the income statement?

PwC Interpretive Response

An insurance company elects the fair value option and recognises related acquisition expenses of \$4 as they are incurred. Because the premium received or to be received for a contract implicitly includes some amount for recovery of acquisition costs, a “Day 1” gain will result if a market participant would not incorporate the value of the Company’s acquisition efforts into the exit price for a contract. For example, the consideration (premium) received by the insurance company might be \$100, while the exit price of the obligation may be only \$95, resulting in a “Day 1” gain of \$5.

We believe the “Day 1” gain in this situation should be included in the single income statement line item where all other changes in fair value of the instrument will be presented (e.g., unrealised gain/loss line, fair value of financial instruments line, or other designated caption). The particular line item in the income statement where such changes in the fair value of the insurance contract obligation are presented is an accounting policy choice to be followed consistently for similar types of instruments.

Acquisition costs, or any other costs incurred to generate the business that are not part of cash flows of the insurance contract itself, should be recorded separately in an appropriate expense caption in the income statement. This accounting is consistent with the accounting model for insurance contracts, where acquisition costs are accounted for separately as expenses and not as part of the revenue or cost related to the insurance contract.

6.2.2 IFRS

6.2.2.1 Accounting Election

Investments in Associates and Joint Ventures

Investments held by venture capital organisations and the like are exempt from IAS 28’s requirements only when they are designated at fair value through profit or loss or are classified as held for trading, and accounted for in accordance with IAS 39. Changes in the fair value of such investments are recognised in profit or loss in the period of change (IAS 28.18).

The IASB acknowledged that fair value information is often readily available in venture capital organisations and entities in similar industries, even for start-up and non-listed entities, as the methods and basis for fair value measurement are well established. The IASB also confirmed that the reference to well-established practice is to emphasise that the exemption applies generally to those investments for which fair value is readily available.

Intangible Assets

Subsequent to initial recognition of intangible assets, an entity may adopt either the cost model or the revaluation model as its accounting policy. The policy should be applied to the whole of a class of intangible assets and not merely to individual assets within a class, unless there is no active market for an individual asset.

The revaluation model may only be adopted if the intangible assets are traded in an active market; hence it is not frequently used. Further, the revaluation model may not be applied to intangible assets that have not previously been recognised as assets (IAS 38.76). For example, over the years an entity might have accumulated for nominal consideration a number of licences of a kind that are traded on an active market. The entity has not recognised an intangible asset as the licences were individually immaterial when acquired. Market prices for such licences have recently risen significantly and the value of the licences held by the entity has substantially increased. The entity is, however, prohibited by IAS 38 from applying the revaluation model to the licences, because they have not previously been recognised as an asset.

The revaluation model may be applied to measure an intangible asset only subsequent to the asset's initial recognition and measurement at cost. The method cannot be used at initial recognition to record an intangible asset at a value other than cost (IAS 38.76). Recording assets acquired in a business combination at fair value is not the application of the revaluation model. It is a method of determining the "cost to the group" of individual assets acquired in a business combination.

The revaluation model may also be applied to an asset that was acquired by way of government grant and measured on initial recognition at a nominal amount (IAS 38.77). The nominal amount could be nil if the asset was received free of charge.

The only valuation basis permitted is fair value determined by reference to an active market. The definition of active market, which is consistent with IFRS 13, is a market in which all of the following conditions exist:

- the items traded in the market are homogeneous (similar in kind or nature);
- willing buyers and sellers are always available; and
- prices are publicly quoted.

An active market exists for only a few types of intangible assets and the revaluation model can only be used where such a market exists. IAS 38.78 notes that in some jurisdictions an active market may exist for freely transferable taxi licences, fishing licences, or production quotas. An example of a production quota might be emission rights, for which an active market is likely once a scheme is fully operational.

An active market cannot exist for brands, newspaper mastheads, music and film rights, patents or trademarks, because each such asset is unique. Although such unique intangibles may be bought and sold, the prices are negotiated between individual buyers and sellers rather than quoted on an active market. Such purchase and sale transactions are fairly infrequent. The price paid for an asset in one transaction may not be a good guide to the fair value of another asset (IAS 38.78). An example might be the purchase and sale of the brand name of a specific consumer product. The price paid is not a reliable measure of the fair value of another brand name as the asset is unique and there is no active market.

There is no requirement for valuations to be performed every reporting period. However, revaluations should be made with sufficient regularity that the carrying amount does not differ materially from fair value at the balance sheet date (IAS 38.75).

The frequency of revaluations, therefore, depends on movements in the fair value of the intangible asset. If an intangible asset's fair value differs materially from its

carrying amount, a new valuation is needed. Market prices for some intangibles may experience significant and volatile movements, such that annual valuations are needed. Intangibles with relatively stable market prices may not require such frequent valuations (IAS 38.79). A material change in value might be defined as one that “*would reasonably influence the decisions of a user of the accounts.*” As a policy of revaluation is allowed only when there is an active market for the assets, market values should be relatively easy to obtain and keeping such values up to date on an annual basis should also be straightforward.

Property, Plant and Equipment

The revaluation model requires that, subsequent to initial recognition, property, plant and equipment whose fair value can be reliably measured should be carried at a revalued amount, being fair value at the date of revaluation, less any subsequent accumulated depreciation and any subsequent accumulated impairment losses. Revaluations should be carried out with sufficient regularity that the carrying amount does not differ materially from that which would be determined using fair value at the end of the reporting period (IAS 16.31).

Revaluation, if adopted, does not have to be applied to all assets. However, revaluation must be applied to all assets within an individual class of assets and the valuations must be kept up-to-date at current fair values.

If a single item of property, plant and equipment is revalued, then the entire class of property, plant and equipment to which that item belongs should be revalued. Thus, adopting a policy of revaluation may be costly and involve complex record keeping.

However, an entity may define classes of assets that are narrower than, say, land, buildings, and plant and machinery, provided that they meet the following definition: “...*a grouping of assets of a similar nature and use in an entity’s operations*” (IAS 16.37).

The definition does not permit classes of assets determined solely on a geographical basis, but is otherwise reasonably flexible. An entity can adopt meaningful classes that are appropriate to the type of business and assets it holds. Separate disclosures must be made, however, for each class of assets. For example, each class of assets must be presented as a separate category in the table of movements in property, plant and equipment in the notes to the financial statements (IAS 16.73). This requirement may limit the adoption of many narrowly defined classes of assets.

One of the requirements of IAS 16 is that valuations should remain up-to-date. The standard does not specifically require valuations to be performed every year or every reporting period. The standard sets out the general principle that revaluations should be made with sufficient regularity that the carrying amount does not differ materially from that which would be determined using fair value at the end of the reporting period (IAS 16.31). This imposes no specific time interval for valuations, but rather the interval is determined by the movements in fair value.

A material change in value might be defined as one that “*would reasonably influence the decisions of a user of the accounts.*” It is a matter of judgment, which is ultimately the responsibility of management. However, in making that judgment, management would probably consult its appraisers and consider, among other things, factors such as changes in the general market, the condition of the asset, changes to the asset and its location. Management should consider the combined effect of all the relevant factors.

Property, plant and equipment within a single class should all be valued at the same time, to avoid selective revaluation of assets and to avoid “cherry-picking,” that is, reporting a mixture of costs and values made at different dates in the financial statements. However, a class of assets may be revalued on a rolling basis, provided that the revaluation is completed within a short period of time and that the revaluations are kept up to date (IAS 16.38).

Investment Property

With certain exceptions set out below, IAS 40 permits an entity to adopt either the fair value model or the cost model as its accounting policy and to apply that policy to all of its investment property. The exceptions to this rule are as follows:

- Regardless of its choice of policy for all other investment property, an entity may choose either the fair value model or the cost model for all investment property backing liabilities that pay a return linked directly to the fair value of, or returns from, specified assets including that investment property. It can choose either the fair value model or the cost model for all other investment property (IAS 40.32A). This choice of policy will be applicable mainly to insurers and similar entities. Its purpose is to mitigate the accounting mismatch that arises where such an entity uses different measurement bases for assets and liabilities. Such entities are able to elect to fair value investment property assets where the investment return on such assets is directly linked to returns on policyholder liabilities, without having to fair value all investment properties.
- When a property interest held by a lessee under an operating lease is classified as an investment property, the fair value model has to be applied to all investment property (other than those in the previous bullet point). However, it is a property by property choice whether to account for the leasehold property as an investment property and under IAS 40 or as a lease under IAS 17 (IAS 40.6).

When an entity has adopted the fair value model, the IASB believes that it should not subsequently change to the cost model. IAS 8 allows a change of policy only if the change will provide reliable and more relevant information about the effects of transactions, other events or conditions. The IASB believes that this is highly unlikely to be the case for a change from the fair value model to the cost model (IAS 40.31).

PwC Observation: When the cost model is chosen under IAS 40, an entity may not carry any of its investment property at fair value, but it may still adopt a policy of revaluation for its owner-occupied property if it wishes, as these properties are accounted for under IAS 16 (IAS 40.B51). However, the fair value model under IAS 40 and the revaluation model under IAS 16 have different accounting impacts. Under IAS 40, gains and losses arising on changes in fair value should be recognised in profit or loss in the period in which they arise.

Under IAS 16, a revaluation surplus is credited to other comprehensive income and accumulated in equity under the heading of revaluation surplus. An exception is a gain on revaluation that reverses a revaluation decrease on the same asset previously recognised as an expense. Gains are first credited to profit or loss to the extent that the gain reverses a loss previously recognised in profit or loss.

The revaluation surplus included in equity may be transferred directly to retained earnings when the surplus is realised (usually when the asset is derecognised). The transfer is made through reserves and not through the income statement. The entire surplus relating to an asset may be transferred when the asset is retired from use or disposed of or may be transferred as the asset is used. The amount transferred is the difference between depreciation based on the asset's revalued carrying amount and depreciation based on the asset's original cost. This amount may, therefore, be transferred from revaluation surplus to retained earnings each year, by means of a reserve transfer.

Noncontrolling Interests in an Acquiree

Noncontrolling interest represents the equity (or net assets) of a subsidiary that is not attributable to the parent and its subsidiaries. Noncontrolling interest can be measured in a business combination in one of two ways and the choice is available on a business-combination-by-business combination basis. Noncontrolling interest can be measured at either:

- fair value; or
- the noncontrolling interest's proportionate share of the acquiree's net identifiable assets (IFRS 3.19).

As part of its 2010 improvements to IFRS, the IASB clarified that the choice of measuring noncontrolling interests at fair value or at the proportionate share of the acquiree's net assets applies only to instruments that represent present ownership interests and entitle their holders to a proportionate share of the net assets in the event of liquidation. All other components of noncontrolling interest are measured at fair value unless another measurement basis is required by IFRS.

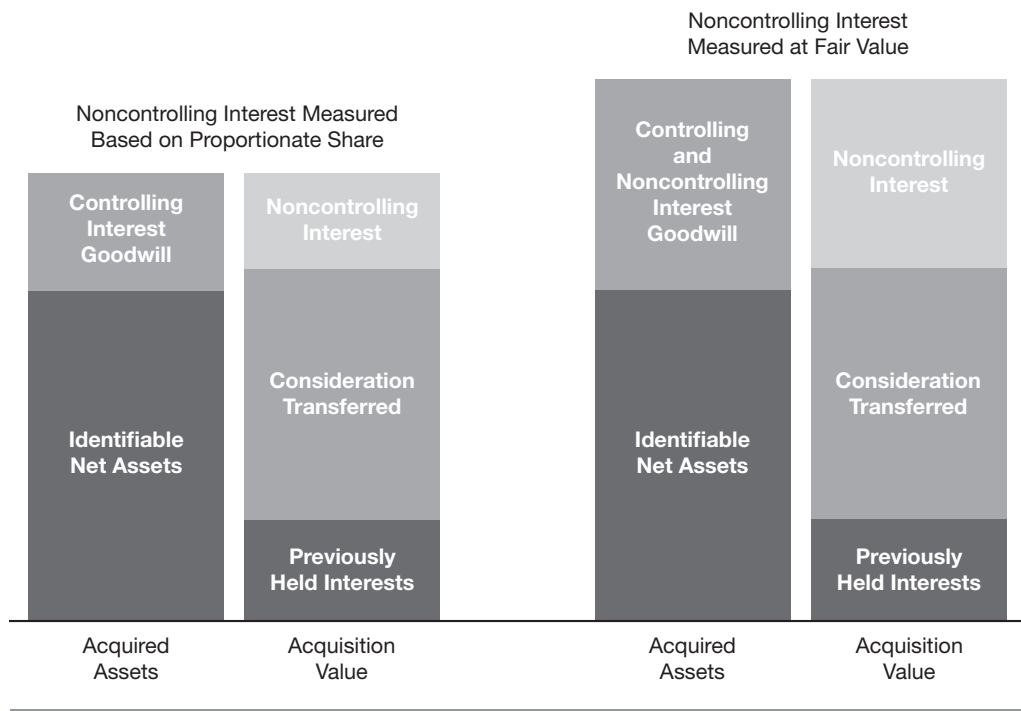
PwC Observation: The IASB made this amendment because some noncontrolling interests (e.g., share options) do not have a present ownership interest and so their share of net assets is zero. The Board concluded that allowing the noncontrolling interest to be measured at zero would not reflect the economic interest that the noncontrolling interest has in the entity.

When the noncontrolling interest is measured at fair value, it is recognised at an amount that includes the noncontrolling interest's goodwill (column 4 in Figure 6-1 below). Goodwill is the residual of the elements of a business combination. Therefore,

when the noncontrolling interest is measured at fair value, goodwill includes the noncontrolling interest's share as well as the parent's share (column 3).

When the noncontrolling interest is measured at its proportionate share of the acquiree's net identifiable assets, it does not include the noncontrolling interest's goodwill (column 2). In addition, total goodwill does not include any amount related to the noncontrolling interest (column 1). These two bases are illustrated in the following diagram, which shows that total acquired net assets recognised (including goodwill) is higher under the fair value method as a result of recognising goodwill attributable to the NCI.

Exhibit 6-1: Measurement of Noncontrolling Interest at Fair Value and Proportionate Share Under IFRS



An entity might consider the following points when it decides whether to measure noncontrolling interest at fair value.

Exhibit 6-2: Fair Value Option for Noncontrolling Interest

Proportionate Share Method—NCI Measured at Proportionate Share of Identifiable Net Assets	Fair Value Method—NCI Measured at Fair Value
Net assets (including goodwill) and equity are lower at business combination date.	Net assets (including goodwill) and equity are higher at business combination date.
NCI is purchased after the business combination—greater reduction in parent's share of equity.*	NCI is purchased after the business combination—smaller reduction in parent's share of equity.*
Total impairment of goodwill is smaller.**	Total impairment of goodwill is greater.**

* Assumes that the consideration paid for the purchase of the NCI is greater than its carrying amount.

** The recognition of goodwill impairments is not affected by how NCI is initially measured, only the amount is affected, because goodwill is grossed up for impairment-testing purposes when NCI is measured at the proportionate share of net assets. The amount charged to the parent's share of income is the same – the additional amount charged when NCI is measured at fair value will be included in the amount of profit or loss allocated to the NCI in the income statement.

See discussion of application of the fair value option to noncontrolling interest in FV 8: Application to Nonfinancial Assets, Nonfinancial Liabilities, and Business Combinations.

Financial Asset or Financial Liability (or a Group of Financial Assets, Financial Liabilities or Both)

An entity may designate a financial asset or a financial liability at fair value through profit or loss on initial recognition only in the following three circumstances:

- The designation eliminates or significantly reduces a measurement or recognition inconsistency (sometimes referred to as an “accounting mismatch”) that would otherwise arise.
- A group of financial assets, financial liabilities, or both is managed and its performance is evaluated on a fair value basis, in accordance with a documented risk management or investment strategy.
- The item proposed to be designated at fair value through profit or loss is a hybrid contract that contains one or more embedded derivatives unless:
 - the embedded derivative(s) does not significantly modify the cash flows that otherwise would be required by the contract; or
 - it is clear with little or no analysis when a similar hybrid (combined) instrument is first considered that separation of the embedded derivative(s) is prohibited, such as a pre-payment option embedded in a loan that permits the holder to pre-pay the loan for approximately its amortised cost.

The decision to designate a financial asset or a financial liability at fair value through profit or loss in these situations is similar to an accounting policy choice where the policy selected is one that provides more relevant information. However, unlike an accounting policy choice, the designation need not be applied consistently to all similar transaction (IAS 39.AG4C).

The designation can be applied on an asset-by-asset or a liability-by-liability basis, with the result that different holdings of the same type of asset or liability may be

accounted for using the fair value option and others not. For example, assume an entity expects to issue a number of similar financial liabilities amounting to C100 and acquire a number of similar financial assets amounting to C50 that will be carried at fair value. Provided the criteria are satisfied, the entity may significantly reduce the measurement inconsistency by designating at initial recognition all of the assets but only some of the liabilities (for example, individual liabilities with a combined total of C45) at fair value through profit or loss. The remaining liabilities amounting to C55 can be carried at amortised cost.

PwC Observation: The option can be applied only to whole instruments and not to portions, such as a component of a debt instrument (that is, changes in value attributable to one risk such as interest rate risk and not credit risk); or proportions (that is, percentages) (IAS39.AG4G). This is because it may be difficult to isolate and measure the portion of a financial instrument if the portion is affected by more than one risk; the amount recognised in the balance sheet for that portion would be neither fair value nor cost; and the fair value adjustment for the portion may move the carrying amount of an instrument away from its fair value.

Accounting Mismatch

IAS 39 imposes a mixed measurement model under which some financial instruments are measured at fair value and others at amortised cost; some gains and losses are recognised in profit or loss and others initially in other comprehensive income. This combination of measurement and recognition requirements can result in inconsistencies (sometimes referred to as an “accounting mismatch”) between the accounting for an asset (or group of assets) and a liability (or group of liabilities).

An accounting mismatch occurs when assets and liabilities that are economically related (that is, share a risk) are treated inconsistently. This could occur when a financial asset is classified as available-for-sale (with most changes in fair value recognised directly in other comprehensive income), while a related liability is measured at amortised cost (with changes in fair value not recognised). In such circumstances, an entity may conclude that its financial statements would provide more relevant information if both the asset and the liability were classified as at fair value through profit or loss (IAS 39.AG4D).

PwC Observation: Use of the fair value option may eliminate measurement anomalies for financial assets and liabilities that provide a natural offset of each other because they share the same risk, but where hedge accounting cannot be used because none of the instruments is a derivative. More importantly, even if some of the instruments are derivatives that could qualify for fair value hedge accounting, classification of both items at fair value through profit or loss avoids the designation, tracking, and assessing of hedge effectiveness that hedge accounting entails. Thus, use of the fair value option as an alternative to hedge accounting can significantly reduce the accounting mismatch. However, under the fair value option the entire change in fair value would be recognised in profit or loss, not simply the change in fair value attributable to the risk that is hedged by an offsetting derivative. As a result, the amount reported in profit or loss under the fair value option is unlikely to be the same as the change in fair value of the hedging derivative. This may lead to greater profit or loss volatility. Furthermore, hedge accounting can be revoked at any time, but the fair value option is irrevocable.

The IASB has not established a percentage, or “bright line,” test for interpreting “significant” in the context of an accounting mismatch. However, the Basis for Conclusions of IAS 39 makes it clear that an effectiveness test similar to that used for hedge accounting is not required to demonstrate that a reduction in an accounting mismatch is significant (IAS 39.BC75B). This means judgment is required to determine when the fair value option should be applied. In this regard, management should look at the objective of the proposed designation as “at fair value through profit or loss.” Comparing the accounting impact—that is, the measurement basis and the recognition of gains and losses—of all relevant items (including, for example, any funding that it is not proposed to be designated at fair value through profit or loss) before and after the designation will give an indication of whether an accounting mismatch has been eliminated or significantly reduced.

PwC Observation: Although it is necessary to demonstrate that there is an accounting mismatch, the extent of evidence needed to identify the accounting mismatch for which the fair value option is to be used need not be extensive. It may be possible to use the same evidence for a number of similar transactions, depending on the circumstances – for example, by identifying a particular kind of accounting mismatch that arises from one of the entity’s chosen risk management strategies. It is not necessary to have the extensive documentation required for hedge accounting, but the entity does need to provide evidence that the fair value option was designated at inception.

Designations as at fair value through profit or loss should be made at initial recognition and once made are irrevocable. For practical purposes, the entity need not enter into all of the assets and liabilities giving rise to measurement or recognition inconsistencies at the same time. A reasonable delay is permitted provided that each transaction is designated as at fair value through profit or loss at its initial recognition and, at that time, any remaining transactions are expected to occur (IAS 39.AG4F).

Group of Financial Assets and Liabilities Managed on a Fair Value Basis

An entity may manage and evaluate the performance of a group of financial assets, financial liabilities, or both in such a way that measuring that group at fair value through profit or loss results in more relevant information. Therefore, in order to designate financial instruments at fair value through profit or loss, the designation should be based on the manner in which the entity manages and evaluates performance, rather than on the nature of those financial instruments. An entity should designate all eligible financial instruments that are managed and evaluated together (IAS 39.AG4J). However, designation under this criterion must meet the following two requirements:

- The financial instruments are managed and performance is evaluated on a fair value basis in accordance with a documented risk management or investment strategy.
- Information about the group is provided internally on that basis to the entity’s key management as defined in IAS 24 (for example, the entity’s board of directors and chief executive officer).

PwC Observation: The requirement that a group of financial assets and liabilities be managed and its performance evaluated on a fair value basis means that management should evaluate the portfolio on a full fair value basis and not on a risk-by-risk basis. For example, an entity that originates fixed interest rate loans and manages the interest rate risk of this portfolio based on the fair value attributable only to interest rate changes will be unable to use the fair value option. This is because the fair value concept is a broader notion than hedge accounting, such that evaluating the portfolio's performance for only some risks is not sufficient. Therefore, an entity's risk management policy and the resulting management information should look at the entire change in fair value and not for only some risks to justify the fair value option's use.

The required documentation of the entity's strategy need not be on an item-by-item basis, nor at the level of detail required for hedge accounting. Documentation may be on a portfolio or group basis as long as it clearly identifies the items for which the fair value option is to be used. If the documentation relies on other pre-existing documents, reference should be made to those documents and there should be clear demonstration that the entity manages and evaluates the relevant financial assets or financial liabilities on a fair value basis.

The documentation also needs to be sufficient to demonstrate that using the fair value option is consistent with the entity's risk management or investment strategy. In many cases, the entity's existing documentation, as approved by key management personnel, should be sufficient for this purpose. For example, if the performance management system for a group—as approved by key management personnel—clearly demonstrates that its performance is evaluated on a total return basis, no further documentation is required to demonstrate compliance with the above requirements (IAS 39.AG4K).

6.3 Fair Value Option and Hedge Accounting

ASC 825 and IAS 39 provide reporting entities with the option to report long-term debt at fair value instead of on an amortised cost basis. A reporting entity may elect to report its long-term debt at fair value for a number of reasons, including a desire to achieve a natural hedge without having to apply the onerous hedging requirements of ASC 815 and IAS 39.

In evaluating the use of the fair value option for long-term debt instead of application of hedge accounting, reporting entities should consider the potential impact on the financial statements as follows:

- **Debt issuance costs:** When electing the fair value option, all debt issue costs must be expensed immediately, instead of amortized as part of the effective interest rate over the life of the debt.
- **A full offset of fair value may not occur:** When electing the fair value option on the debt, the entire fair value of the debt must be recorded. In contrast, in the case of a fair value hedge under ASC 815 and IAS 39, only that portion of the long-term debt attributable to the risk being hedged (e.g., interest rate risk) must be recorded at fair value. For example, under ASC 815 and IAS 39, the changes in fair value attributable to the reporting entity's changes in credit would be ignored when determining the fair value of the debt that is to be recorded when the designated risk is the benchmark interest rate. However, if the reporting entity elects the fair value option, it will be required to reflect the impact of all changes in fair value of

its debt in the income statement. Because the hedging instrument's fair value is likely to change due to interest rate changes only, a difference may arise in the income statement, potentially resulting in volatility.

- **Income statement presentation:** Under ASC 815 and IAS 39, unless a derivative is in a qualifying hedging relationship, all changes in the fair value of the derivative, including changes from interest accruals or net interest cash flows, should be presented in a single line item in the income statement. For qualifying ASC 815 and IAS 39 hedging relationships, reporting entities may separate the interest accrual (income or expense) of the derivative from the total change in fair value of the derivative and present the interest accrual component in the same line item as the interest on the hedged item. The additional disclosures about own credit risk in IFRS, as noted in FV 6.4.2, and the disclosure requirements for instruments for which the FVO has been elected under U.S. GAAP and discussed in FV 6.4.1 are also required.
- **Irrevocable election:** Hedging relationships can be de-designated; the fair value option under ASC 825 and IAS 39 is irrevocable and the debt will be required to be recorded at fair value throughout its life.

PwC Observation: A reporting entity should consider other implications of applying the FVO to its long-term debt, which requires full mark-to-market as discussed above. For example, recognizing changes in the debt's fair value in current earnings might adversely impact the entity's compliance with debt covenants and/or its regulatory and capital requirements. Similarly, debt issuance costs, which are often significant, are expensed immediately under the FVO. Further, under the FVO, reporting entities are required to independently estimate the change in fair value of the debt in accordance with the fair value standards. Changes in the fair value of the derivative are not a proxy for the change in fair value of the debt.

6.4 Disclosure Requirements

6.4.1 U.S. GAAP

ASC 825-10 permits entities to apply the FVO on an instrument-by-instrument basis; however, it requires additional disclosures if the FVO is elected for only some of the eligible items within a group of similar eligible items (e.g., a description of those similar items and reasons for partial election). One of the FASB's objectives in prescribing these disclosures is to ensure that the reader of the financial statements will understand the extent to which the FVO is being used by the reporting entity and how changes in fair values affect earnings for the period. These disclosures are intended to address concerns about the potential for reduced comparability of financial statements.

ASC 825-10-55-6 through 55-13 include an example of a disclosure that integrates FVO disclosure requirements with the ASC 820 requirements. The example is for illustrative purposes only and does not present the only method to comply with the disclosure requirements.

Mortgage Banking Disclosures

ASC 825-10-55 emphasizes the requirement to assess the adequacy of disclosures for all lending products (including both secured and unsecured loans) and the effect of changes in market or economic conditions on the adequacy of those disclosures.

The terms of certain loan products may increase a reporting entity's exposure risk and thereby result in a concentration of credit risk either as an individual product type or as a group of products with similar features. For example possible shared characteristics that should be considered may include (but are not limited to):

- Borrowers subject to significant prepayment increases.
- Loans with terms that permit negative amortization.
- Loans with high loan-to-value ratios.

These increased risks should be considered when determining the adequacy of disclosures.

6.4.2 IFRS

Investments in Associates and Joint Ventures

Where the designation is used, entities are required to disclose a narrative description of how designation as at fair value through profit or loss is consistent with the entity's documented risk management or investment strategy.

If there are significant statutory, contractual, or exchange control restrictions on an associate's ability to transfer funds to the investor in the form of dividends or repayment of loans or advances, the nature and extent of the restriction should be disclosed (IAS 28.37(f)). This type of situation could arise, for example, when the associate is in a country where there are exchange control restrictions, which restrict the associate's ability to pay dividends out of that country.

Intangible Assets

Where intangible assets are stated at revalued amounts under the revaluation model, the following should also be disclosed:

For each class of intangible asset:

- The effective date of the revaluation.
- The carrying amount of revalued intangible assets.
- The carrying amount determined under the cost model (historical cost less depreciation measurement basis).
- The revaluation surplus relating to intangible assets, showing the opening and closing balance for the period, the change for the period and any restrictions on the distribution of the balance to shareholders.
- The methods and significant assumptions used in estimating fair values.

Property, Plant and Equipment

Where items of property, plant and equipment are stated at revalued amounts, the following should also be disclosed:

- The effective date of the revaluation.
- Whether an independent appraiser was involved.
- The methods and significant assumptions used in estimating fair values.

- The extent to which fair values were determined directly by reference to observable prices in an active market recent market transactions on an arm's length basis, or other valuation techniques.
- The carrying amount of each class of property, plant and equipment determined under the cost model.
- The revaluation surplus, showing the change for the period and any restrictions on the distribution of the balance to shareholders.
- The change in the revaluation surplus arising from a change in the liability for decommissioning, restoration, or similar liabilities.

Investment Property

If an entity adopts the cost model, it is still required to disclose the fair value of its investment property. Thus, this additional disclosure requirement for those that adopt the cost model ensures that fair value information is available for all investment property companies.

IAS 40 contains extensive disclosure requirements. When the entity applies the fair value model, some of the disclosures include:

- Whether and in what circumstances it classifies, and accounts for, property interests held under an operating lease as investment property;
- Extent of involvement of independent professional appraisers with recent experience in the location and category of investment property being valued; and
- A reconciliation of the carrying amount at the beginning and end of the period showing net gains or losses from fair value adjustments.

Noncontrolling Interests in an Acquiree

An acquirer discloses the following information for each business combination in which the acquirer holds less than 100 percent of the equity interests in the acquiree at the acquisition date:

- The amount of the noncontrolling interest in the acquiree recognised at the acquisition date and the measurement basis (fair value or proportionate share of the fair value of identifiable net assets) for that amount.
- For each noncontrolling interest in an acquiree measured at fair value, the valuation techniques and key model inputs used for determining that value.

Financial Asset or Financial Liability (or a Group of Financial Assets, Financial Liabilities or Both)

If the entity has designated a loan or receivable (or group of loans or receivables) as at fair value through profit or loss, it should disclose:

- The amount of change, during the period and cumulatively, in the fair value of the loan or receivable (or group of loans or receivables) that is attributable to changes in the financial asset's credit risk.
- The amount of the change in the fair value of any related credit derivatives or similar instruments that has occurred during the period and cumulatively since the loan or receivable was designated as at fair value through profit or loss (IFRS 7.9).

The disclosures described above apply only to loans and receivables (or groups of loans and receivables) that have been designated as at fair value through profit or loss. They do not apply to all financial assets with that designation. For example, a quoted financial asset can never be classified as “loans and receivables.” Therefore, in this case the above disclosures are not required.

If the entity has designated a financial liability as at fair value through profit or loss, it should disclose:

- The amount of change, during the period and cumulatively, in the financial liability’s fair value that is attributable to changes in the credit risk of that liability determined either:
 - as the amount of change in its fair value that is not attributable to changes in market conditions that give rise to market risk; or
 - using an alternative method the entity believes more faithfully represents the amount of change in its fair value that is attributable to changes in the credit risk of the liability.

Changes in market conditions that give rise to market risk include changes in an observed (benchmark) interest rate, the price of another entity’s financial instrument, a commodity price, a foreign exchange rate, or an index of prices or rates. For contracts that include a unit-linking feature, changes in market conditions include changes in the performance of the related internal or external investment fund.

- The difference between the financial liability’s carrying amount and the amount the entity would be contractually required to pay at maturity to the holder of the obligation (IFRS 7.10).

As stated above, an entity is required to disclose the amount of change in a liability’s fair value that is attributable to changes in the liability’s credit risk. Although quantifying such changes might be difficult in practice, the IASB concluded that disclosure of such information would be useful to users and would help alleviate concerns that users may misinterpret the profit or loss changes in credit risk, especially in the absence of disclosures.

Chapter 7: Application to Financial Assets & Financial Liabilities

Chapter 7: Application to Financial Assets & Financial Liabilities

This chapter discusses the application of the fair value standards to fair value measurements of financial assets and financial liabilities. It should be read in connection with the overall framework included in FV 3: Framework for Application of the Fair Value Standards and the discussion of key concepts in FV 4: Concepts.

Also, the following should be noted for each section of this chapter. ASC 820-10-50-2E and IFRS 13.97 require that certain disclosures be presented for assets and liabilities not measured at fair value on the balance sheet but for which fair value is disclosed in accordance with ASC 825 or IFRS 7. One such requirement is to disclose the level within the fair value hierarchy of a financial instrument's fair value measurement. As a result, reporting entities are required to determine the level in the fair value hierarchy of fair value measurements of assets and liabilities for which fair value is required to be disclosed, including instruments that are not recorded at fair value. (Under U.S. GAAP, non-public entities are exempt from this requirement.)

7.1 Non-Derivative Financial Assets

Non-derivative financial assets, such as loans, may be recorded on the balance sheet based on a number of different models under U.S. GAAP and IFRS. If they are reported or disclosed at fair value, the fair value standards apply.

Key concepts that should be considered when applying the fair value standards to non-derivative financial assets include the following:

Exhibit 7-1: Non-Derivative Financial Assets Under the Fair Value Standards

Transaction costs—costs to sell	Costs to sell are generally not included in determining fair value.
Key valuation considerations	<ul style="list-style-type: none">• Income, cost, or market valuation technique(s) should be used as appropriate.• Requires consideration of principal or most advantageous market.• Requires use of market participant assumptions.• No recognition of blockage factors for financial instruments (see FV 4.5.1.3).• Fair value of restricted assets should be adjusted to reflect the discount, if any, a market participant would require as a result of the restriction (see FV 4.6).• Requires use of the price within the bid-ask spread that is most representative of fair value in the circumstances but allows certain practical expedients (see FV 4.5.4).• U.S. GAAP allows a practical expedient for an entity to estimate the fair value of certain alternative investments using Net Asset Value (NAV) without further adjustment, if certain criteria are met.
Disclosures	Prescribed in the fair value standards for investments recorded at fair value, including ASC 820-10-50-2E and IFRS 13.97 for instruments whose fair value is only disclosed (see FV 5: Disclosures).

Specific considerations in applying the fair value standards to different types of non-derivative financial assets are further described below.

7.1.1 Loans

The classification of a loan under U.S. GAAP generally depends on whether the loan meets the definition of a debt security under ASC 320, whereas classification of a loan under IFRS is not driven by legal form. In addition, U.S. GAAP provides industry-specific guidance for mortgage banking entities. Such industry-specific guidance does not exist under IFRS.

7.1.1.1 Loans—U.S. GAAP

A creditor holding loans that are not debt securities will use one of three models when reporting the loans on its balance sheet:

- Lower of cost or fair value for loans held for sale.
- Amortised cost less an allowance for credit losses for loans held for investment.
- Fair value for loans for which the option under ASC 825-10 has been elected. The use of the fair value option is discussed in FV 6: Fair Value Option.

For loans reported at the lower of cost or fair value, the excess of cost over fair value is required to be accounted for as a valuation allowance, with changes in the amount of the allowance included in earnings in the period in which the change occurs. Loans carried at cost less an allowance for credit losses may be subject to the measurement provisions under ASC 310-10-35, *Receivables—Subsequent Measurement*, as further discussed below.

If a loan held for investment for which the fair value option has not been elected is subsequently identified to be evaluated for collectability, ASC 310-10-35 generally provides that the holder record the loan based on its expected future cash flows discounted at the loan's effective rate. The initial recording of the loan at cost and the recording of impairments based on a loan's effective rate are not fair value measurements. However, ASC 310-10-35 also allows a practical expedient to estimate the impairment of a loan using either the observable market price (i.e., fair value) of a loan or the fair value of the underlying collateral if the loan is collateral-dependent. Regardless, a creditor must measure impairment based on the fair value of the collateral when the creditor determines that foreclosure is probable.

The measurement framework of ASC 820 applies when fair value is used to determine the carrying amount of impaired loans. As a result, impaired loans measured using the practical expedient and collateral-dependent loans for which foreclosure is probable are reported at fair value both at initial recognition of impairment and on an ongoing basis until recovery or charge-off. Accordingly, in those circumstances, the disclosure provisions in ASC 820 will apply. A creditor should continue to consider estimated costs to sell (transaction costs), on a discounted basis, in the measure of impairment if those costs are expected to reduce the cash flows available to repay or otherwise satisfy the loan. However, transaction costs may not be considered in the measure of impairment if the cash flows available to satisfy the loan are expected to come from operating the collateral.

Mortgage Loans—U.S. GAAP

ASC 948 provides industry-specific guidance for mortgage banking entities.

Mortgage loans held for sale represent a mortgage banker's "inventory" of products. ASC 948-310-35-1 states that mortgage loans held for sale should be reported at the lower of cost or fair value.

Financial institutions typically manage their loan assets on a portfolio basis. ASC 820 requires entities to measure fair value using assumptions that market participants would use, assuming they act in their economic best interest. The market participant in the context of mortgage loans typically would be another bank or insurance company that also has a portfolio of similar loans. The market participant purchasing a mortgage loan will act in its economic best interest by considering how the loan will fit into its overall portfolio when determining a price to pay for it. As a result, it is likely that a market participant will value the mortgage loan based on portfolio level inputs as opposed to valuing it solely as an individual loan.

However, financial institutions must consider the unit of account that is specified in other guidance. For loans held for sale, ASC 948-310-35-3 changes the unit of measurement by specifically allowing the aggregation by type of loan to determine fair value. At a minimum, a reporting entity should make separate determinations of fair value for residential and commercial mortgage loans. Either the aggregate or individual loan basis may be used in determining the lower of cost or fair value for each type of loan. However, the analysis should be consistent with the way the underlying loans are valued and ultimately sold by the reporting entity. A reporting entity's policy will establish the unit of account to be used in making the ASC 820 measurement of fair value.

PwC Observation: Because of the above, we believe that entities may measure the fair value of loans held for sale using portfolio-level assumptions. This conclusion would also apply to determining the fair value of loans not held for sale. In those situations, market participants are banks or insurance companies that have portfolios of similar instruments and would only purchase a single loan because it fits into one of their portfolios.

Further, for loans that are not held for sale, the unit of account varies depending on what is being measured. In both cases, they are recorded at the individual loan or contract level, but impairments may be calculated at the portfolio level.

When measuring the fair value of mortgage loans, there are a number of challenges in applying the fair value standards' principal or most advantageous market guidance. The principal or most advantageous market may be represented by either the loan market or, in some cases, by reference to the securitization markets. If a market exists for the item the entity holds (i.e., the loan), that market should be used as the basis for the valuation.

If a market does not exist for the asset or liability being measured, but a market does exist for the transformed item (i.e., the securitised loan), the market for the transformed item can be used to determine the fair value of the asset or liability, adjusted as appropriate for transformation costs and margins (or profit) to reflect the fair value of the asset or liability held by the reporting entity. Thus, an entity may work backwards from the reference market for the transformed asset to derive a fair value for the asset in the state in which it exists at the measurement date. The FASB concluded that measurement under ASC 820 should focus on the asset or liability that is being valued (i.e., loans) and not on what the asset or liability may become (i.e., securitised loans). Thus, the value of the securitised loan is not a substitute for

the value of the loan; the adjustment to get back to the value of the individual loan is a necessary step in the valuation process.

Loan Commitments—U.S. GAAP

ASC 815-10-S99-1, *SAB Topic 5.DD, Written Loan Commitments Recorded at Fair Value Through Earnings* (SAB 109), provides guidance on the measurement of written loan commitments recorded at fair value. Staff Accounting Bulletin (SAB) 109 expresses the SEC staff's view that, consistent with the guidance for transfers and servicing in ASC 860-50 and for financial instruments in ASC 825-10, the expected net future cash flows related to the associated servicing of the loan should be included in the measurement of all written loan commitments that are accounted for at fair value through earnings.

7.1.1.2 Loans—IFRS

Under IAS 39, loans are carried at amortised cost unless required to be measured at fair value because (1) the reporting entity intends to sell the assets, (2) the assets are designated as available-for-sale, or (3) the reporting entity has elected the fair value option (see FV 6: Fair Value Option). Unlike U.S. GAAP, IFRS does not have a lower of cost or market category for loans.

Loans carried at amortised cost are subject to the impairment provisions of IAS 39. If there is objective evidence that an impairment loss on a financial asset measured at amortised cost has been incurred, the amount of the loss should be measured as the difference between the asset's carrying amount and the present value of estimated future cash flows. The expected cash flows should exclude future credit losses that have not been incurred and should be discounted at the financial asset's original effective interest rate. The recording of impairments based on a loan's effective interest rate is not a fair value measurement. However, IAS 39.AG84 allows a practical expedient to determine impairment on the basis of an instrument's fair value using an observable market price.

The measurement framework of IFRS 13 applies when fair value is used to determine the carrying amount of impaired loans. For discussion of the application of the disclosure provisions of IFRS 13 for those loans, see Question 5-16.

7.1.2 Investments in Equity and Debt Securities

7.1.2.1 Investments in Equity and Debt Securities—U.S. GAAP

The scope of ASC 320 includes investments in equity securities that have readily determinable fair values and all investments in debt securities. Outside ASC 320, there are other instances in which securities without a readily determinable fair value must be carried at fair value.

ASC 320 provides three models that may be applied in the initial recording and subsequent adjustment of these securities. An equity security that has a "readily determinable fair value" as defined by ASC 320 must be recorded at fair value as either a "trading security" or a security that is "available-for-sale." Debt securities may also be recorded at fair value as either trading or available-for-sale securities; however, under certain conditions, ASC 320 also permits a third option, "held-to-maturity," under which debt securities are recorded at amortised cost.

Securities recorded at fair value and treated as either trading or available-for-sale are subject to the measurement and disclosure requirements of ASC 820. Securities reported as held-to-maturity and carried at amortised cost are not within the scope of ASC 820's disclosure requirements, other than those required for assets and liabilities for which fair value is disclosed. In those cases, the fair values of held-to-maturity securities are required to be measured consistent with the provisions of ASC 820 when preparing the disclosures required by ASC 320 and ASC 825.

7.1.2.2 Investments in Equity and Debt Securities—IFRS

IAS 39¹ provides four categories for classification of financial assets that might be applicable for investments in equity and debt securities:

- Financial assets at fair value through profit or loss—Financial assets can be classified in this category if designated by the entity at initial recognition or classified as held-for-trading.
- Held-to-maturity investments—Includes nonderivative financial assets with fixed or determinable payments and fixed maturities. An entity should have the positive intent and ability to hold the assets to maturity.
- Loans and receivables—Includes nonderivative financial assets with fixed or determinable payments that are not quoted in an active market.
- Available-for-sale financial assets—Includes nonderivative financial assets that are designated as available-for-sale or are not classified in one of the categories above, and are measured at fair value with changes in fair value recognised through profit or loss.

PwC Observation: As part of the IFRS Foundation Education Initiative, the IFRS Foundation staff is developing, with the assistance of a valuation expert group, educational material to support IFRS 13. The material will cover the application of the principles in IFRS 13 across a number of topics. In October 2012, the IFRS Foundation staff published a draft of the first chapter of this educational material titled "*Measuring the fair value of unquoted equity instruments within the scope of IFRS 9.*"

¹ In November 2009, the IASB published the first part of IFRS 9 relating to classification and measurement of financial assets. IFRS 9 replaces the multiple classification and measurement models for financial assets in IAS 39 with a model that currently has only two classification categories: amortised cost and fair value. Classification under IFRS 9 is driven by the entity's business model for managing the financial assets and the contractual cash flow characteristics of the financial assets. Under IFRS 9, a debt instrument is measured at amortised cost only if the entity is holding it to collect contractual cash flows and the cash flows represent solely payments of principal and interest. Otherwise, the debt instrument is measured at fair value through profit or loss. IFRS 9 applies for annual periods beginning on or after January 1, 2015, with early adoption available. However, in November 2012, the IASB published an exposure draft proposing limited amendments to IFRS 9. The exposure draft proposes a third classification category for debt instruments: fair value through other comprehensive income (FV-OCI). A debt instrument would be measured at FV-OCI only if its cash flows represent solely payments of principal and interest and it is held in a business model that is managed both in order to collect contractual cash flows and for sale. As a result, it is expected that the mandatory effective date of IFRS 9 will be delayed at least until 2016.

Question 7-1: Are cash equivalents and other short term investments, including certificates of deposit, that are recorded at amortised cost subject to the fair value standards?

PwC Interpretive Response

All financial assets and liabilities that require fair value disclosure are subject to certain aspects of the fair value standards. For example, while entities might measure certain short term investments at fair value, others are not measured at fair value but entities may be required to disclose their fair values. The disclosure measurement should be in accordance with the fair value standards and the disclosures in 820-10-50-2E and IFRS 13.97 are required. Also, in the event of an impairment and subsequent write-down of the investment to its fair value, the measurement requirements of the fair value standards apply (see FV 7.1.1.1 for U.S. GAAP and FV 7.1.1.2 and Question 5-16 for IFRS).

Question 7-2: In determining the fair value of an investment in a convertible security, should the reporting entity evaluate the security in its current form as convertible debt, or evaluate using the “if converted” value?

PwC Interpretive Response

Both. First the entity should determine if a principal market exists for the convertible security and, if so, that principal market should be used. In the absence of a principal market, the most advantageous market may depend on whether the convertible security is “in the money” and whether the conversion option is available to be exercised. Being “in the money” means that a market participant may look to the “if converted” value of the underlying security instead of the convertible instrument.

If the security is in the money and can be exercised, the most advantageous market may be to assume a conversion and sale of the underlying shares through a public exchange. However, an adjustment may be necessary to reflect the probability of exercise. The reporting entity should also consider the market value of the host convertible security, which may be selling at a premium to the “if converted” shares due to the combination of the yield on the convertible security and the option value of the conversion feature.

7.1.2.3 Restricted Securities

If a reporting entity holds a security that has restrictions on its sale or transferability (i.e., a restricted security), the fair value measurement should be adjusted to reflect the discount a market participant would require as a result of the holding period if the restriction is an attribute of the security and not just on the reporting entity. That general principle applies regardless of when the restriction ends.

Example 6, Case A, *Restriction on the Sale of an Equity Instrument*, of ASC 820 (ASC 820-10-55-52) and Example 8, *Restriction on the sale of an equity instrument*, of IFRS 13 (IFRS13.IE28) illustrate the impact of a legal restriction on the sale of an equity instrument. They note that the “restriction is a characteristic of the instrument and, therefore, would be transferred to market participants.” Accordingly, the restriction should be considered in the valuation of the security as, presumably, it would be considered by market participants when determining the fair value of the security. However, if the restriction arises outside of the security, it would not be included in the valuation. This may occur as a result of side agreements or

compliance with statutory requirements imposed on the holder of the security that are not a direct attribute of the security.

Question 7-3: When should a reporting entity incorporate restrictions on sale when determining fair value?

PwC Interpretive Response

The impact of a restriction on the sale or use of an asset depends on whether the restriction would be considered by market participants in pricing the asset. In determining whether a restriction should be considered in the valuation of an asset, the source of the restriction and its connection to the underlying security should be carefully analysed.

For a restriction to be considered an attribute of the security, the restriction should be specific to the security, not to the reporting entity holding the security. For example, a company holding a block of stock in another company may also hold a board seat on the investee. Through the board seat, the company obtains material, nonpublic information and as a result cannot sell the security until such information becomes public. Since the board seat is not a specific attribute of the security held, the material nonpublic information and accompanying restriction should not be considered in the valuation of the security. Similarly, holders of securities may at times be subject to blackout periods as a result of possessing material non-public information. In those cases, the restriction is not attributable to the security, but rather the holder, and therefore should not be considered in determining the fair value. The key factor is whether the security itself carries the legal restriction or if the restriction exists due to the nature of the business of the reporting entity holding the security or by any means other than restriction on transfer of the security itself.

The date that the restriction is established is not critical to the analysis. Whether the restriction existed on the date the security was acquired or the restriction was created subsequent to acquisition, the holder should consider its impact on the security's fair value at each reporting date if the restriction is specific to the security and would be considered by market participants in determining the exit price.

7.1.2.4 Investments Held by Not-for-Profit Entities—U.S. GAAP

ASC 958 is applicable for not-for-profit reporting entities and its requirements for recording the value of investments are similar to ASC 320. The key difference from ASC 320 is that all equity securities with readily determinable fair values (as defined by ASC 958) and all debt securities must be recorded at fair value on a recurring basis. Unlike ASC 320, there is no option to record certain investments in debt securities at amortised cost. The same issues with respect to measuring fair value that apply for investment securities under ASC 320 also apply under ASC 958.

7.1.2.5 Fund Investments Using NAV as a Practical Expedient—U.S. GAAP

The NAV of an open-end fund, whether a registered investment company fund such as a mutual fund or an alternative investment fund such as a hedge fund, serves as the basis for subscription and redemption transactions for investors in such entity. For reporting entities that are required to estimate fair value of their investments in entities that calculate NAV (i.e., hedge funds, private equity funds, real estate funds, venture capital funds, commodity funds, fund of funds, etc.), ASC 820 provides a practical expedient that can be used in defined circumstances to determine the fair value of such investments using NAV, without adjustment. This practical

expedient can be applied on an investment by investment basis, but must be applied consistently to the entire investment in that entity. Further, it is an accounting policy election and must be applied consistently from period to period, unless a change is preferable.

Using NAV as a practical expedient is permissible in the following circumstances:

- the investment does not have a readily determinable fair value, as defined in the ASC Master Glossary,² **and**
- the investment in the entity has all the attributes of an investment company specified in ASC 946-10-15-2, **or**
- if one or more of those criteria are not present, the investment is in an entity for which it is industry practice to issue financial statements using the guidance consistent with ASC 946, *Financial Services—Investment Companies* (formerly the AICPA Audit and Accounting Guide, *Investment Companies*), **and**
- NAV is calculated consistent with the guidance in ASC 946 as of the reporting entity’s measurement date, **and**
- it is not probable that the investment will be sold at an amount other than NAV.

If the measurement of NAV is not as of the reporting entity’s measurement date, the most recent measure of NAV should be adjusted to reflect significant events between the measurement dates (i.e., a rollforward should be done).

The following criteria are provided in ASC 820-10-35-62 when determining if a sale at an amount other than NAV is considered probable. All of the following criteria must be met as of the reporting entity’s measurement date:

- a. Management, having the authority to approve the action, commits to a plan to sell the investment.
- b. An active program to locate a buyer and other actions required to complete the plan to sell the investment have been initiated.
- c. The investment is available for immediate sale subject only to terms that are usual and customary for sales of such investments (for example, a requirement to obtain approval of the sale from the investee or a buyer’s due diligence procedures).
- d. Actions required to complete the plan indicate that it is unlikely that significant changes to the plan will be made or that the plan will be withdrawn.

ASC 820-10-35-54B provides three examples regarding the categorisation in the fair value hierarchy of investments for which the fair value is estimated using the NAV practical expedient. Those examples include:

- a. If a reporting entity has the ability to redeem its investment with the investee at net asset value per share (or its equivalent) at the measurement date, the fair value measurement of the investment shall be categorized within Level 2 of the fair value hierarchy.
- b. If a reporting entity will never have the ability to redeem its investment with the investee at net asset value per share (or its equivalent), the fair value measurement of the investment shall be categorized within Level 3 of the fair value hierarchy.

² Part of the definition of “readily determinable fair value” deals with restricted stock. The NAV practical expedient is not available if the investment has a restriction expiring in more than one year.

- c. If a reporting entity cannot redeem its investment with the investee at net asset value per share (or its equivalent) at the measurement date but the investment may be redeemable with the investee at a future date (for example, investments subject to a lockup or gate or investments whose redemption period does not coincide with the measurement date), the reporting entity shall take into account the length of time until the investment will become redeemable in determining whether the fair value measurement of the investment shall be categorized within Level 2 or Level 3 of the fair value hierarchy. For example, if the reporting entity does not know when it will have the ability to redeem the investment or it does not have the ability to redeem the investment in the near term at net asset value per share (or its equivalent), the fair value measurement of the investment shall be categorized within Level 3 of the fair value hierarchy.

PwC Observation: An open-ended mutual fund may produce a daily NAV that is validated with a sufficient level of observable activity (purchases and redemptions or sales at NAV) to support categorisation of the fair value measurement as Level 1 or Level 2 within the fair value hierarchy and may not need to use the practical expedient.

For complete discussion of the fair value hierarchy, see FV 4.5.

IFRS does not allow the use of NAV as a practical expedient. Refer to FV 2.2.2.1 for additional information.

7.2 Insurance Contracts

In certain limited cases, insurance contracts are measured at fair value. The market participants for insurance contracts are usually other insurance companies that have portfolios of similar insurance contracts. Likely, the market participant would value the insurance contract using portfolio-level assumptions.

7.3 Servicing Assets and Servicing Liabilities

7.3.1 Servicing Assets and Servicing Liabilities—U.S. GAAP

Servicing is defined as the contractual right to service or administer the functions associated with a financial asset. In accordance with ASC 860-50, a separate servicing asset or liability should be recognised if a servicing right is contractually separated from the financial asset being serviced through a transfer of the financial asset to a third party that qualifies for sale accounting or the acquisition or assumption of the right to service the financial asset from a third party. Although they are not individual financial assets and liabilities, servicing assets and liabilities are based on financial assets and included in this chapter.

ASC 860-50-30-1 requires separately-recognised servicing assets and liabilities to be measured initially at fair value. As with any fair value measurement, reporting entities should consider market participant assumptions when valuing servicing rights. ASC 860-50-35-1 permits a reporting entity to subsequently measure each class of servicing assets and liabilities by use of one of two methods:

- The *amortisation method*, which involves the amortisation of servicing assets or liabilities over the period of estimated net servicing income or net servicing loss. The amortisation method requires subsequent measurement at fair value only

when servicing assets are impaired or servicing liabilities are less than the fair value of the servicer's obligation.

- The *fair value measurement method* involves the measurement of servicing assets or liabilities at fair value at each reporting date. Changes in fair value are reported in income in the period of change.

ASC 860-50 enables the fair values of servicing assets and liabilities to be aligned with the fair values of derivative instruments. In addition, the fair values of servicing rights may be used by reporting entities as an input to the valuation of whole loans and interest rate locks.

To the extent recorded at fair value at the reporting date, servicing assets and liabilities are subject to the disclosure requirements of ASC 820. In addition, ASC 860-50-50 provides additional disclosure requirements for servicing assets and liabilities. The fair value disclosure requirements of ASC 860 are subject to the measurement framework of ASC 820.

7.3.2 Servicing Assets and Servicing Liabilities—IFRS

Servicing rights are recognised when an entity transfers a financial asset in a transfer that qualifies for derecognition in its entirety and retains the right to service the financial asset for a fee. IAS 39/IFRS 9 require the entity to recognise either a servicing asset or a servicing liability for that servicing contract as follows:

- If the fee to be received is expected to be more than adequate compensation for the servicing, the entity should recognise a servicing asset for the servicing right.
- If the fee to be received is not expected to compensate the entity adequately for performing the servicing, the entity should recognise a servicing liability for the servicing obligation at its fair value.

Servicing rights do not meet the definition of a financial instrument because they represent a commitment to supply a service and can only be settled by the service delivery. However, since such servicing rights are essentially an expected stream of cash flows that results from a contractual agreement, they are similar to financial instruments and recognised and initially measured on the same basis as financial assets and liabilities. Therefore, servicing assets and liabilities are subject to the measurement requirements of IFRS 13 when initially recognised at fair value.

Servicing assets or liabilities are subsequently amortised over the period of estimated net servicing income or net servicing loss. Subsequent measurement at fair value through profit or loss is precluded because the fair value option is applicable only to financial items, and therefore, it cannot be applied to servicing rights.

7.4 Derivative Assets and Derivative Liabilities

Derivative assets and liabilities within the scope of ASC 815 and IAS 39/IFRS 9 are required to be recorded at fair value at inception and on an ongoing basis. Applying the fair value standards' measurement and disclosure requirements may be complex, depending on the composition of the portfolio and the source of valuation information. Derivatives may be financial assets and liabilities (e.g., interest rate swaps) or nonfinancial assets and liabilities (e.g., commodity contracts). Under IFRS, commodity contracts that meet the definition of a derivative are treated as if they are financial instruments. In this chapter, we discuss all derivatives, as the accounting

treatment is generally the same whether a derivative is considered a financial or non-financial instrument.

All derivative contracts within the scope of ASC 815 and IAS 39/IFRS 9 are required to be recorded at fair value at inception.

A summary of key aspects of measuring the fair value of derivatives under the fair value standards follows:

Exhibit 7-2: Derivative Assets and Liabilities Under the Fair Value Standards

Unit of account to be measured	As defined by ASC 815 and IAS 39/IFRS 9, this is generally the contract unless the portfolio exception can be elected. See FV 7.5.
Measurement of fair value	<ul style="list-style-type: none"> • Quoted market prices in active markets are the best evidence of fair value and must be used if available (price times quantity held). • Requires consideration of principal or most advantageous market. • Requires use of market participant assumptions. • Requires consideration of whether credit adjustments to derivative liabilities are appropriate. • Permits the fair value measurement of financial assets and financial liabilities with offsetting market or credit risks to be based on their net positions, in certain circumstances (the “portfolio exception”). See FV 7.5.
Other considerations—Day One gains and losses	<ul style="list-style-type: none"> • Under U.S. GAAP, Day one gain or loss must be recognised if transaction price and exit price are different at inception, even if based on unobservable inputs (see FV 4.2). However, models and valuation adjustments should be reviewed to ensure the appropriate computation of fair value. • Under IFRS, if transaction price and exit price are different at inception, Day one gain or loss is recognised only when the fair value is evidenced by comparison with other observable current market transactions in the same instrument or is based on a valuation technique whose variables include only data from observable markets (see FV 4.2). • Models and valuation adjustments should be reviewed to ensure the appropriate computation of fair value.
Disclosures	<ul style="list-style-type: none"> • Disclosures prescribed in ASC 820-10-50-1 through 50-3 and IFRS 13.93 through 13.96 (see FV 5: Disclosures).

When estimating the fair value of derivative assets and liabilities, a reporting entity will need to consider the following:

- **Principal or most advantageous market:** Depending on the reporting entity’s business, it may or may not have a principal market for its derivative instruments because it may not be able to access certain markets. For example, a financial institution’s principal market for the sale of interest rate swaps may be the retail market, assuming the interest rate swap transaction volume is the greatest in that market, even though the financial institution originates its interest rate swaps in the

wholesale market. Conversely, an industrial company entering into an interest rate swap may not have a principal market if it does not have access to the markets in which interest rate swaps transact. In this circumstance, the reporting entity must determine a hypothetical market and the characteristics of the relevant market participants. Note that settlement value is not considered an exit value.

- Determine the valuation technique(s): The reporting entity should consider the income, market, and cost approaches in determining the appropriate method(s) to calculate fair value. We expect that generally the market or income approach will be used when determining the fair value of derivative instruments. Regardless of the technique, market participant assumptions must be incorporated. A reporting entity should consider factors such as incorporating credit and other non-performance risk into derivative valuations, and recording model adjustments for risk if market participants would do so.

The fair value standards require incorporation of nonperformance risk (including credit risk of both the reporting entity and the counterparty) into the valuation of both assets and liabilities, including those arising from derivative contracts, to the extent that such nonperformance risk affects the price that would be received to sell a derivative in an asset position or paid to transfer a derivative in a liability position in an orderly transaction with market participants. As with other elements of fair value measurement, nonperformance risk should be measured from the perspective of external market participants. Some of the factors that would reduce nonperformance risk include: master netting agreements that are effective upon default, collateral arrangements, and termination provisions in derivatives. See further discussion of considerations for measuring counterparty credit risk in FV 9: Consideration of Credit Risk.

PwC Observation: Although a reporting entity's own credit risk was included in derivative liability valuations under IAS 39, the methods used to incorporate that credit risk may not be appropriate under IFRS 13. Therefore, this will be a change in estimate for many IFRS preparers as they adopt IFRS 13. The updated valuations may affect hedge effectiveness testing. For further discussion, see FV 7.7.

7.5 Measuring Portfolios of Financial Instruments

The fair value standards include an exception to the general valuation principles in instances in which an entity manages its market risk(s) and/or single counterparty credit risk exposure within a group (portfolio) of financial instruments on a net basis. In the case of credit risk, the portfolio exception applies assuming the mitigation of credit risk is legally enforceable.

The "portfolio exception" allows for the fair value of those financial assets and financial liabilities to be measured based on the portfolio's net position for the risk(s) being managed on a net basis (i.e., the price that would be received to sell a net long position or transfer a net short position for a particular market or credit risk exposure), rather than the individual values of financial instruments within the portfolio (i.e., the gross position). This represents an exception to how financial assets and financial liabilities are measured under the fair value standards, which requires each unit of account within a portfolio to be measured on its own (that is, on a gross basis).

When the unit of account is the individual financial instrument, absent use of the portfolio exception, aggregation or offsetting of instruments to determine fair value

would not be permitted. Furthermore, the application of premiums and discounts in the measurement of financial instruments would be more restrictive.

However, when a reporting entity elects the portfolio exception, the unit of measurement becomes the net position of the portfolio. In applying the portfolio exception, valuation should be performed based on the price a market participant would pay (or be paid) to acquire the entire portfolio in a single transaction. In essence, this valuation would reflect the “net open risk” of the portfolio. Because the unit of measurement is the net position of the portfolio, size is an attribute of the portfolio being valued, and consequently, an adjustment based on size is appropriate to the extent it would be incorporated by market participants.

The portfolio exception is available for financial assets and liabilities that can (pursuant to the fair value option) or must be measured at fair value on a recurring basis in the balance sheet. It does not apply to assets and liabilities for which fair value is only disclosed or for which fair value is not measured on a recurring basis.

As originally written in ASC 820-10-35-18D and IFRS 13.48, derivatives that do not meet the definition of a financial instrument did not qualify for the portfolio exception. This includes, for example, physically-settled commodity derivative contracts or combinations of cash-settled and physically-settled commodity derivative contracts.

PwC Observation:

U.S. GAAP

When initially drafted, ASC 820 indicated that only financial assets and liabilities were eligible to be included in the portfolio exception. Non-financial assets and liabilities would continue to be valued on a net basis under an “in-use” valuation premise; however, financial assets and liabilities would only be valued on a net basis if they were eligible for the portfolio exception. This would mean that a mixed portfolio of physically-settled commodity contracts (that are derivatives under ASC 815) managed in a portfolio with offsetting cash-settled derivatives would not be eligible for the portfolio exception.

In a speech delivered at the 2011 AICPA National Conference on Current SEC and PCAOB Developments, Susan Cospser, FASB Technical Director and EITF Chairman, stated that the exclusion of non-financial derivatives from the portfolio exception was not intentional and would be corrected during the normal course of the FASB’s annual Technical Corrections process.

We expect the language in the guidance (ASC 820-10-35-18D through 35-18H) to be revised to include not only financial assets and liabilities (as currently written), but also financial and non-financial derivatives subject to ASC 815. The future Technical Correction will likely allow entities to measure fair value on a net basis for those portfolios in which financial assets and liabilities and non-financial derivatives are mixed.

Even though the correction was not made as part of the Technical Corrections issued in October 2012 (Accounting Standards Update No. 2012-04), we believe it will be addressed in a future Technical Correction. Therefore, we believe it is appropriate to apply the portfolio exception to such contracts before the Technical Correction.

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IFRS

In November 2012, the IASB issued an exposure draft for the 2011-2013 cycle of its annual improvements project that included a proposed amendment to IFRS 13. The amendment would clarify that the portfolio exception applies to all contracts within the scope of IAS 39 and IFRS 9, regardless of whether they meet the definitions of financial assets or liabilities in IAS 32. These include certain contracts to buy or sell non-financial items that can be settled net in cash or another financial instrument. The proposed effective date would be for annual periods beginning on or after January 1, 2014.

The IASB noted in the Basis for Conclusions to this proposed amendment that it did not intend to exclude such contracts from the scope of the portfolio exception. Therefore, we believe it is appropriate to apply the portfolio exception to such contracts before the effective date.

It should also be noted that the portfolio exception pertains to fair value measurement, not to financial statement presentation. Whether the instruments in the portfolio or group can or must be presented on a net or gross basis in the financial statements depends on other guidance. Therefore, while the fair value of financial instruments managed within a group may be determined based on the net position when using the portfolio exception, the entity must allocate the resulting fair value based on the unit of account required by other guidance for those instruments. The fair value standards do not prescribe any allocation methodology; rather the allocation should be performed in a reasonable and consistent manner that is appropriate in the circumstances. See FV 9.2.4.1 for further discussion of allocation methods.

Qualifying for the Portfolio Exception

The fair value standards prescribe requirements for use of the portfolio exception based on how the reporting entity manages the portfolio. The portfolio exception is elective, but is only permitted if the reporting entity:

- a. manages the group of financial assets and liabilities on the basis of the entity's net exposure to a particular market risk (or risks) or to the credit risk of a particular counterparty, and
- b. reports information to management about the group of financial assets and financial liabilities on a net basis.

If a reporting entity makes an accounting policy election to use the portfolio exception, it must provide evidence supporting the assertion that the portfolio or group is managed based on the net exposure to market or credit risk. Examples of such evidence could include robust documentation of the company's risk management or investment policies and strategies, risk committee meeting minutes, and internal management reporting information. In addition, management may want to consider the types and composition of portfolios the company has historically managed when evaluating the reasonableness of its assertions.

When elected, the entity must apply the portfolio exception consistently from period to period, and must provide evidence that it continues to manage risk exposure(s) on a net basis in order to continue to qualify for the exception. As the entity's risk exposure preferences change, the entity can elect not to use the exception, but instead measure the fair value of its financial instruments on an individual instrument

basis. However, since significant changes in risk management strategies are rare, changes to the use of the portfolio exception are expected to be infrequent.

Offsetting Market Risks

Market risks refer to interest rate risk, currency risk, or other price risk.

The exception relating to the offsetting of market risks is limited to those risks that are substantially the same in nature and duration. Therefore, it would be inappropriate to apply the offsetting risks guidance to unrelated risks such as interest rate risk, currency risk, or other price risk. However, the exception can be applied to basis risk, provided that the basis risk is taken into account in the fair value measurement. As a result, provided an entity meets the criteria for applying the exception, it would be appropriate to offset financial instruments with different interest rate bases if the entity manages the associated risk on a net basis (e.g., LIBOR and treasury rates).

Degree of Offset

When considering whether the portfolio exception is available for a group of financial assets and/or liabilities for a particular market risk, the degree of exposure (or offset) of market risk to arrive at a net long or net short position should be considered. The fair value standards do not prescribe how much of a long or short position is permitted to qualify for the portfolio exception. For example, assets in a portfolio would not have to be nearly 100 percent offset by liabilities for a certain risk. Rather, a reporting entity should assess the appropriateness of electing the portfolio exception based on the nature of the portfolio being managed in the context of its risk or investment management strategy.

Broad risk management strategies such as managing on the basis of value-at-risk (“VAR”) may not be sufficient alone for a group to be eligible for the portfolio exception because VAR does not necessarily represent managing a business or portfolio to a net position. Further, if the positions in a portfolio do not offset at the measurement date in accordance with expectations, the entity would not be precluded from continuing to use the portfolio exception at that measurement date, provided the lack of offset is temporary and due to unanticipated market events or operating conditions.

PwC Observation: PwC does not believe that bright lines or “percentages” of the degree of offset of risk positions should be applied in determining whether there is sufficient offset in a group or portfolio. However, we also believe it would be inappropriate to apply the portfolio exception to an aggregated position without offset or hedging (e.g., an aggregated block of equity shares). Such a position may relate to a trading strategy that is not managed on a net basis.

It is important that the application of the portfolio exception be applied based upon the substance of the portfolio and how it is managed. For example, it would be inappropriate to enter into a non-substantive offsetting position in an attempt to qualify for the portfolio exception solely to apply a blockage adjustment.

Mismatches in the Portfolio

In applying the portfolio guidance, valuation of the net open risk position is required. Market participants may value a portfolio with basis risk differently than one that was perfectly hedged. The following are some examples of mismatches in the portfolio that affect the measurement of fair value.

Basis Differences

Portfolios with basis differences may qualify for the portfolio exception. If there is any basis difference for dissimilar risks, that basis risk should be reflected in the fair value of the net position. For example, an entity may include financial instruments with different (but highly correlated) interest rate bases in one portfolio, provided the entity manages its interest rate risk on a net basis. However, any difference in the interest rate bases (e.g., London Interbank Offered Rate (LIBOR) vs. treasury) should be considered in the fair value measurement.

Duration Differences

Similar to basis differences, portfolios containing offsetting positions with different maturities may qualify for the portfolio exception. Adjustments to the fair value of the net position of a portfolio should also be made for such duration mismatches. Therefore, unmatched (or unhedged) portions of the terms to maturity of the financial assets and liabilities that form part of the portfolio could result in an adjustment to the net position. For example, in a portfolio of interest rate swaps with long (asset) positions of 30 years to maturity offset with short (liability) positions of 25 years to maturity, the company could avail itself of the portfolio exception for the net position for interest rate risk. However, the five years of unhedged long position would be measured as part of the net position.

Exposure to Counterparty Credit Risk

When applying the portfolio exception to a portfolio in which a specific counterparty's credit risk is managed on a net basis, the entity must consider market participants' expectations about whether any arrangements in place to mitigate credit risk exposure are legally enforceable in the event of default (for example, through a master netting arrangement). In a portfolio of financial assets and liabilities within a master netting arrangement, the adjustment for credit risk could be applied to the net exposure to the counterparty, rather than to each of the financial assets and liabilities separately. The adjustment will be applied to the net position based on the individual counterparty's credit risk in the case of a net asset position or the reporting entity's own credit risk in the case of a liability position. The portfolio exception does not change the requirement to incorporate a credit valuation adjustment (CVA) on or debit valuation adjustment (DVA) on a net open asset or liability position, respectively.

Example 7-1: Portfolio Exception—Portfolio of Shares and a Forward Contract

Background/Facts:

Company A owns 1 million common shares of Entity X and enters into a forward sale agreement for 500,000 shares of Entity X. Company A accounts for the shares at fair value using the fair value option. Company A documents and manages the long position of shares and the forward sale agreement together as a net position according to its investment strategy. Can Company A apply the portfolio exception for offsetting market price risk? Specifically, could Company A value the net position based on the price that is most representative within the bid-ask spread, by incorporating a discount to the net position if this is how market participants would price the net risk exposure?

PwC Interpretive Response

Maybe. The portfolio exception changes the unit of measurement to the net position (rather than each individual share which may be prescribed as the unit of account

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and unit of measurement in other guidance absent use of the portfolio exception). Furthermore, the fair value standards do not prescribe the degree of offset of the position that is required to qualify for the portfolio exception. Management should consider whether the degree of offset in the position is meaningful and determine whether the particular strategy is consistent with its overall investment policies and strategies. We believe it would be inappropriate to apply the portfolio exception to an aggregated position without any offset or hedging (e.g., an aggregated block of equity shares). However, if management can demonstrate that it qualifies in this fact pattern based on its investment strategy, fair value could be measured based on the net position of the shares and forward contract.

Example 7-2: Portfolio Exception—Applying the Bid-Ask Spread to a Net Risk Position: Interest Rate Swaps

Background/Facts:

Company B has \$500 million in 10-year pay 3-month LIBOR, receive fixed rate interest rate swaps (liability position) and \$200 million in 10-year receive 3-month LIBOR, pay fixed rate interest rate swaps (asset position) that Company B manages together and documents as a \$300 million net liability position for purposes of managing interest rate risk. Can Company B elect the portfolio exception and adjust the bid-ask spread of the \$500 million short position and the \$200 million long position to a new bid-ask spread for the net short \$300 million position based upon how market participants would price the net risk exposure at the measurement date?

PwC Interpretive Response

Yes. When elected, the portfolio exception allows an entity to measure the fair value of those financial assets and financial liabilities based on the net positions of the portfolio. Assuming the entity has met the requirements for electing the portfolio exception, the exception permits Company B to determine fair value based on how market participants would price the net risk exposure within the bid-ask spread. Note that the interest rate risk exposure on the long and short positions are identical (i.e., both positions are based on LIBOR) and the terms to maturity are also identical. Therefore, the entity would not need to apply any adjustments for basis or duration mismatches. However, Company B should consider any need for a counterparty credit risk adjustment.

Example 7-3: Portfolio Exception—Duration Mismatches: Interest Rate Swaps with Different Maturities

Assume the same facts as in Example 7-2 except that the long position (i.e., the \$200 million in swap asset) has a term to maturity of 12 years instead of 10 years. Company B documents its holding as a \$300 million net liability position for purposes of managing interest risk. Does the resulting approach to fair value measurement described in Example 7-2 change?

PwC Interpretive Response

Yes. While Company B may elect the portfolio exception for the \$300 million net position, it would be required to adjust the fair value on the 10-year net position for the additional two years of net open risk. The fair value for the remaining two-year period on the 12-year swap would impact the valuation of the net position.

7.6 Changes in Market Participant Assumptions

Market participant assumptions related to the valuation of financial instruments continue to evolve, even for “plain vanilla” products. Some changes result from the market’s response to dislocations observed during the credit crisis. Others result from the natural evolution in markets or valuation theory and practice.

Examples of recent evolutions in valuing financial instruments include the use of overnight index swap (OIS) discounting and funding valuation adjustments.

7.6.1.1 OIS Discounting

Over the past few years, many derivatives dealers began valuing certain instruments using an overnight index swap curve to discount cash flows, rather than the LIBOR swap curve that has been used in the past. They believe the OIS curve is the appropriate curve to use in the valuation of derivatives collateralized by cash. One consideration prompting this change is that cash collateral typically earns an overnight interest rate so the discount curve should reflect this applicable cost of funding.

This valuation approach continues to evolve. It has been applied by clearing houses in determining valuations for margin purposes for some products. And, derivatives dealers continue to refine their valuation estimates to include consideration of the nature and currency of the derivative, as well as the collateral that can be posted under the Credit Support Annex (“CSA”) that governs the posting of collateral.

7.6.1.2 Funding Valuation Adjustment (FVA)

While most major dealers agree that CSA-based discounting is generally appropriate for collateralized derivatives, the consensus regarding the appropriate funding (and therefore discount) curves to be used in the valuation of uncollateralized derivatives or portions of derivatives subject to CSAs (e.g., those with non-zero posting thresholds which leave some part of the position uncollateralized) is at a less developed stage. There are a number of market participants considering if and how to incorporate an FVA. An FVA is an adjustment to fair value representing an institution’s cost of funding. *Risk* magazine describes FVA as follows:

When a dealer is in-the-money on the client trade, it would have to post collateral to its hedge counterparty, and would therefore need to borrow money from its internal treasury, which is a funding cost. ... On the flipside, if the dealer is out-of-the-money on the **client** trade, it receives collateral from its **hedge** counterparty, and if the collateral is assumed to be rehypothecable, the dealer should be able to lend that collateral to its treasury, which is a funding benefit.³ Emphasis added.

These examples illustrate that even when the market participants in a given market haven’t changed, there is continuing evolution of pricing methods and a need for monitoring and, potentially, updated assumptions in valuing those instruments. As such, preparers should have a process for re-evaluating the assumptions used in their own valuations and should robustly document their conclusions as to what assumptions represent those a market participant would use, the observability of those inputs, and their level in the fair value hierarchy.

³ *Risk* February 2011, pages 18–22.

Finally, revised fair value measurements resulting from a change in valuation technique or its application are accounted for as a change in accounting estimate, with the change affecting current and future periods, if applicable.

7.7 Hedge Accounting Considerations

7.7.1 Hedge Accounting Considerations—U.S. GAAP

Fair Value Hedges

The fair value standards apply to assets and liabilities designated as the hedged item in a fair value hedge. ASC 815 requires that the change in fair value of the hedged item attributable to the risk being hedged be measured over the hedge period and reported as an adjustment of the hedged item's carrying value. The risk being hedged may be the overall change in fair value or only the change in value attributable to a specific risk. In those situations, fair value is measured based on the hedged risk and not, at least formally, on the asset or liability designated as the hedged item in a fair value hedge. The hedged item may be an item that is reported at fair value with changes in fair value reported in other comprehensive income (e.g., an available-for-sale debt or equity security) or it may be reported based on some other measurement basis (e.g., a debt instrument reported at amortised cost). However, it is the change in the fair value of the hedged risk that is recognised at fair value during the term of the hedge.

We believe that in measuring the change in fair value of the hedged item, the fair value estimates used to calculate the change must be measured at their exit values based on the framework for measurement provided by the fair value standards. When measuring the basis adjustment for a hedged item that is being hedged for changes in value specific to a particular risk, that change in value should be measured consistently with the way that change in value would be calculated in the overall measurement of the hedged item at exit value under the fair value standards.

How Nonperformance Risk Impacts Hedge Effectiveness

For derivative instruments, the periodic measurement of nonperformance risk poses a number of challenges. The challenges are particularly acute when assessing the prospective effectiveness of derivatives designated as hedging instruments in a fair value hedge. Specifically, it has been unclear whether and how nonperformance risk should be determined and allocated to the individual derivatives in a master netting arrangement for the purpose of the prospective effectiveness assessment. A master netting arrangement generally provides that multiple derivative contracts with the same counterparty will be net settled in the event of a default on or termination of any one of the contracts. This results in a credit exposure on the "net" position rather than at the individual derivative level. Master netting arrangements may also incorporate other positions with the counterparty (e.g., other obligations and other forms of collateral). At issue is whether changes in fair value attributable to nonperformance risk should be determined and allocated to each individual derivative when a master netting arrangement is in place (for the purpose of determining whether a fair value hedge will be or has been effective).

The SEC staff has stated its belief that entities should consider nonperformance risk for derivative instruments used as hedging instruments in fair value hedges for which the long haul method of assessing hedge effectiveness is used. However, the SEC staff also noted that it will not object to an approach under which the reporting entity makes a qualitative assessment as to whether nonperformance risk (if allocated) would impact the determination of effectiveness of the individual hedging relationships.

If, as a result of this qualitative analysis, the reporting entity concludes that the allocation of nonperformance risk is unlikely to affect its assessment of hedge effectiveness, the reporting entity would not be required to allocate the impact of nonperformance risk to the individual derivative instruments. However, if the reporting entity concludes through its qualitative analysis that the risk of nonperformance could impact its assessment of hedge effectiveness, the preparer must allocate the effect of nonperformance risk to the individual derivative hedging instruments and must consider that risk in evaluating hedge effectiveness.

This analysis does not affect the requirement to calculate and record the risk of nonperformance in the measurement of fair value. The qualitative assessment only applies to the allocation of the impact of nonperformance risk (e.g., credit risk adjustment) to derivative instruments included in master netting arrangements for the purpose of assessing hedge effectiveness. Reporting entities should perform and document their analysis in each reporting period.

PwC Observation: Although the SEC staff's comments were specific to assessing the effectiveness of fair value hedges for which the long haul method is used, we believe it is reasonable to apply the same approach to the assessment and measurement of cash flow hedges. In addition, we believe that a qualitative approach may be applied when evaluating the impact of nonperformance risk on the assessment of hedge effectiveness for all derivative instruments, not just those subject to master netting arrangements. However, in the absence of a master netting arrangement, the preparer will need to consider the nonperformance risk for each individual derivative position.

The impact of considering nonperformance risk may vary depending on the type of hedge (fair value versus cash flow hedge) and the method elected to test hedge effectiveness. As noted, we believe that a qualitative approach may be used to determine whether nonperformance risk for a portfolio of derivatives in a master netting arrangement will impact hedge qualification for the individual derivatives in the portfolio. This qualitative approach may be used for both fair value and cash flow hedges. Provided the reporting entity can support that nonperformance risk will not impact hedge qualification, the impact of that nonperformance risk does not need to be allocated for the purpose of assessing hedge effectiveness (for purposes of hedge qualification). However, if the reporting entity believes that nonperformance risk may impact hedge qualification, the impact of that nonperformance risk should be allocated in a reasonable and consistent manner. In addition, reporting entities must continue to measure and record ineffectiveness, considering the impact of changes in fair value due to nonperformance risk, based on the methodologies of assessing and measuring effectiveness and ineffectiveness.

For further discussion, see FV 9: Consideration of Credit Risk.

7.7.2 Hedge Accounting Considerations – IFRS

Cash Flow Hedges

Changes in the fair value of a derivative that arise from the credit risk of the entity or the derivative's counterparty have an impact on cash flow hedge effectiveness. When an entity determines the fair value of liabilities under IFRS 13, changes in fair value arising from the entity's non-performance risk will normally result in ineffectiveness. Although an entity's own credit risk would exist in a hedged liability, "own credit risk" is not typically designated as a portion of the risk being hedged. Accordingly,

the fair value of the hypothetical derivative would not vary because of changes in the entity's credit risk whereas the actual derivative would. The resulting mismatch between changes in fair value of the hypothetical derivative and hedging instrument would result in ineffectiveness. However, even if own credit risk was designated as part of the hedged item, it is unlikely that the changes in fair value will offset. For example, the hedged item may be an asset or the derivative may be collateralised and therefore the effect on fair value may not be the same.

IAS 39.AG109 indicates "... a hedge of interest rate risk using a derivative would not be fully effective if part of the change in the fair value of the derivative is attributable to the counterparty's credit risk." This is primarily driven by IAS 39.74, which does not permit excluding credit risk within the actual derivative from the hedging relationship.

A hypothetical derivative⁴ used to test effectiveness in a cash flow relationship is an example of a portion of the risk of a hedged item designated as part of a hedging relationship. Since the hedged item would not contain the derivative counterparty's credit risk, changes in fair value of the actual derivative due to credit risk will not be mirrored in the hypothetical derivative. The resulting mismatch between changes in fair value of the hypothetical derivative and hedging instrument results in ineffectiveness. Paragraph IG.F.5.2 of IAS 39 provides an example of accounting for ineffectiveness due to changes in the counterparty's credit risk. Therefore, both changes in the entity and counterparty's credit risk are likely to have an impact on cash flow hedge effectiveness.

Fair Value Hedges

Changes in the fair value of a derivative that arise from the credit risk of a derivative counterparty or the credit risk of the entity establishing the hedging relationship have an impact on fair value hedge effectiveness.

The fair value of the derivative hedging instrument is impacted by changes in counterparty credit risk (when an asset) and changes in an entity's own credit risk (when a liability). IAS 39.74 does not permit excluding credit risk within the actual derivative from the hedging relationship.

The fair value adjustment to the hedged item relates only to the risk being hedged. Typically, the designated risk being hedged will exclude the credit risk of the entity. Therefore, changes in the derivative's fair value related to credit will not be mirrored in the fair value hedging adjustment to the hedged item resulting in ineffectiveness.

Example 7-4: Fair Value Measurement—Cash Flow Hedge—U.S. GAAP & IFRS

Company Z, a manufacturing company, wishes to hedge the variability in cash flows associated with its 10-year variable rate debt. It decides to enter into a plain-vanilla, fixed-for-floating interest rate swap for 10 years. Company Z designates the interest rate swap as a cash flow hedge of the future interest payments on the debt. Company Z determines the fair value of the interest rate swap and whether it has any special considerations associated with the designated hedging relationship:

(continued)

⁴ The hypothetical derivative test is different under U.S. GAAP and IFRS.

Determine unit of account	The unit of account is the interest rate swap contract in accordance with ASC 815 and IAS 39.
Assess the principal or most advantageous market	There is a retail market and a wholesale market for this type of interest rate swap. Company Z does not have access to the wholesale swap market. Therefore, Company Z determines that the retail market is the appropriate market.
Determine valuation technique	<p>Company Z considers the use of each of the valuation techniques as follows:</p> <ul style="list-style-type: none"> • <i>Market approach</i>—Accommodation quotes are obtained from 2 dealers in the retail swap market. The company is able to test the underlying data used to prepare the quote and determine if it is reliable and based on market information. The quotes each indicate a fair value of \$9.8 million (liability). • <i>Income approach</i>—Company Z performs a discounted cash flow analysis based on available forward yield curves for plain-vanilla swaps of the same type. The analysis concludes that the fair value is \$10 million (liability), which includes a discount for nonperformance risk based on Company Z's credit characteristics. • <i>Cost approach</i>—As the analysis relates to a financial instrument, Company Z concludes the cost approach is not applicable.
Determine fair value	Due to the nature of the swap (i.e., plain vanilla terms for which there are similar swaps that price in active markets), Company Z determines that the market approach provides the best estimate of fair value. Accordingly, Company Z records the interest rate swap at a value of \$9.8 million (liability).
Hedge considerations under U.S. GAAP	<p>The impact on hedge accounting of applying the concepts of ASC 820 depend on the method used for measuring hedge ineffectiveness:</p> <ul style="list-style-type: none"> • If Company Z is using the change-in-variable-cash-flows method of ASC 815-30-35, <i>Derivatives and Hedging—Subsequent Measurement</i>, and the terms of the variable leg of the swap and the hedged item match (i.e., variable rate index, interest rate reset dates, no basis differences), credit risk will impact ineffectiveness only when default is probable. • If Company Z is using the hypothetical derivative method in ASC 815-30-35, and the terms of the hypothetical derivative match the terms of the actual derivative, credit risk will impact ineffectiveness only when default is probable. • If Company Z is using the change-in-fair-value-method under ASC 815-30-35, credit and nonperformance risk would be considered when determining the fair value of the swap in each period that ineffectiveness is measured. <p>Note: Under the first two scenarios, hedge effectiveness is generally not impacted by credit risk if it is probable that the counterparties will comply with the contractual provisions of the instrument. Credit risk more directly impacts hedge effectiveness under the third method; however, that is less commonly used in practice.</p>
Hedge considerations under IFRS	Under IFRS, because of the methods used to measure ineffectiveness, the reporting entity's own credit is more likely to have an impact on hedge effectiveness.

The example above is a fairly straightforward demonstration of the steps in calculating the fair value of a standard derivative instrument. Readers should refer to the various questions throughout FV 4: Concepts, as many of these issues are pertinent to derivatives. In addition, the following questions and interpretive responses address specific derivative-related application issues:

Question 7-4: Does the use of a model to value derivatives impact the classification within the fair value hierarchy?

PwC Interpretive Response

The level of a valuation using a widely accepted non-proprietary model will be determined by the nature of inputs that factor into the model and the relative significance of those inputs.

If the model is proprietary, then most likely the valuation will fall to a Level 3 measurement as its usefulness as a market value indicator is based on a significant judgment. Observability requires that the inputs and the methodology be widely accepted, which would not be the case with a proprietary model.

7.8 Margin Deposits and Collateral—U.S. GAAP⁵

Under ASC 815-10-45, a reporting entity may elect to report certain derivative assets and liabilities subject to a master netting arrangement on either a gross or net basis on the balance sheet. If a reporting entity elects net presentation, it is also required to net related collateral amounts, to the extent such amounts are reported at fair value.

The measurement and disclosure of any collateral presented at fair value is subject to ASC 820. In accordance with ASC 820, each fair value measurement is classified and disclosed in its entirety within one of three levels in the fair value hierarchy in a tabular format. The amounts in each level for each type of asset and liability within the fair value table should total the related amount recognised on the balance sheet (e.g., the total of amounts in Levels 1, 2, and 3 for derivative assets should equal the balance of derivative assets on the balance sheet).

If a reporting entity has elected gross presentation and derivative assets, derivative liabilities, and collateral amounts are presented separately on the balance sheet, it is appropriate to also include these amounts separately in the reporting entity's ASC 820 tabular disclosures. Collateral balances recorded at fair value should be disclosed within the appropriate levels of the fair value hierarchy.

In determining the appropriate disclosure of such amounts within the fair value hierarchy, a reporting entity should consider whether the collateral should be separately classified (most likely as Level 2 due to the nature of most collateral balances) or classified as part of the net derivative balance.

⁵ Under IFRS, derivatives and collateral are two separate units of account that are generally not permitted to be netted. Hence, the collateral would only affect the derivative's fair value by reducing nonperformance risk.

ASC 820-10-35-18 states, in part:

When measuring the fair value of a liability, a reporting entity shall take into account the effect of its credit risk (credit standing) and any other factors that might influence the likelihood that the obligation will or will not be fulfilled. That effect may differ depending on the liability, for example:

- a. whether the liability is an obligation to deliver cash (a financial liability) or an obligation to deliver goods or services (a nonfinancial liability)
- b. terms of credit enhancements related to the liability, if any. Emphasis added.

The basis for allowing the offset of fair values of receivables and payables against the related fair values of the derivative positions under master netting arrangements is that netting reflects the overall credit exposure under the arrangement. In addition, when valuing derivative liabilities, credit risk and related credit enhancements (e.g., deposits) are considered to be an important part of the fair value of the liability. Therefore, it would be appropriate for a reporting entity that elects a net presentation in the balance sheet to treat the net balance as a single unit of account for purposes of classifying the total balance within the fair value hierarchy.

However, practice has evolved to generally include collateral as a separate item reported in the table as a reduction of the total derivative assets or liabilities it supports. We have accepted this view and believe the expanded disclosures provide readers with an appropriate level of information to understand the gross and net derivative position.

7.9 Long-Term Debt

Application of the fair value standards to liabilities in general is addressed in FV 4.1.6.1.

Long-term debt may be reported at amortised cost or at fair value. If the fair value option provided by ASC 825 and IAS 39/IFRS 9 is elected, that fair value measurement must be performed in accordance with the fair value standards. Certain of the fair value standards' disclosure requirements apply whether amortised cost or fair value is the basis of reporting.

Under the fair value standards, the fair value of debt should not be based on a settlement or extinguishment value (e.g., amortised cost, adjusted for the deferred transaction costs and premiums/discounts). Instead, the fair value measurement under the fair value standards assumes the debt will be transferred and continue to exist. The fair value measurement will be evaluated from the perspective of a market participant that holds the identical item as an asset at the measurement date.

The following table provides a summary of key aspects of measuring the fair value of long-term debt under the fair value standards:

Exhibit 7-3: Long-Term Debt Under the Fair Value Standards

Key considerations—basis of valuation	Fair value is measured based on the amount that would be paid to transfer the liability to a credit-equivalent market participant at the measurement date.
Key considerations—nonperformance risk	Nonperformance risk must be incorporated into the fair value measurement based on current market conditions; credit enhancements (e.g., guarantees) may impact valuation.
Disclosures	Long-term debt recorded at fair value through the fair value option in ASC 825-10-25 and IAS 39.9 or IFRS 9.4.2.2, or for which fair value is disclosed under ASC 825-10-50 and IFRS 7.25, must comply with the fair value standards' disclosure requirements (see also Question 5-4 and FV 5: Disclosures).

7.9.1 Long-Term Debt—Valuation Considerations

For most actively-traded debt, there is a rebuttable presumption that material differences do not exist between a settlement value (i.e., purchase in an open market) and a transfer-based fair value measurement. Market participants similar to the issuer should be indifferent between assuming the issuer's liability and issuing identical debt. However, specific facts and circumstances may support differences in fair value and settlement-based measurements. ASC 820-10-05-1C and IFRS 13.3 provide guidance that in circumstances in which a price in an active market for the identical liability is not available, a reporting entity measures fair value using a valuation technique that maximises the use of relevant observable inputs and minimises the use of unobservable inputs.

Such valuation techniques could include:

1. A valuation technique that uses:
 - a. The quoted price of the identical liability when traded as an asset.
 - b. Quoted prices for similar liabilities or similar liabilities when traded as assets.
2. Another valuation technique that is consistent with the principles of the fair value standards. Two examples would be an income approach, such as a present value technique, or a market approach, such as a technique that is based on the amount at the measurement date that the reporting entity would pay to transfer the identical liability or would receive to enter into the identical liability.

ASC 820-10-35-16 and IFRS 13.34 make clear that when estimating the fair value of a financial liability or an instrument classified in shareholders' equity, the transfer of the liability assumes that a liability would remain outstanding and the market participant transferee would be required to fulfill the obligation. The liability would not be settled/cancelled or otherwise extinguished.

The effort required to measure fair value will often be greater with private debt (e.g., private placement or borrowing arrangements entered into directly with a bank). Nonperformance risk (including credit risk) relating to the private debt of the reporting entity must be incorporated into the fair value measurement. When measuring the fair value of private debt, a reporting entity may use prices available for its own existing public debt (or public debt of other similar reporting entities with the same credit standing), with the same key terms, as a starting point. However, any adjustments necessary to take into account market participant assumptions about nonperformance or other risks (such as model risk) are required. Because pricing inputs for nonpublic debt may not be observable, nonpublic debt may often be classified as a Level 3 fair value measurement in the fair value hierarchy.

7.10 Employee Benefit Plans

7.10.1 Employee Benefits

Under IFRS, IAS 19 provides guidance on employers' accounting and reporting for benefit plans, and IAS 26 provides guidance for accounting and reporting in the financial statements of retirement benefit plans where such financial statements are prepared. In accordance with IAS 19 and IAS 26, plan assets shall be measured at fair value.

Under U.S. GAAP, ASC 715, *Compensation—Retirement Benefits*, provides guidance on employers' accounting and reporting for pension and other postretirement benefits, and ASC 960, *Plan Accounting—Defined Benefit Pension Plans*, provides guidance for accounting and reporting in the separate plan financial statements. In accordance with ASC 715 and ASC 960, plan investments—including equity and debt securities, real estate, and other investments—should be measured at fair value.

The fair value standards generally require the use of their definition of fair value in the measurement of plan assets. The fair value standards do not apply to the measurement of pension and other postretirement benefit obligations because the liabilities for those obligations are not measured at fair value.

7.10.2 Postemployment Benefits—U.S. GAAP

We believe that employers who provide postemployment benefits accounted for under ASC 712, *Compensation—Nonretirement Postemployment Benefits*, and have set aside assets to fund the ASC 712 liability, should apply ASC 820's fair value measurement principles if those assets are required to be measured at fair value under other applicable GAAP. This would be the case if the assets are subject to the fair value measurement requirements of ASC 320 or if the employer follows the guidance in ASC 715 when applying ASC 712 and therefore treats the assets as plan assets that are required to be reported at fair value under those standards.

Application of the fair value standards to plan assets is as follows.

Exhibit 7-4: Plan Assets Under the Fair Value Standards

Costs to sell under U.S. GAAP	Measurement is at fair value with no incremental adjustments for costs to sell if those costs are significant.
Key valuation considerations—public equity and debt securities	<p>Price times quantity held, if quoted prices in active markets are available. Points to consider include:</p> <ul style="list-style-type: none"> • Prohibition from recognition of blockage discounts (see FV 4.5.1.3, which includes discussion of prohibition on blockage factors for all fair value measurements). • Fair value of restricted assets should be adjusted to reflect the discount, if any, a market participant would require as a result of the restriction (see FV 4.6). • Policy related to mid-market pricing convention (see Question 4-15).
Key valuation considerations—alternative investments under U.S. GAAP	<ul style="list-style-type: none"> • Under U.S. GAAP, apply the practical expedient to measure fair value using NAV, without adjustment, when certain criteria are met. • When the practical expedient is not available, the following considerations should be made: <ul style="list-style-type: none"> – Income, cost, or market valuation technique(s) should be used as appropriate. – Will require consideration of principal or most advantageous market; determination of market participants may impact conclusions. – Requires use of market participant assumptions and a determination of highest and best use.
Disclosures	<ul style="list-style-type: none"> • Under U.S. GAAP, ASC 820 indicates that plan assets of a defined benefit pension or other postretirement benefit plans that are accounted for in accordance with ASC 715 are not subject to the disclosure requirements of ASC 820 but are instead subject to the disclosures in ASC 715. • Under IFRS, IFRS 13.7 indicates that its fair value disclosures are not required for plan assets measured at fair value under IAS 19 and retirement benefit plan investments measured at fair value under IAS 26. However, IAS 19 requires certain disclosures with regard to the fair value of plan assets, e.g., a disaggregation of the fair value of the plan assets into classes that distinguish the nature and risks of those assets, subdividing each class of the plan asset into those that have a quoted market price in an active market (as defined in IFRS 13) and those that do not. • For more information on fair value disclosures for pensions plans, see FV 5: Disclosures.

In evaluating the impact of the fair value standards on plan assets, a reporting entity should consider the following guidance:

Publicly-Traded Equity and Debt Securities

In valuing plan investments in publicly-traded equity and debt securities, a reporting entity should ensure that it appropriately complies with the requirements of the fair value standards, including consideration of the following:

Bid-Ask Spread: As noted in FV 4.5.4, a reporting entity should have a consistent policy for measuring the fair value of plan assets based on a bid-ask spread.

Blockage Factor: The fair value standards preclude the application of blockage factors. See FV 4.5.1.3.

Restricted Securities: If a reporting entity holds a security that has restrictions on its sale or transferability (i.e., a restricted security), the fair value measurement should be adjusted to reflect the discount a market participant would require as a result of the restriction, regardless of the duration of the restriction. The fair value would only be adjusted if the restriction is not considered entity specific, see FV 7.1.2.3 for further discussion.

Other Real Estate-Related Investments—U.S. GAAP

Certain real estate investments may be held in fund investment structures that are reported at NAV. See FV 7.1.2.5 for valuation considerations for fund investments, open-ended mutual funds, alternative investment funds, and private equity funds. A practical expedient to measure fair value at NAV, without adjustment, is available to investments that meet certain criteria. When the practical expedient is not utilized, some employers may need to reconsider their estimates of fair value in cases where illiquid investments such as real estate, are a significant component of plan assets. See additional discussion of specific considerations related to valuations prepared using unobservable inputs in FV 4.5.3.

There are certain investment arrangements common to plans such as investments in master trusts or separate (not pooled) accounts which may appear to operate as a fund vehicle, but the plan's trust actually owns the underlying investments of the vehicle. For such arrangements, the fair value of the underlying investments would be the appropriate starting point when determining the fair value measurement. In these investments, employers and plan management need to carefully consider the terms of the investment arrangement to understand whether they have an interest in the underlying assets or in a pooled fund vehicle.

Transaction Costs—U.S. GAAP

ASC 820 states that the fair value of an asset or liability generally should not be adjusted for transaction costs; however, ASC 820 also states that transaction costs should be accounted for in accordance with the provisions of other accounting pronouncements. ASC 715 specifies that the fair value of plan assets should be reduced by brokerage commissions and other costs normally incurred in a sale, if those costs are significant. Therefore, employers and plan sponsors should reduce the fair value of plan assets by such “selling costs” if those costs are significant.

PwC Observation: Many employers and plans in the U.S. use information provided by third parties as part of their process for developing fair value estimates. Because employers and plan management are ultimately responsible for the valuations (even in a limited-scope ERISA audit), they should develop an understanding of the valuation methodology and practices by those third parties. Employers and plan management should also develop an understanding of the planned approach of their third party information providers to generate the information required to meet the new disclosures, including their methodology for determining the appropriate classification within the fair value hierarchy. The AICPA Employee Benefit Plans Audit Quality Center Advisory, *Valuing and Reporting Plan Investments*, may help plan management understand their responsibilities regarding valuation and reporting of investments.

Other considerations related to the impact of ASC 820 on benefit plans include the following.

Question 7-5: How does ASC 820 apply to employers that report certain investments in insurance contracts held by pension and postretirement benefit plans under U.S. GAAP?

PwC Interpretive Response

ASC 715-30-35-60 addresses the fair value of investment contracts with insurance companies as follows:

Insurance contracts that are in substance equivalent to the purchase of annuities shall be accounted for as such. Other contracts with insurance entities shall be accounted for as investments and measured at fair value. For some contracts, the best available evidence of fair value may be contract value. If a contract has a determinable cash surrender value or conversion value, that is presumed to be its fair value.

In accordance with this guidance, certain contracts with insurance companies that are held by pension plans should be accounted for at fair value. ASC 820 allows practicability exceptions to fair value measurements provided by other applicable GAAP. The guidance in ASC 715-30-35-60 allows a reporting entity, as a practical expedient, to use cash surrender value or conversion value as an expedient for fair value when it is present. When measuring the fair value of these contracts, we believe that reporting entities should follow the guidance in ASC 715-30-35-60. ASC 715-60-35-120 also contains a similar practical expedient.

Question 7-6: How should employee benefit plans reporting under U.S. GAAP apply the exit price concept when determining the fair value of participant loans under ASC 820?

PwC Interpretive Response

Certain employee benefit plans (e.g., defined contribution plans) allow plan participants to borrow against their vested account balance. These loans are referred to as participant loans. Such participant loans are an extension of credit to a plan participant by the plan, in accordance with the plan document or the plan's written loan policy. The loan is secured by the participant's vested account balance. Unlike other plan investments, participant loans are related party transactions and cannot be sold, and their value is represented as the amount due to be received at any point in time. The 2012 version of the AICPA Audit and Accounting Guide, *Employee Benefit Plans* (the "Benefit Plan Guide") provides guidance on participant loans. It states that in accordance with ASC 962-310-45-2, for reporting purposes, participant loans should be classified as notes receivable from participants. Participant loans should be measured at their unpaid principal balance plus any accrued but unpaid interest in accordance with ASC 962-310-35-2. In addition, ASC 962-310-50-1 states that the fair value disclosures prescribed in paragraphs 10–16 of ASC 825-10-50 are not required for participant loans.

**Chapter 8:
Application to Nonfinancial Assets, Nonfinancial
Liabilities and Business Combinations**

Chapter 8: Application to Nonfinancial Assets, Nonfinancial Liabilities, and Business Combinations

This chapter highlights key considerations in applying the fair value standards to develop fair value measurements required for nonfinancial assets and nonfinancial liabilities, including for recurring measurements and impairments and for all types of assets in business combinations. Reporting entities should read this guidance in connection with FV 4: Concepts and Chapters 7, 10, 11 and 12 of PwC's *A Global Guide to Accounting for Business Combinations and Noncontrolling Interests (BC)*.

8.1 Measuring Nonfinancial Assets and Nonfinancial Liabilities

The most significant concepts that apply to fair value measurements of nonfinancial assets and liabilities are as follows:

- Use of market participant assumptions.
- Determining the appropriate market.
- Highest and best use.
- Application of valuation techniques.

Each of these topics is discussed below.

8.1.1 Use of Market Participant Assumptions

The fair value standards emphasise that fair value is a market-based measurement, not an entity-specific measurement. The fair value of an asset or liability should be determined based on an exit price as if a transaction involving the asset had occurred on the measurement date, considered from the perspective of a market participant.

Identifying potential market participants, developing market participant assumptions, and determining the appropriate valuation premise for nonfinancial assets (as discussed in FV 4.1.5) are critical components in developing fair value measurements of nonfinancial items. Certain assets measured at fair value, such as real estate and many biological assets, have established markets. In the absence of such markets, a hypothetical market and market participants must be considered. While many times an identical asset does not exist, there are often similar assets whose transactions should be considered in developing market participant assumptions. Significant judgment is required to develop the assumptions to be used in the hypothetical "exit" transaction.

Key considerations in developing market participant assumptions include the specific location, condition, and other characteristics of the asset or liability (such as assumed growth rates, whether certain synergies are available to all market participants, and risk premium assumptions). For example, there may be no apparent exit market for customer relationship intangible assets. In this case, management may consider whether there are strategic buyers in the marketplace that would benefit from the customer relationships that are being valued. Most entities seek to build up their customer base as they grow their businesses, so the entity can look to potential participants in its industry that may be seeking additional growth and from there determine a hypothetical group of market participants.

In developing market participant assumptions relating to synergies, only synergies that can be realised by more than one market participant can be considered. For

example, if there was a business combination in which the acquiring company had a unique technology with significant synergy with the technology of the acquired company, the valuation of the technology would be from the perspective of market participants. If market participants did not have technology that had synergy with the acquired technology, the synergy benefits would not be used in valuing the acquired technology.

8.1.1.1 Identifying Market Participants

The first step in developing market participant assumptions is identification of potential market participants—who would be interested in and could benefit from ownership of a specific asset or liability?

As described in ASC 820-10-35-9 [and IFRS 13.23], in developing market participant assumptions:

... the reporting entity [entity] need not identify specific market participants. Rather, the reporting entity [entity] shall identify characteristics that distinguish market participants generally, considering factors specific to all of the following:

- a. The asset or liability.
- b. The principal (or most advantageous) market for the asset or liability.
- c. Market participants with whom the reporting entity would enter into a transaction in that market.

In identifying potential market participants for purposes of measuring the fair value of nonfinancial assets and liabilities, the reporting entity should determine the most likely buyer(s). Market participants could be strategic buyers, financial buyers, or both.

- **Strategic buyers:** Strategic buyers could include the acquirer's peers or competitors, or an entity seeking to diversify its operations. Typically, strategic buyers will have synergies specific to their existing operations, and may have the ability and willingness to transact for the same assets and liabilities.
- **Financial buyers:** Other buyers, including those who have no ownership interests in businesses or operations similar to that of the acquirer, may also be considered market participants in certain situations. These market participants, commonly referred to as financial buyers, may include individual investors, private equity and venture capital investors, and financial institutional investors.

A reporting entity should consider whether strategic buyers would be interested in the asset or liability, or whether financial buyers looking to arbitrage or trade on the asset or liability would be the most likely market participants. In some cases, both types of market participants could be interested and the reporting entity will need to conclude which group is the appropriate market participant. In many sectors, financial buyers have become strategic buyers and thus the distinction between the two groups in those sectors has largely disappeared.

The applicable market participants may change over time; therefore, a reporting entity should reconsider potential market participants each time a fair value measurement is performed. For example, financial buyers may have been identified as market participants in a previous fair value measurement because they were active in a specific market, such as the purchase of a retail business. However, if

strategic buyers become active in acquiring the assets or liabilities being measured, they may become appropriate market participants to consider in the fair value measurement as it becomes more likely that they would transact in the current market.

In determining potential market participants, reporting entities will also need to separately evaluate each asset or liability subject to fair value measurement, as potential market participants will vary. For example, in performing the fair value measurements after a business combination, the reporting entity will need to evaluate market participants for the individual assets acquired and liabilities assumed in the acquisition (although in some cases, the highest and best use may be in combination with other assets and liabilities).

For recently acquired assets and liabilities, the transaction price may be a starting point in the analysis of fair value. For example, in a business combination, a starting point for determining market participant assumptions may be the acquirer. Since the acquirer successfully purchased the target company, it could look to itself to determine if it possesses unique characteristics, or whether such characteristics are similar to its competitors (strategic buyers) or financial buyers. Reporting entities can also look to the other bidders in a bidding process in assessing whether the acquirer is representative of a market participant.

In the absence of this type of transparency, a reporting entity will need to determine the characteristics or profile of potential market participants as discussed above.

Other key considerations in developing market participant assumptions may include the specific location, condition, and other characteristics of the asset or liability (e.g., assumed growth rates or whether certain synergies are available to all market participants). See further discussion of determination of market participants in FV 4.1.3.

8.1.2 Determining the Appropriate Market

An important step in the valuation of nonfinancial assets and nonfinancial liabilities is the determination of the market in which the pricing inputs and hypothetical transaction will be determined. If there are no known markets or if the reporting entity does not have access to any markets, it should identify potential market participants and develop a hypothetical market based on the expected assumptions of those potential market participants.

In developing a market for a specific asset or liability, a reporting entity should evaluate how the asset could be sold or the liability transferred. In making this evaluation, a reporting entity should research existing markets to determine the types of markets that exist for the asset or liability, or similar assets or liabilities if no direct inputs are available. The initial evaluation may be performed without regard to whether the reporting entity has access to a specific market. Although an inaccessible market cannot be used as a principal or most advantageous market, information related to such markets may be considered in developing the inputs that would be used in a hypothetical market. For example, assume the existence of a market for buying and selling internet domain names. Although this may not be a principal or most advantageous market for a reporting entity, it provides a reference point for the valuation of domain names.

In addition, reporting entities may consider information about markets for similar assets or liabilities or markets for assets with similar economic characteristics with

which it has more experience. Assumptions about markets and market participants will involve judgment and management will need to consider all reasonably available information when developing inputs for measures with few or no reference points.

8.1.3 Highest and Best Use

The highest and best use is the use by market participants that maximises the value of the asset or group of assets and liabilities. The concept refers to both the different ways of utilising the individual asset (e.g., a factory or residential site) as well as whether the maximum value is on a standalone basis or in combination with other assets. The fair value standards indicate that the highest and best use does not consider management's intended use.

Ways of Utilising the Individual Asset

The determination of highest and best use may have a significant impact on the fair value measurement. ASC 820, Example 1, Case B (ASC 820-10-55-30 through 55-31) and IFRS 13, Illustrative Example 2 (IFRS13.IE7-IE8) illustrate the application of this concept to land acquired in a business combination. In the example, the land is currently used for a factory, but could be developed as a residential site. The highest and best use is determined by the greater of (1) the value of the land in continued use for a factory (in combination with other assets) or (2) the value of the land as a vacant site for residential development (taking into account the cost to demolish the factory and including uncertainty about whether the reporting entity can convert the asset to the alternative use).

Standalone or in Combination

If the highest and best use of an asset is that it should be combined with other assets, one combined fair value may need to be determined. That combined fair value must then be allocated to the individual components based on the unit of account of each.

ASC 820-10-35-11A [and IFRS 13.32] state:

The fair value measurement of a nonfinancial asset assumes that the asset is sold consistent with the unit of account specified in other Topics [IFRSs] (which may be an individual asset). That is the case even when that fair value measurement assumes that the highest and best use of the asset is to use it in combination with other assets or with other assets and liabilities because a fair value measurement assumes that the market participant already holds the complementary assets and associated liabilities.

If an entity uses an asset under circumstances that are not the highest and best use for that asset, it must disclose that fact. See FV 5.1.1.

Example 8-1: Investment Property—Highest and Best Use

An entity owns an investment property, which comprises land with an old warehouse on it. It has been determined that the land could be redeveloped into a leisure park. The land's market value would be higher if redeveloped than the market value under its current use. Management is unclear about whether the investment property's fair value should be based on the property's (land and warehouse) market value under its current use, or the land's potential market value if the leisure park redevelopment occurred (its highest and best use).

The property's fair value should be based on the land's market value for its potential use. The highest and best use is used as the most appropriate model for fair value. Using this approach, the property's existing use value is not the only basis considered. Fair value is the highest value, determined from market evidence, by considering any other use that is financially feasible, justifiable, and reasonably probable.

The highest and best use valuation assumes the site's redevelopment. This will involve demolishing the current warehouse and constructing a leisure park in its place. Therefore, none of the market value obtained for the land should be allocated to the building. The market value of the current building based on the property's highest and best use (as a warehouse) is therefore zero. The building's current carrying amount should, therefore, be written down to zero.

Example 8-2: Valuing Assets on a Standalone Basis or in a Group—Land

Three adjacent lots of land are acquired as part of a business combination. In this area, land is typically sold in lot sizes on which a building could be raised.

Standalone: Each lot could be sold separately for \$5 million.

In a Group: The end lots could each raise a building, each of which shares a parking lot (taken from the third lot). In this area, parking is very scarce and buildings with parking sell for higher prices than buildings without parking. With the parking lot, each building would sell for a higher price; the three lots together can be sold for \$20 million.

Highest and Best Use: The highest and best use of these lots is to develop them as buildings with a parking lot. A market participant would take the center lot and use it as a parking lot for the two buildings. Since the three lots could be sold for \$20 million, the fair value is \$20 million.

Example 8-3: Valuing Assets on a Standalone Basis or In a Group—Other Assets

A pharmaceutical company acquires a company with two drugs. Drug A is a cholesterol lowering drug. By itself, Drug A is moderately effective. Drug B is another moderately effective cholesterol lowering drug. When taken together, Drug A and Drug B are highly effective at lowering cholesterol levels.

Standalone: On a Standalone basis, Drug A has a fair value of \$100 million and Drug B has a fair value of \$150 million.

In a Group: When the drugs are valued together, Drug A and Drug B have a combined fair value of \$650 million.

Highest and Best Use: The highest and best use of these drugs is to sell the products together. As a result, the total fair value of Drug A and Drug B should equal \$650 million. The value should be allocated to Drug A and Drug B (units of account) in a systematic and rational way. Often, a relative fair value method would be used.

8.1.4 Application of Valuation Techniques

The fair value standards require consideration of three broad valuation techniques: market approach, cost approach, and income approach. The fair value standards do not prescribe which valuation technique(s) should be used when measuring fair value and do not prioritize among the techniques. Instead, the fair value standards state that reporting entities should measure fair value using the valuation technique(s) that are appropriate in the circumstances and for which sufficient data are available. See further discussion of the application of valuation techniques in FV 4.3.

The fair value standards distinguish between (1) observable inputs, which are based on market data obtained from sources independent of the reporting entity and (2) unobservable inputs, which reflect the reporting entity's own assumptions. The fair value standards emphasize that a fair value measurement should maximize observable inputs and minimize unobservable inputs. This may affect the reporting entity's decision to use the market approach, income approach, or cost approach.

The application of the various techniques may indicate different estimates of fair value. These estimates may not be equally representative of the exit price, due to factors such as assumptions made in the valuation or the quality of inputs used. In cases in which multiple valuation techniques are used, the reporting entity will need to evaluate the quality of the measurements and weigh the results, as appropriate, developing a range of possible results. The reporting entity may need to apply additional diligence in the valuation if the range of values is wide. Fair value will be based on the most representative point within the range in the specific circumstances. If there is a wide range of estimates, a simple average is unlikely to be the most representative point within the range.

8.2 Measuring the Fair Values of Nonfinancial Assets and Nonfinancial Liabilities

8.2.1 Fair Value of Tangible Assets

The fair value of certain tangible assets (e.g., land and buildings) is established using the market approach or the income approach because there is usually available market data for sales and rentals of land and buildings. In the rare instances in which an entity is valuing land and buildings for which there is no market data for sales or rentals, the depreciated replacement cost approach may be used to measure fair value, although not for impairment testing under IAS 36.

The fair value of other tangible assets, such as specialised properties or plant and equipment, is often measured using the replacement-cost method or the cost approach. This represents the highest value that a market participant would pay for an asset with similar utility. The cost approach is based on the principle of substitution. It uses the cost to replace an asset as an indicator of the fair value of that asset. To determine the appropriate substitute asset or asset group as a measure of fair value, the utility of the replacement asset is compared to the utility of the asset being measured. Comparable utility implies similar economic satisfaction, but does not necessarily require that the substitute asset be an exact duplicate of the asset being measured. The cost of an exact duplicate is referred to as reproduction cost. The substitute asset is perceived as equivalent if it possesses similar utility and, therefore, serves as a measure of fair value of the asset being valued.

Typically, the first step in the cost approach is to identify the asset's original cost. The next step is to adjust the original cost for changes in price levels between the asset's original in-service date and the date of the valuation to measure its replacement cost new. Replacement cost new represents the indicated value of current labour and materials necessary to construct or acquire an asset of similar utility to the asset being measured.

Next, adjustments are made to replacement cost new to reflect any losses in value due to physical deterioration or functional obsolescence of the asset, which results in the value of replacement cost new less depreciation. Physical deterioration represents the loss in value due to the decreased usefulness of a fixed asset as the asset's useful life expires. This can be caused by factors such as wear and tear, deterioration, physical stresses, and exposure to various elements.

Excessive physical deterioration may result in an inability to meet production standards or in higher product rejections as the tolerance on manufacturing equipment decreases. Higher than average maintenance expenditure requirements may also suggest higher levels of physical deterioration. However, below average maintenance expenditures may also indicate higher levels of physical deterioration due to inadequate or deferred maintenance.

Functional obsolescence represents the loss in value due to the decreased usefulness of a fixed asset that is inefficient or inadequate relative to other more efficient or less costly replacement assets resulting from technological developments. Functional obsolescence is observed in several different forms. If the subject asset has higher operating costs relative to a new asset, this may indicate a form of functional obsolescence. If in developing an asset's replacement cost new, that replacement cost is less than its reproduction cost, this may also be indicative of a form of functional obsolescence. The objective of the measurement is to identify the replacement cost of a modern equivalent asset.

Physical and functional obsolescence are direct attributes of the asset being valued. However, to provide an indication of the fair value of the asset being measured, further adjustment may be necessary to “replacement cost new less depreciation” for loss in value due to economic obsolescence. Economic obsolescence represents the loss in value due to the decreased usefulness of a fixed asset caused by external factors, independent from the characteristics of the asset or how it is operated. Increased cost of raw materials, labour, or utilities that cannot be offset by an increase in price due to competition or limited demand; as well as a change in environmental or other regulations, inflation, or high interest rates, may suggest the presence of economic obsolescence.

The fair value standards permit the fair value of certain tangible assets to be measured using the replacement-cost method. However, there may be instances or industry practice in which certain tangible assets are measured using an income or market approach. An example is the measurement of a power plant in the energy sector, which often has few, if any, intangible assets other than the embedded licence. The cash flows from the plant reflect only the economic benefits generated by the plant and its embedded licence. Management should consider other U.S. GAAP or IFRS to determine whether the assets measured together need to be accounted for separately. This could result in a fair value measurement above the replacement cost. In this situation, management should consider whether any of the difference relates to other assets included in the cash flows, such as customer or contractual assets that could be separately recognised.

Question 8-1: What are the considerations in determining the appropriate valuation methodology when assessing long-lived assets to be held and used?

PwC Interpretive Response

A reporting entity will first need to consider the valuation premise associated with the unit of account being measured. Valuation technique(s) appropriate in the circumstances should be evaluated with consideration of the market, cost, and income approaches when determining fair value for impairment test purposes. Finally, valuation inputs must be determined for each appropriate valuation technique. For example, a market approach may be appropriate if the reporting entity has recently purchased or sold similar assets or if there have been other recent sales of similar assets, with public disclosure of sale terms. If a reporting entity determines that the income approach is appropriate, it will need to ensure that market participant assumptions are utilised. It should make any necessary modifications to entity specific cash flows.

Question 8-2: Where are fair value measurements based on real estate appraisals and similar valuation techniques classified within the fair value hierarchy?

PwC Interpretive Response

The level of a real estate appraisal within the fair value hierarchy will vary by the type of asset and the inputs. For example, a multi-unit condominium development in which each unit has similar floor plans, features, and few differentiating characteristics, may be measured using an appraisal based on a market approach that incorporates an observable dollar-per-square-foot multiple. As long as the multiple is observable and the reporting entity does not make any significant adjustments using unobservable data, the valuation would represent a Level 2 fair value measurement.

However, the valuation of many real estate assets—such as office buildings, shopping centers, hospitals, manufacturing facilities, and similar build-to-suit facilities—may require adjustments to market-based valuation inputs to reflect the different characteristics between the assets being measured and the assets upon which the observable inputs are based. These adjustments could result in classification as a Level 3 fair value measurement for the real estate asset. Real estate assets may also be measured using an income approach based on unobservable cash flows to be received from expected rents and expenses, which would likely also yield a Level 3 fair value measurement.

In considering information from appraisals, the reporting entity should ensure that the third-party valuation specialist appropriately evaluates and documents assumptions used to determine the highest and best use of the asset.

Refer to FV 4.3 and FV 4.4 for further discussion of available valuation techniques and evaluation of related inputs.

8.2.2 Fair Value of Intangible Assets

Few intangible assets are traded in an active market. When they are, fair value will be measured by reference to the quoted price of an identical asset and will be a Level 1 measurement. When they are not traded, the reporting entity will need to use a valuation technique such as those discussed below.

8.2.2.1 Income Approach for Intangible Assets

The income approach is a valuation technique used to convert future cash flows to a single discounted present value amount. It is discussed in FV 4.3.3.

The most common variations of the income approach, along with the types of intangible assets they are typically used to measure, include:

Multi-period excess earnings method	Customer relationships and enabling technology
Relief-from-royalty method (RFR)	Trade names, brands, and technology assets
Greenfield method	Federal Communications Commission and other long-lived government licences
With and without method	Non-compete agreements, customer relationships

The cost savings and premium profit methods are other ways to value intangible assets but are used less frequently. The following sections describe the most common variations of the income approach, as well as their common application to specific intangible assets.

8.2.2.2 Income Approach for Intangible Assets—The Multi-Period Excess Earnings Method

The multi-period excess earnings method (MEEM) is a commonly used method for measuring the fair value of intangible assets. The fundamental principle underlying the MEEM is to isolate the net earnings attributable to the asset being measured. Cash flows are generally used as a basis for applying this method. Specifically, an intangible asset's fair value is equal to the present value of the incremental after-tax cash flows (excess earnings) attributable solely to the intangible asset over its remaining useful life.

Intangible assets are generally used in combination with other tangible and intangible assets to generate income. The other assets in the group are often referred to as “contributory assets,” as they contribute to the realisation of the intangible asset’s value. To measure the fair value of an intangible asset, its projected cash flows are isolated from the projected cash flows of the combined asset group over the intangible asset’s remaining economic life. Both the amount and the duration of the cash flows are considered from a market participant’s perspective.

The fair value measurement of an intangible asset starts with an estimate of the expected net income of a particular asset group. “Contributory asset charges” or “economic rents” are then deducted from the total net after-tax cash flows projected for the combined group to obtain the residual or “excess earnings” attributable to the intangible asset. The contributory asset charges represent the charges for the use of an asset or group of assets (for example, working capital, fixed assets, trade names) and should be considered for all assets, excluding goodwill, that contribute to the realisation of cash flows for a particular intangible asset. The excess cash flows are then discounted to a net present value. The net present value of any tax benefits associated with amortising the intangible asset for tax purposes (where relevant) is added to arrive at the intangible asset’s fair value.

The contributory asset charges are calculated using the assets’ respective fair values and are conceptually based upon an earnings hierarchy or prioritisation of total earnings ascribed to the assets in the group. The earnings hierarchy is the foundation of the MEEM in which earnings are first attributed to a fair return on contributory assets, such as investments in working capital, and property, plant, and equipment. These are considered a prerequisite to developing the ability to deliver goods and services to customers, and thus their values are not included as part of the intangible asset’s value.

The return or charge for each asset should be based upon comparable market rates, which reflect the amount market participants would charge for the use of the asset (that is, a “market-derived rent”). In addition, contributory assets may benefit a number of intangible and other assets. The total return or charge earned by a particular asset should be distributed among the assets that benefit from its use. Therefore, in determining the fair value of intangible assets, a capital-intensive manufacturing business should have a higher contributory asset charge from fixed assets (in absolute terms) than that of a service business.

Terminal values are not appropriate in the valuation of a finite-lived intangible asset under the income approach. However, it is appropriate to add a terminal value to a discrete projection period for indefinite-lived intangible assets, such as some trade names.

The key assumptions of the MEEM, in addition to the projected cash flows over the asset’s remaining useful life, are as follows and are discussed in the subsequent sections:

- Discount rates, including reconciling rates of return.
- Application of contributory asset charges.
- Tax amortisation benefits.

8.2.2.2.1 MEEM—Discount Rates for Intangible Assets

An appropriate discount rate is an important factor in a multi-period excess earnings analysis, whether using expected (that is, probability adjusted) or conditional (that is, management's best estimate) cash flows. It is generally recognised by valuation practitioners that the total cash flows attributable to a group of assets can be disaggregated according to the varying levels of risk associated with the cash flows generated by the asset groups.

The discount rate should reflect the risks commensurate with the intangible asset's individual cash flow assumptions. Some intangible assets, such as order or production backlog, may be assigned a lower discount rate relative to other intangible assets, because the cash flows are more certain. Other intangible assets, such as technology-related and customer relationship intangible assets, are generally assigned higher discount rates, because the projected level of future earnings is deemed to have greater risk and variability. While discount rates for intangible assets could be higher or lower than the entity's weighted average cost of capital (WACC), they are typically higher than discount rates on tangible assets.

The WACC represents the average expected return from the business (that is, all the assets and liabilities used collectively in generating the cash flows of the entire business) for a market participant investor, and includes an element to compensate for the average risk associated with potential realisation of these cash flows. The internal rate of return (IRR) in a business combination represents the implied return from the transaction that may include acquirer-specific elements.

Conceptually, the WACC applicable for the acquiree should be the starting point for developing the appropriate discount rate for an intangible asset. The WACC and the IRR should be equal when the projected financial information (PFI) is market participant expected cash flows and the consideration transferred equals the fair value of the acquiree. However, circumstances arise in practice when the WACC and the IRR are not equal, creating the need for further analysis to determine the appropriate starting point for an intangible asset discount rate.

Assuming a transaction occurs at fair value, if a company is using cash flows that incorporate an optimistic or conservative bias, as compared to expected cash flows, leading practice would be to adjust the cash flows to reflect expected cash flows. If the cash flows are not adjusted, it may be necessary to consider the IRR as a starting point when considering the appropriate discount rates for valuing intangible assets. However, in this situation it is important to assess whether the cash flows allocated to the individual intangible assets have been adjusted to eliminate the optimistic or conservative bias reflected in the overall business cash flows.

For example, if the IRR in a technology acquisition is higher than the WACC because the business cash flows include optimistic assumptions about revenue growth from selling products to future customers, adjustments may be made to the IRR to determine a discount rate for valuing the technology intangible asset used in the products that would be sold to both existing and future customers. However, if the revenue growth rate for the existing customer relationships does not reflect a similar level of growth or risk, then the discount rate for existing customer relationships should generally be based on the WACC without such adjustments.

If the difference between the IRR and the WACC is driven by the consideration transferred (that is, the transaction is a bargain purchase or the buyer has paid for entity-specific synergies), then the WACC may be more applicable to use as the

basis of the intangible assets' required returns. The relationship between the WACC and the IRR in certain circumstances impacts the selection of discount rates and is illustrated below.

The projected financial information (PFI) represents market participant cash flows and consideration represents fair value.	WACC = IRR
Alternatively:	
The PFI is optimistic, therefore, WACC \neq IRR	Adjust cash flows so WACC and IRR are the same
Consideration is a bargain purchase	Use WACC
PFI includes synergies not paid for	Use WACC
Consideration is not fair value, because it includes entity specific synergies	Use WACC

The WACC is generally the starting point for determining the discount rate applicable to an individual intangible asset. However, as discussed above, in certain circumstances the WACC may need to be adjusted if the cash flows do not represent market participant assumptions, for example, because the information needed to adjust the cash flows is not available. Premiums and discounts are applied to the entity's WACC or IRR to reflect the relative risk associated with the particular tangible and intangible asset categories that comprise the group of assets expected to generate the projected cash flows.

The range of discount rates assigned to the various tangible and intangible assets should reconcile, on a fair-value weighted basis, to the entity's overall WACC. For example, working capital and fixed assets are generally assigned a lower required rate of return relative to a company's overall discount rate, whereas intangible assets and goodwill are assigned a higher discount rate. This is because achieving the lower levels of cash flows necessary to provide a "fair" return on investment (ROI) on tangible assets is more certain than achieving the higher levels of cash flows necessary to provide a fair ROI on intangible assets. Application of the concept is subjective and requires significant judgment.

8.2.2.2.2 MEEM—Reconciliation of Rates of Return

The assignment of stratified rates to the various classes of assets is a challenging process, because there are few if any observable active markets for intangible assets. Nonetheless, companies should assess the overall reasonableness of the discount rate assigned to each asset by generally reconciling the discount rates assigned to the individual assets, on a fair-value-weighted basis, to the WACC of the acquiree (or the IRR of the transaction if the cash flows do not represent market participant assumptions). This reconciliation is often referred to as a "weighted average return analysis" (WARA). The WARA is a tool to assess the reasonableness of the selected discount rates.

Although goodwill is not explicitly valued by discounting residual cash flows, its implied discount rate should be reasonable, considering the facts and circumstances surrounding the transaction and the risks normally associated with realising earnings high enough to justify investment in goodwill. Determining the implied rate of return on goodwill is necessary to assess the reasonableness of the selected rates of return on the individual assets acquired. The rate of return should be consistent with the type of cash flows associated with the underlying asset; that is, the expected cash flows or conditional cash flows, as the rate of return may be different for each. Assets

valued using expected cash flows would have a lower required rate of return than the same assets valued using conditional cash flows, because the latter cash flows include additional uncertainty.

The value of the assets used in the WARA should be adjusted to the extent the assets' value is not amortisable for tax purposes. Some transactions (for example, share acquisitions in some jurisdictions) do not result in a change in the tax basis of acquired assets or liabilities assumed. The following example shows a WARA reconciliation used to test the reasonableness of the discount rates applied to the individual assets.

Example 8-4: Weighted Average Return Analysis

Entity A acquires Entity B in a business combination for C400 million. Reconciling Entity B's cash flows to the consideration transferred of C400 million results in an internal rate of return of 12 percent. Assume a 40 percent tax rate.

The WACC for comparable companies is 11.5 percent.

(CU in millions)

Assets	Fair Value	% of Total (a)	Assumed After-Tax Discount Rate (b)	Weighted Average Discount Rate (a) x (b)
	CU	%	%	%
Working capital	30	7.5	4.0	0.3
Fixed assets	60	15.0	8.0	1.2
Patent	50	12.5	12.0	1.5
Customer relationships	50	12.5	13.0	1.6
Developed technology	80	20.0	13.0	2.6
Residual goodwill	130	32.5	15.0	4.9
Total	400	100.0		12.1

Analysis:

The discount rates selected for intangible assets in conjunction with the rates selected for other assets, including goodwill, results in a WARA of 12.1 percent, which approximates the comparable entity WACC and IRR of 11.5 percent and 12 percent, respectively. Therefore, the selected discount rates assigned to the assets acquired appear reasonable.

The rates used for contributory assets, which are working capital (4 percent) and fixed assets (8 percent), are generally consistent with after-tax observed market rates. In general, discount rates on working capital and fixed assets are derived assuming a combination of equity and debt financing. The cost of debt on working capital could be based on the company's short-term borrowing cost. The fixed asset discount rate may assume a greater portion of equity in its financing compared to working capital. The entity's overall borrowing cost for the debt component of the fixed asset discount rate would be used rather than a short-term borrowing cost as used for working capital.

The rates used to derive the fair value of the patent, customer relationships, and developed technology of 12 percent, 13 percent, and 13 percent, respectively, each

(continued)

represent a premium to the WACC (11.5 percent). The premium should be based on judgment and consistent with market participant assumptions. Certain intangible assets, such as patents and backlog contracts, are perceived to be less risky than other intangible assets, such as customer relationships, developed technology, and goodwill. Discount rates on lower-risk intangible assets may be consistent with the entity's WACC, whereas higher risk intangible assets may reflect the entity's cost of equity capital.

The implied discount rate for goodwill (15 percent in this example) should, in most cases, be higher than the rates assigned to any other asset. Generally, goodwill has the most risk of all of the assets on the balance sheet; however, the implied rate of return should typically not be significantly higher than the rate of return on most other intangible assets. If the implied rate of return on goodwill is significantly different from the rates of return on the identifiable assets, the selected rates of return on the identifiable assets should be reconsidered.

Significant professional judgment is required to determine the discount rates that should be applied in performing a WARA reconciliation. A selected rate of return on intangible assets greater than 14 percent (in this example) would result in a lower fair value of the intangible assets and a higher implied fair value of goodwill (implying a lower rate of return on goodwill compared to other assets). This may suggest that the selected return on intangible assets is too high, because goodwill should conceptually have a higher rate of return than intangible assets.

8.2.2.2.3 Leading Practices in Determining Contributory Asset Charges

Cash flows associated with measuring the fair value of an intangible asset using the MEEM should be reduced or adjusted by contributory asset charges. The practice of taking contributory asset charges on assets, such as net working capital, fixed assets, and other identifiable intangible assets, is widely accepted among valuation practitioners. However, there are varying views related to which assets should be used to calculate the contributory asset charges. Some valuation practitioners have argued that certain elements of goodwill or goodwill in its entirety should be included as a contributory asset, presumably representing going concern value, institutional know-how, repeat patronage, and reputation of a business. A majority of valuation practitioners and accountants have rejected this view because goodwill is generally not viewed as an asset that can be reliably measured.

However, assembled workforce, as an element of goodwill, may be identifiable and reasonably measured, even though it does not meet the accounting criteria for separate recognition. As a result, an assembled workforce is typically considered a contributory asset, even though it is not recognized separately from goodwill [ASC 805-20-55-6 and IFRS 3.B37]. It is rare to see a valuation of an intangible asset that includes a contributory asset charge for a portion of goodwill, with the exception of an assembled workforce. Improperly including a contributory asset charge will tend to understate the fair value of the intangible asset and overstate goodwill. This is an evolving area; valuation practitioners are debating which other elements of goodwill might be treated in the same way as an assembled workforce and if such elements can be reasonably measured.

Another common practice issue in determining contributory asset charges is the inclusion of both returns "on" and "of" the contributory asset when the "of" component is already reflected in the asset's cash flow forecast. For self-constructed

assets, such as customer lists, the cost to replace them (i.e., the return of value) typically is included in normal operating costs and, therefore, already is factored into the PFI as part of the operating cost structure. Because this component of return is already deducted from the entity's revenues, the returns charged for these assets would include only the required return on the investment (i.e., the profit element on those assets has not been considered) and not the return of the investment in those assets. The "return of" component encompasses the cost to replace an asset, which differs from the "return on" component, which represents the expected return from an alternate investment with similar risk (i.e., opportunity cost of funds). Where returns of the asset are not included in the operating cost structure, a "return on" and a "return of" value would be charged.

The applied contributory asset charge may include both a "return on" and a "return of" component in certain circumstances. This may necessitate an adjustment to the PFI used to value a particular intangible asset. For example, when a royalty rate is used as a technology contributory asset charge, the assumption is that the entity licenses its existing and future technology instead of developing it in house. If the PFI was developed on the assumption that future technology will be developed in house, it would reflect cash expenditures for research and development. In this case, the PFI used to value the individual intangible asset (e.g., customer relationships) should be adjusted by eliminating the cash spent on research and development for future technology. This is because the royalty is the cost for licensing completed technology (whether current or future) from a third party. As a result, inclusion of cash spent on research and development in the PFI results in double counting as there is no need to develop a technology in house when it is assumed to be licensed from a third party.

8.2.2.2.4 MEEM – Tax Amortisation Benefits

The effect of income taxes should be considered when an intangible asset's fair value is estimated as part of a business combination. Generally, the tax amortisation benefit is applied when using the income approach and is not applied when using the market approach. Market-based data used in the market approach is assumed to include the potential tax benefits resulting from obtaining a new tax basis.

Many business combinations result in the acquiring entity carrying over the acquiree's tax basis. As a result, the amounts recorded for financial reporting purposes will most likely differ from the amounts recorded for tax purposes. A deferred tax asset or deferred tax liability should generally be recognised for the effects of such differences. Although no "step up" of the intangible asset's tax basis actually occurs, the estimation of fair value should still reflect hypothetical potential tax benefits as if it did. The tax benefits should reflect the tax legislation in the domicile where the asset is situated.

IFRS does not contain specific guidance with respect to applying the tax amortisation benefit. However, the asset's fair value is independent of the way an asset is acquired, whether acquired alone or together with other assets in a business combination. An asset's fair value in a business combination normally reflects the price that would be paid for the individual asset if it was acquired separately. The tax amortisation benefit that would be available if the asset was acquired separately is reflected in the asset's fair value, if such a benefit would be available to more than one potential purchaser of the asset.

8.2.2.3 Income Approach for Intangible Assets—Relief-From-Royalty Method

The relief-from-royalty (RFR) method of the income approach is relatively specialised for use in measuring the fair value of intangible assets that are often the subject of licensing, such as trade names, patents, and proprietary technologies.

The fundamental concept underlying this method is that in lieu of ownership, the acquirer can obtain comparable rights to use the subject asset via a licence from a hypothetical third-party owner. The asset's fair value is the present value of licence fees avoided by owning it (that is, the royalty savings). To appropriately apply this method, it is critical to develop a hypothetical royalty rate that reflects comparable comprehensive rights of use for comparable intangible assets. The use of observed market data, such as observed royalty rates in actual arm's length negotiated licences, is preferable to more subjective unobservable inputs.

Royalty rate selection requires judgment because most brands, trade names, trademarks, and intellectual property have unique characteristics. The underlying technology or brand may have been licensed or sublicensed to third parties. The actual royalty rate charged by the entity for the use of the technology or brand is generally the best starting point for an estimate of the appropriate royalty rate. However, in the absence of actual royalty rate transactions, market-based royalty rates for similar products, brands, trade names, or technologies are used. Market rates are adjusted so that they are comparable to the subject asset being measured, and to reflect the fact that market royalty rates typically reflect rights that are more limited than those of full ownership. Market royalty rates can be obtained from various third-party data vendors and publications.

Example 8-5: The Relief From Royalty Method

Entity A acquires technology from Entity B in a business combination. Prior to the business combination, Entity X was licensing the technology from Entity B for a royalty of 5 percent of sales. The technology acquired from Entity B is expected to generate cash flows for the next five years.

Entity A has determined the relief-from-royalty method is appropriate to measure the fair value of the acquired technology.

The following is a summary of the assumptions used in the relief-from-royalty method:

Revenue: Represents the projected revenue expected from the technology over the period of expected cash flows, which is estimated to be five years.

Royalty rate: The royalty rate of 5 percent was based on the rate paid by Entity X before the business combination, and is assumed to represent a market participant royalty rate. Actual royalty rates charged by the acquiree (Entity B) should be corroborated by other market evidence where available to verify this assumption.

Discount rate: Based on an assessment of the relative risk of the cash flows and the overall entity's cost of capital, 15 percent is considered reasonable.

Tax amortisation benefits: Represents the present value of tax benefits generated from amortising the intangible asset. Based on the discount rate, tax rate, and

(continued)

a statutory 15-year tax life, the tax benefit is assumed to be calculated¹ as 18.5 percent of the summation of present values.

	Year 1	Year 2	Year 3	Year 4	Year 5
Revenue	CU 10,000	CU 8,500	CU 6,500	CU 3,250	CU 1,000
Royalty rate	5.0%	5.0%	5.0%	5.0%	5.0%
Royalty savings	500	425	325	163	50
Income tax rate	40%	40%	40%	40%	40%
Less: Income tax expense	(200)	(170)	(130)	(65)	(20)
After-tax royalty savings	CU 300	CU 255	CU 195	CU 98	CU 30
Discount period ¹	0.5	1.5	2.5	3.5	4.5
Discount rate	15%	15%	15%	15%	15%
Present value factor ²	0.9325	0.8109	0.7051	0.6131	0.5332
Present value of royalty savings ³	CU 280	CU 207	CU 137	CU 60	CU 16
Sum of present values	CU 700				
Tax amortisation benefit ⁴	129				
Fair value	CU 829				

¹ Represents a mid-period discounting convention, because cash flows are recognised throughout the year.

² Calculated as $1/(1+k)^t$, where k = discount rate and t = discount period.

³ Calculated as the after-tax royalty savings multiplied by the present value factor.

⁴ The TAB was calculated to be 18.5 percent of the summation of the present value of cash flows.

8.2.2.5 Income Approach for Intangible Assets—Greenfield Method

The Greenfield method uses a hypothetical cash flow scenario to develop an operating business from an entity that at inception only holds the intangible asset. Consequently, this valuation method is most relevant for assets that are considered to be scarce or fundamental to the business, even if they do not necessarily drive the excess returns that may be generated by the overall business. For example, the Greenfield method is frequently used to value broadcasting licences. These assets are fundamental to a broadcasting business but do not necessarily generate excess returns for the business. Excess returns may be driven by the broadcasted content or technology.

This method considers the fact that the value of a business can be divided into three categories: (1) the “going concern value,” (2) the value of the intangible asset, and (3) the value of the excess returns driven by other assets. The going concern value is the value of having all necessary assets and liabilities assembled such that normal business operations can be performed. Under the Greenfield method, the investments required to recreate the going concern value of the business (both capital investments and operating losses) are deducted from the overall business cash flows. This results in the going concern value being deducted from the overall business value. Similarly, the value of the excess returns driven by intangible assets other than the subject intangible asset is also excluded from the overall business

¹ The calculation is beyond the scope of this Guide. It uses the discount rate for the tax amortisation benefit (TAB), the term of the TAB, and the tax rate.

cash flows by using cash flows providing only market participant or normalised levels of returns. The result of deducting the investment needed to recreate the going concern value and excluding the excess returns driven by other intangible assets from the overall business cash flows provides a value of the subject intangible asset, the third element of the overall business.

The Greenfield method requires an understanding of how much time and investment it would take to grow the business considering the current market conditions. The expenses and capital expenditures required to recreate the business would be higher than the expense and capital expenditure level of an established business. In addition, the time to recreate or the ramp-up period also determines the required level of investments (for example, to shorten the ramp-up period more investment would be required). In summary, the key inputs of this method are the time and required expenses of the ramp-up period, the market participant or normalised level of operation of the business at the end of the ramp-up period, and the market participant required rate of return for investing in such a business (discount rate).

The tax amortisation benefit of the intangible asset should also be included in determining the value of the subject intangible asset.

8.2.2.6 Income Approach for Intangible Assets—With and Without Method

The value of an intangible asset under the with and without method is calculated as the difference between the business value estimated under two sets of cash flow projections:

- The value of the business with all assets in-place at the valuation date.
- The value of the business with all assets in-place except the intangible asset at the valuation date.

The fundamental concept underlying this method is that the value of the intangible asset is the difference between an established, on-going business and one where the intangible asset does not exist. If the intangible asset can be rebuilt or replaced in a certain period of time, then the period of lost profit, which would be considered in valuing the intangible asset, is limited to the time to rebuild. However, the incremental expenses required to rebuild the intangible asset also increase the difference between the scenarios and, therefore, the value of the intangible asset.

This valuation method is most applicable for assets that provide incremental benefits, either through higher revenues or lower cost margins, but where there are other assets that drive revenue generation. This method is sometimes used to value customer-related intangible assets when the MEEM is used to value another asset. Key inputs of this method are the assumptions of how much time and additional expense are required to recreate the intangible asset, and the amount of lost cash flows that should be assumed during this period. The expenses required to recreate the intangible asset should generally be higher than the expenses required to maintain its existing service potential. In addition, to shorten the time to recreate it would generally require a higher level of investment.

The tax amortisation benefit of the intangible asset should also be included in determining the value of the subject intangible asset.

8.2.2.7 Market Approach for Intangible Assets

The market approach, discussed in FV 4.3.1, may be applied to measure the fair value of an intangible asset that is, or can be, traded, and for which market data is reasonably available. Intangible assets tend to be unique and typically do not trade in active markets. For those transactions that do occur, there tends to be insufficient information available. However, there are some types of intangible assets that may trade as separate portfolios (such as brands, cable television, or wireless telephone service subscriptions), as well as some licences to which this approach may apply.

When applying the market approach to intangible assets, relevance and weight should be given to financial and key nonfinancial performance indicators (see BC 7.3.2 for further details). As a practical matter, information about key nonfinancial performance indicators (e.g., value per bed for hospitals, value per advisor for an advisory business, value per subscriber for a telecommunications company) may be more relevant and available than pure financial metrics. When used, these performance metrics should be reviewed carefully. For example, a cell phone subscription in an area with low monthly usage would not be of equivalent value to a subscription in an area with a high monthly usage.

Another factor to consider when valuing assets is that price and value are often affected by the entity-specific motivations of the buyer and seller. For example, the selling price of an asset that is sold in liquidation is not a useful indication of fair value.

The market approach typically does not require an adjustment for incremental tax benefits from a “stepped-up” or new tax basis. The market-based data from which the asset’s value is derived is assumed to implicitly include the potential tax benefits resulting from obtaining a new tax basis. An adjustment may be required, however, if the tax rules in the domicile where comparable transactions occurred are different from the tax rules where the subject asset is domiciled.

8.2.2.8 Cost Approach for Intangible Assets

The cost approach, discussed in FV 4.3.2, while more commonly used to value machinery and equipment, can be an effective means of estimating the fair value of certain intangible assets that are readily replicated or replaced, such as routine software and assembled workforce. However, it is seldom appropriate to use a cost approach for an intangible asset that is one of the primary assets of the business.

The cost approach, applied to intangible assets, may fail to capture the economic benefits expected from future cash flows. For example, the cost required to replace a customer relationship intangible asset will generally be less than the cash flows generated from future sales derived from the asset. This is because the cost approach may fail to capture all of the necessary costs to rebuild that customer relationship to the mature level/stage that exists as of the valuation date, as such costs are difficult to distinguish from the costs of developing the business.

A market participant may pay a premium for the benefit of having the intangible asset available at the valuation date, rather than waiting until the asset is obtained or created. If the premium would be significant, then an “opportunity cost” should be considered when using the cost approach to estimate the fair value of the intangible asset. That opportunity cost represents the foregone cash flows during the period it takes to obtain or create the asset, as compared to the cash flows that would be

earned if the intangible asset was on hand today. Some factors to consider when determining if opportunity cost should be applied include:

- Difficulty of obtaining or creating the asset.
- Period of time required to obtain or create the asset.
- Scarcity of the asset.
- Relative importance of the asset to the business operations.

If this additional opportunity cost included in the cost approach is based on the total enterprise cash flows, then the calculation would be similar to the approach in the with and without method. However, intangible assets valued using the cost approach are typically more independent from other assets and liabilities of the business than intangible assets valued using the with and without method. Thus, further analysis is required to determine whether the opportunity cost can be estimated by alternative approaches, like renting a substitute asset for the period required to create the subject intangible asset.

Estimating the opportunity cost can be difficult and requires judgment. Also, it may not be appropriate to include the total lost profit of a business in the value of one intangible asset if there are other intangible assets generating excess returns for the business.

The cost approach typically requires no adjustment for incremental tax benefits from a “stepped-up” or new tax basis. The market-based data from which the asset’s value is derived under the cost approach is assumed to implicitly include the potential tax benefits resulting from obtaining a new tax basis. Under the cost approach the assumed replacement cost is not tax-effected while the opportunity cost is calculated on a post tax basis.

8.2.2.9 Leading Practices when Measuring the Fair Value of Intangible Assets

Exhibit 8-1: Leading Practices when Measuring the Fair Value of Intangible Assets

1. **Select discount rates on intangible assets that are within a reasonable range of the WACC and/or IRR**—In general, low-risk assets should be assigned a lower discount rate than high-risk assets. The required return on goodwill should be highest in comparison to the other assets acquired.
2. **Use the MEEM only for the primary intangible asset**—The MEEM, which is an income approach, is generally used only to measure the fair value of the primary intangible asset. Secondary or less-significant intangible assets are generally measured using an alternate valuation technique (e.g., relief-from royalty, Greenfield, or cost approach). Using the MEEM to measure the fair value of two intangible assets, and using a common revenue stream, results in double counting or omitting cash flows from the valuations of the assets.
3. **Include the tax amortisation benefit when using an income approach**—As discussed in BC 7.4.1.1.4, the tax benefits associated with amortising intangible assets for tax purposes should generally be applied regardless of the tax attributes of the transaction. The tax jurisdiction of the country the asset is domiciled in should drive the tax amortisation benefit calculation.

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4. **Use an appropriate valuation methodology for the primary intangible assets**—The income approach is most commonly used to measure the fair value of primary intangible assets. The market approach is not typically used due to the lack of comparable transactions. The cost approach is generally not appropriate for intangible assets that are deemed to be primary cash-generating assets, such as technology or customer relationships. As discussed in BC 7.2.3, the cost approach is sometimes used to measure the fair value of certain software assets used for internal purposes, an assembled workforce, or assets that are readily replicated or replaced.
 5. **Value intangible assets separately**—In most cases, intangible assets should be valued on a standalone basis (i.e., trademark, customer relationships, technology, etc.). In some instances, however, the economic life, profitability, and financial risks will be the same for several intangible assets such that they can be combined. Refer to BC 4.2.2.
 6. **Carefully consider and assess the economic life of an asset**—For example, the remaining economic life of patented technology should not be based solely on the remaining legal life of the patent because the patented technology may have a much shorter economic life than the legal life of the patent. The life of customer relationships should be determined by reviewing customer relationship turnover.
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8.2.3 Asset Retirement Obligations (U.S. GAAP only)

ASC 410 applies to legal obligations associated with the retirement of tangible long-lived assets. ASC 410-20-25-4 requires that a reporting entity recognise the fair value of a liability for an asset retirement obligation (ARO) in the period in which it is incurred if a reasonable estimate of fair value can be made. ASC 410 provides a practicability exception, which requires disclosure if a reasonable estimate of fair value cannot be made.

Key considerations in applying the ASC 820 framework to AROs are highlighted in Exhibit 8-2.

Exhibit 8-2: Application of ASC 820 to Asset Retirement Obligations Under U.S. GAAP

Determine unit of account	The unit of account is the legal obligation, in whole or in part, to retire a long-lived asset. ASC 410 requires an ARO to be recorded at fair value in the initial year that the requirements of the standard are met. When a new ARO layer is established due to a change in the timing or amount of expected cash flows, the new layer is treated as a separate unit of account.
Evaluate valuation premise	Since AROs are not commonly held as assets by other parties, a reporting entity should consider the valuation of its AROs assuming they are transferred to a market participant.
Assess principal market	There is unlikely to be a principal market for asset retirement obligations as they are not actively traded and there is little or no observable data about the price to transfer an ARO.
Determine the most advantageous market	The most advantageous market is the market that would minimize the amount that would be paid to transfer the liability. We expect that reporting entities will generally develop a hypothetical market to determine the fair value of AROs.
Determine valuation technique	ASC 820 requires that a reporting entity consider the use of all valuation techniques appropriate in the circumstances. However, ASC 410-20-30-1 states that an expected present value technique will usually be the only appropriate technique. ASC 410 does not preclude the use of other techniques. Consideration of market participant assumptions and the applicability of other potential techniques are consistent with the ASC 820 framework.
Determine fair value	Fair value will usually be based on an expected present value technique.

8.2.3.1 Periods Subsequent to Initial Measurement of AROs (U.S. GAAP only)

Subsequent to initial recognition, period-to-period changes to the ARO are recorded to reflect the passage of time, and revisions to either the timing or the amount of the original estimate of undiscounted cash flows. Changes to the ARO due to the passage of time do not represent a remeasurement at fair value and are not subject to the requirements of ASC 820. Absent a change in estimate, after being initially measured at fair value, the ARO is accreted to the full obligation using the interest method over the period from initial measurement to the expected timing of the retirement.

A change in the estimate of an ARO occurs when there is a revision in the timing or the amount of the original estimate of undiscounted cash flows:

- Downward adjustment—If the revision results in a reduction of the obligation, the original discount rate is used to value the revised cash flow estimates. Thus, a downward revision is not considered a fair value measurement as it must be recorded using a historical discount rate.
- Upward adjustment—If the revision results in an upward adjustment to the undiscounted cash flows, a new discount rate, reflecting current market conditions, is applied to the incremental cash flows. An upward revision is considered a new fair value measurement as the discount rate is updated to reflect current market conditions.

As the recording of the revision for an upward adjustment represents a new liability, we believe the upward revision is an initial measurement under ASC 410. The concepts of ASC 820 apply in determining the new “layer” associated with the existing ARO. The unit of account for measurement of an upward revision is specified in ASC 410 as representing only the incremental cash flows.

Question 8-3: What are the effects of guarantees or assurance on the fair value measurement of ARO liabilities under U.S. GAAP?

PwC Interpretive Response

Companies will often enter into agreements that provide assurance on the payment of an ARO. Those agreements may include the purchase of surety bonds, insurance policies, letters of credit, or guarantee arrangements. As discussed previously, an expected present value technique will usually be the only appropriate technique with which to estimate the initial fair value of a liability for an ARO. ASC 410-20-35-9 notes that the existence of such guarantees and assurance agreements to satisfy AROs may affect the determination of the credit-adjusted risk free rate used in the present value calculation of the fair value measurement of the liability. Subsequent changes in guarantee or assurance provisions have no effect on the original measurement or accretion under the ARO model, but may affect the rate used to discount upward revisions in cash flows for the obligation (i.e., new layers). It is important to remember that the initial measurement of this liability and any subsequent layers at fair value are not recurring measurements under ASC 820. In contrast, liabilities measured at fair value with a third-party credit enhancement that are measured or disclosed on a recurring basis are subject to the measurement guidance in ASC 820-10-25.

8.2.3.2 Decommissioning Costs (IFRS Only)

Decommissioning costs are nonfinancial liabilities that fall within the scope of IAS 37. The measurement basis in IAS 37 is not fair value and so the measurement is not in the scope of IFRS 13. Nonfinancial liabilities are only within IFRS 13's scope when they are assumed in a business combination. Therefore, when the acquirer assumes the acquiree's decommissioning costs in a business combination, the assumed liability will be measured at fair value, including the entity's own credit risk.

8.2.4 Investment Property

Under U.S. GAAP, investment property is measured at the lower of fair value less costs to sell and carrying value. Also, there are instances in which the reporting entity may be subject to specialised accounting that requires investment property to be measured at fair value. In those cases, the fair value used in the measurement is subject to the requirements in ASC 820.

Under IAS 40, an entity may choose either the cost model for investment property or the fair value model. If an entity applies the fair value model, it is within the scope of IFRS 13.

Fair value for investment property is based on the property's highest and best use.

8.2.4.1 How to Fair Value Investment Property

An investment property's fair value is typically based either on the market approach by reference to sales in the market of comparable properties or the income approach

by reference to rentals obtained from the subject property or similar properties. The replacement cost approach is not appropriate for the fair value model under IAS 40 because the value of an investment property lies in its ability to generate income or to appreciate in value by reference to market prices, not in the cost to rebuild it.

Fair value reflects rental income from current leases and other assumptions that market participants make about future rental income, based on current conditions.

Fair value does not reflect the following factors if they would not be generally available to market participants:

- Additional value created by bringing together a number of properties in different locations and combining them into a portfolio of properties.
- Synergies between investment properties and other assets.
- Legal rights and restrictions specific to the present owner.
- Tax benefits or disadvantages specific to the present owner.

Fair value excludes any estimated price that is inflated or deflated by special terms such as unusual financing, sale and leaseback arrangements, or special considerations or concessions granted by anyone associated with the sale. Fair value is determined without deduction for transaction costs that might be incurred on sale or other disposal.

When a reporting entity has prepaid or accrued operating lease income on its balance sheet, it does not include the value of that income in the fair value of the related investment property, as the prepaid or accrued operating lease income is shown as a separate asset or liability.

8.2.4.1.1 The Market Approach—Investment Property

The best evidence of fair value is usually provided by current prices in an active market for similar property in a similar location and condition and subject to similar lease terms and other conditions. Such similar properties may not always be present and thus an entity should take into account, and make allowances for, differences from the comparable properties in location, nature, and condition or in contractual terms of leases and other contracts relating to the property. For example, if the property is leased by the entity through a finance lease that contains restrictions on the use of the property by present and future lessees, that could significantly affect the property's fair value because it might restrict the entity's ability to obtain the optimum market rentals.

Where current prices in an active market are not available, entities should consider evidence from alternative sources, such as:

- Current prices in an active market for properties of a different nature, condition, or location or that are subject to different lease or other contractual terms, adjusted to reflect the differences.
- Recent prices from transactions in less active markets, adjusted to reflect changes in economic conditions since the date of those transactions.

Using the market approach to measure the fair value of investment property is likely to be a Level 2 measurement.

8.2.4.1.2 The Income Approach—Investment Property

The fair value of an investment property may be measured using discounted cash flow projections based on reliable estimates of future rental income and expenditures, supported by the terms of existing lease and other contracts. When practicable, external evidence should also be used, such as current market rents for properties of a similar nature, condition, and location. Discount rates that reflect current market participant assessments of uncertainty regarding the amount and timing of cash flows should be used to discount the projected future cash flows.

Using the income approach to measure the fair value of investment property is likely to result in a Level 3 measurement as the most significant input will be the projected cash flows.

8.2.5 Commodity Broker-Trader Inventory (IFRS Only)

Broker-traders are those who trade in commodities on their own behalf or for others. Their inventories are normally traded in an active market and are purchased with a view to resale in the near future, generating a profit from fluctuations in price or broker-traders' margin. Industry practice is often to carry such inventories at fair value less costs of disposal and thus an entity may adopt this policy. Measurement of these inventories is, therefore, within IFRS 13's scope.

Entities with commodity inventory will measure fair value by reference to the market price for the item in the principal market. This will likely be a Level 1 measurement.

8.2.6 Biological Assets

U.S. GAAP

There is no specific U.S. GAAP for biological assets. These assets are measured at fair value less frequently under U.S. GAAP than under IFRS. However, many of the concepts discussed in the IFRS section that follows could be helpful in situations where, under U.S. GAAP, a reporting entity elects or is required to measure a biological asset at fair value in accordance with specialised accounting or other U.S. GAAP applicable to nonfinancial assets.

IFRS

Biological assets are required by IAS 41 to be measured at fair value less costs of disposal at both initial recognition and at each subsequent reporting date and are therefore within IFRS 13's scope for both measurement and disclosure.

IAS 41 does not apply to agricultural produce after the point of harvest. Such produce will be inventory in the scope of IAS 2 and, consequently, it is out of the scope of IFRS 13. However, it is required to be measured at fair value on initial recognition at harvest.

8.2.6.1 Location of the Asset

A biological asset's physical location is often one of the asset's critical characteristics. Transport costs are regularly incurred in an agricultural context as entities need to ensure that their biological assets and agricultural produce are transported to the principal or most advantageous market. In such cases, IFRS 13.26 requires the fair value of those assets to be adjusted for transport costs.

Under IFRS 13.28, fair value takes into account an asset's location and condition. Thus, transport costs impact the measurement of fair value. For example, the fair value of cattle at a farm is the price for the cattle in the principal market less the transport and other costs of getting the cattle from the farm to that market. This requirement to measure biological assets by taking transport costs into account when determining fair value as well as future costs of disposal would most likely result in a loss on initial recognition of biological assets.

Example 8-6: Impact of Transport Costs on Determining Fair Value

Entity A purchased cattle at an auction for CU 100,000 on June 30, 20X8. Costs of transporting the cattle back to the company's farm were CU 1,000. The company would have to incur similar transportation cost if it were to sell the cattle in the auction, in addition to an auctioneer's fee of 2 percent of sales price. Fair value less costs of disposal is, therefore, CU 97,000 (CU 100,000 – CU 1,000 – CU 2,000), cash outflow equals CU 101,000, resulting in a loss on initial recognition of the cattle of CU 4,000 (CU 101,000 – CU 97,000).

By December 31, 20X8, the fair value of the cattle (taking into account its location and condition) had increased to CU 110,000 (that is, CU 110,000 is the market price net of costs of transporting the cattle to market). Hence, the cattle should be measured in entity A's financial statements at CU 107,800 (that is, CU 110,000 less the estimated auctioneer's fee of CU 2,200 as a cost of disposal). The estimated costs of getting the cattle to the auction are not deducted as a cost of disposal because transport costs are taken into account in determining fair value.

8.2.6.2 Market-Based Valuation Techniques

Many biological assets have relevant market-determined prices or values available, as they are often basic commodities that are traded actively. For example, there are usually market prices for calves and piglets, as there is an active market for these. Where there is an active market 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.

The nature of consumable biological assets and agricultural produce is such that an active market will normally exist. Some bearer biological assets (i.e., those producing multiple harvest), on the other hand, may seldom be sold so other techniques for measuring fair value may be necessary. If an active market does not exist, one or more of the following methods should be used to estimate fair value, if such data is available:

- 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.
- Market prices for similar assets with adjustment to reflect differences.
- 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.

Biological assets are often physically attached to land (for example, trees and vines). 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 the fair value of 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 biological assets' fair value (IAS 41.25).

8.2.6.3 Fair Value of Biological Assets in the Absence of Market Based Prices or Values

Where market-based prices or values are not available for a biological asset in its present location and condition, fair value should be measured on the basis of a valuation technique that is appropriate in the circumstances and for which sufficient data is available to measure fair value. The use of relevant observable inputs should be maximised while minimising the use of unobservable inputs (IFRS 13.61). An example of an appropriate valuation technique is the present value of expected net cash flows from the asset discounted at a current market-based rate.

The fair value of bearer biological assets is generally determined through the use of a discounted cash flow method, as market-determined prices or values are not available. The fair value of these assets is derived from the expected cash flows of the agricultural produce.

The cash flow model should include all directly attributable cash inflows and outflows and only those cash flows. The inflows will be the price in the market of the harvested crop for each harvest over the asset's life. The outflows will be those incurred to raise or grow the asset and get it to market, for example, direct labour, feed, fertilizer, and transport costs. The market is where the asset will be sold. For some assets, this will be an actual market; for others, it may be the "factory gate."

Consistent with the objective of estimating fair value, the cash flows should be based as far as possible on market data. For example, while there is a market for fully grown salmon, there is no market for partly grown salmon. The fair value of a partly grown salmon is measured by projecting the cash flows from the sale of the salmon fully grown, less the cash outflows needed to grow the salmon to its marketable weight and discounting them to a present value.

For purposes of estimating the fair value of biological assets, financing and tax (when a pre-tax discount rate is used) cash flows are ignored. Any cash flows to be incurred in re-establishing biological assets after harvest are also excluded from the valuation (for example, the cost of re-planting a crop). A provision for re-planting may be required by IAS 37 once the biological asset is harvested if there is a contractual obligation for this, but it is not part of the asset's fair value as it is not a characteristic of the asset.

An imputed contributory asset charge should be included where there are no cash flows associated with the use of assets essential to the agricultural activity, otherwise the fair value will be overstated. The most common example is when the land on which the biological asset is growing is owned by the entity. The cash flows should include a notional cash outflow for rent of the land to be comparable with the asset of an entity that rents its land from a third party. The fair value of a biological asset is independent of the land on which it grows or lives. Examples of instances in which this approach is relevant include long-term biological assets, such as plantation forests, tea plantations, and vineyards, but this is also appropriate for some short-term assets.

Example 8-7: Estimating Fair Value of Short-Lived Biological Assets in the Absence of Market-Based Prices or Values

A quarterly reporting company with a December year end incurs costs of CU 900 in respect of sowing a wheat field in Q2 20X8. Management expects to harvest the wheat at the end of November 20X8. The field is owned by the reporting entity and has an original cost of CU 2,000. For purposes of this example, assume that land values do not change.

There is no market-based fair value available. Consequently, the wheat's fair value (excluding the land) should be based on the present value of the expected net cash flows. The relevant discount rate is 11 percent.

Management's projections of future cash flows at June 30, 20X8 are as follows:

Period	3 Months Ending Sept 20X8 (CU)	3 Months Ending Dec 20X8 (CU)	Total (CU)
Cash inflows	—	4,000	4,000
Cash outflows ¹	(450)	(1,000)	(1,450)
Net cash flows	(450)	3,000	2,550
Discounted at 11%	(438)	2,847	2,409

¹ Included in the cash outflows is a contributory asset charge related to land and other assets recognised separately. This is not a true cash flow in this case as there is no rental payable in this scenario. However, the charge is included in the valuation to ensure a value consistent with a situation where the land is rented.

The wheat field is measured at June 30, 20X8, at CU 4,409 (being CU 2,000 in respect of land and CU 2,409 in respect of partly grown wheat). A fair value gain of CU 2,409 and the operating costs incurred during the quarter should be recognised in the quarterly income statement (or statement of profit or loss).

In the three months ended September 30, 20X8, actual cash outflows amounted to CU 550. This amount is recognised as an operating expense. At September 30, 20X8 management's revised projections based on the then current trends for wheat prices for delivery in November 20X8 were as follows:

Period	3 Month Projection (Sept 20X8 to Dec 20X8) (CU)
Cash inflows	3,800
Cash outflows ¹	(1,000)
Net cash flows	2,800
Discounted at 11%	2,728

¹ Included in the cash outflows is a contributory asset charge related to land and other assets recognised separately.

The wheat is measured at a fair value of CU 2,728. A fair value gain of CU 319 and the operating costs of CU 550 should be recognised in the quarterly income statement (or statement of profit or loss).

At the point of harvest, the wheat is worth CU 4,700. The biological asset immediately before harvest should be measured at that amount with a fair value gain

(continued)

of CU 1,972 recognised in the income statement (or statement of profit or loss). At the date of harvest, the wheat's fair value is derecognised as a biological asset and classified as inventory, at CU 4,700 as its deemed cost. One method of presentation when the wheat is sold is for the entity to report revenue of CU 4,700 and a cost of sales (the deemed cost of inventory) of CU 4,700. Therefore, no gross profit is recognised if the harvested produce is immediately sold without adding value to the inventory by further processing.

8.3 Impairments of Indefinite-Lived Intangible Assets, Including Goodwill, and Long-Lived Assets

Fair value measurements are necessary for impairment tests of nonfinancial assets under both U.S. GAAP and IFRS. For a more detailed discussion, BC 10: *Accounting for Tangible and Intangible Assets: Postacquisition* describes the impairment test of long-lived assets under U.S. GAAP; BC 11: *Accounting for Goodwill—Postacquisition* describes goodwill impairment testing under U.S. GAAP; BC 12: *Postacquisition Accounting Issues—IFRS* discusses impairment testing of nonfinancial assets and goodwill under IFRS.

8.3.1 Overview of Impairment Testing Under ASC 350, ASC 360-10, and IAS 36

Indefinite-lived and long-lived assets recognised, as well as goodwill, are tested for impairment under various accounting standards. Indefinite-lived assets are tested under ASC 350 in a one-step test, while long-lived assets are tested under ASC 360 in a two-step process. Testing for impairment of goodwill is a two-step process (unless a qualitative impairment assessment is elected—see BC 11.5.1) under ASC 350 and a one-step test under IAS 36. However, the one step of IAS 36 covers the impairment test of both the long-lived assets and goodwill. Goodwill impairment testing is performed at the reporting unit (RU) level under ASC 350 and, at the cash generating unit (CGU) level or groups of CGUs under IAS 36. The definition of an RU and CGU differ between U.S. GAAP and IFRS. Therefore, an RU and CGU will seldom be the same. The definition of a CGU is more comparable to an asset group under ASC 360.

Intangible assets not subject to amortisation (i.e., indefinite-lived intangible assets) are tested for impairment at least annually under ASC 350. The impairment test is a one-step test (unless a qualitative impairment assessment is elected—see BC 11.8.29), which compares the fair value of the intangible asset to its carrying value. If the carrying value exceeds its fair value, an impairment loss is recognised in an amount equal to the excess.

ASC 360-10 addresses the accounting for the impairment or disposal of long-lived assets, including intangible assets with finite lives. The impairment test for individual assets or an asset group, which is considered to be held and used under ASC 360-10, is a two-step test. Under step one, a reporting entity is required to assess the recoverability of an asset (or asset group). The carrying amount of an asset (or asset group) is not recoverable if it exceeds the sum of the undiscounted cash flows expected from the entity's use and eventual disposition of the asset (or asset group), which is an entity-specific measure. If the asset (or asset group) is not recoverable, the impairment loss is measured in step two as the difference between the carrying value of the asset (or asset group) and its fair value, which is market participant based.

Depending on the nature of the asset or asset group, the valuation techniques described above and in ASC 820 could be applied to measure fair value using an income approach. Because assets tested for impairment under ASC 360-10 have finite lives, the cash flows used will generally reflect the expiration of the economic benefits expected from the assets.

The one-step impairment analysis required by IFRS under IAS 36, which is used to test nonfinancial assets and goodwill, differs significantly from ASC 350 and ASC 360-10, and can yield different results for the same facts and circumstances. An asset or CGU is impaired when its carrying amount exceeds its “recoverable amount.” The recoverable amount is the higher of (i) its “fair value less cost to sell” or (ii) its “value in-use.” Value in-use is not a fair value measure. Under IFRS, an intangible asset not subject to amortisation, such as a brand, is tested for impairment annually as part of a CGU or group of CGUs. A CGU represents the smallest group of assets that generate income streams that are largely independent of one another. For example, a brand is normally used to support production of a branded product, and the revenues from sales of the branded product are not capable of being split between revenue for the brand and revenue for the product. Therefore, brands typically do not represent a CGU under IFRS and should not be tested alone. The brand should be tested with the associated CGU or group of CGUs.

Long-lived assets and disposal groups that meet the criteria to be held for sale under ASC 360 and IFRS 5 should be measured at the lower of their carrying amount or fair value less cost of disposal of the disposal group.

8.3.2 Impairment Tests—Key Considerations

Key considerations in determining fair value to measure impairment include the following:

- **Market Participants**—The calculation of fair value must be based on market participant assumptions. Under the fair value standards, management may start with internal cash flow estimates, but it must consider the need to adjust its assumptions to incorporate the perspective of market participants. Reporting entities should not presume that entity-specific projected financial information is representative of market participant assumptions. For example, one of the key assumptions in a cash flow model is the discount rate. The weighted average cost of capital should reflect the starting point for determining the rate that a market participant would demand, such as the industry-weighted average return on debt and equity adjusted for the relative advantages or disadvantages of the entity, rather than an entity-specific rate.
- **Markets**—In determining fair value, a reporting entity must determine the principal or most advantageous market. In general, there may not be a principal market for the sale of the reporting unit (under U.S. GAAP)/cash-generating unit (under IFRS) or indefinite-lived intangible asset being considered in the impairment analysis. If the reporting entity determines that there is no principal or most advantageous market, it should assess potential market participants and develop a hypothetical market based on its assessment of market participant assumptions.
- **Valuation Premise**—The reporting entity should assess potential markets, considering the highest and best use of the asset. In making this assessment under U.S. GAAP, the reporting entity must consider the reporting unit as a unit of account; however, it may also consider whether a reporting unit’s fair value should be adjusted based on the value in use with other assets. Under IFRS, each

cash-generating unit to which goodwill has been allocated is individually tested for impairment.

Note that the highest and best use of the reporting unit/cash-generating unit from the perspective of market participants may differ from that of the reporting entity. The reporting entity must use market participant assumptions in this analysis.

- **Multiple Valuation Techniques**—Although a discounted cash flow model may be the most suitable valuation technique in many cases, management must also consider the use of alternative methodologies each time an impairment test is performed. For example, the market approach is often used by valuation professionals as a secondary method to the income approach when valuing a business. Reporting entities need to consider whether both approaches are appropriate when valuing reporting units/cash generating units. The fair value of the reporting unit/cash generating unit should be based on a weighting of the results of all methods appropriate in the circumstances.

ASC 820, Example 3, Case A (ASC 820-10-55-36 through 38A) and IFRS 13, Example 4 (IFRS 13.IE11 through IE14) provide an example of the application of the ASC 820 framework in an impairment analysis. Issues such as asset groupings and allocations of losses are beyond the scope of this Guide. The following examples illustrate these concepts.

Example 8-8: Fair Value Measurement—Goodwill Impairment

In 20X1, Company C acquired a publicly-traded company, Subsidiary A, for \$900. At the time of the acquisition, Company C determined that \$100 of the purchase price related to goodwill. Company C decided to continue to operate Subsidiary A as a separate company. 30 percent of the goodwill was allocated to Company C's other reporting units. Company C determines that Subsidiary A is a reporting unit/cash generating unit. Subsidiary A is still a public registrant due to publicly traded debt.

Demand for Subsidiary A's services has declined since acquisition and its debt, which is not guaranteed or enhanced by Company C, is trading at a substantial discount. The carrying value of Subsidiary A at the time of the impairment test is \$700. In performing its annual goodwill impairment test, Company C calculates the fair value of Subsidiary A as follows:

(continued)

Determine unit of account	In accordance with the fair value standards, the unit of account is established by the guidance in ASC 350 and IAS 36. In this case, Subsidiary A is a separate reporting unit/cash-generating unit which is the unit of account used for the impairment test under ASC 350 and IAS 36.
Evaluate valuation premise	Company C considers whether the highest and best use of Subsidiary A will be in combination with other assets or on a standalone basis. In this case, Company C has no complementary assets that would provide additional value to a market participant. As such, Company C concludes that the valuation premise for Subsidiary A is on a standalone basis (as the reporting unit is being used as a single group).
Assess principal market	Company C determines that it has no access to a principal market for the sale of Subsidiary A as a unit.
Determine the most advantageous market	Company C determines that there is no known or liquid market for Subsidiary A. As such, Company C determines that it would most likely sell Subsidiary A to one of its competitors (market participants with interests similar to its own) or spin off Subsidiary A as a separate entity for sale to a financial buyer or through public markets. Company C will hypothecate market participant assumptions based on its expectations of the assumptions of these competitors and/or potential financial investors.
Determine valuation technique	<p>Company C considers the use of each of the valuation techniques as follows:</p> <ul style="list-style-type: none"> • Market approach—Company C has market information available based on the significant discount on Subsidiary A's outstanding debt. This information, combined with publicly available information about the recent sale of a similar company, allows Company C to develop an estimate of the market value of Subsidiary A. The analysis concludes that Subsidiary A has a fair value of \$500. • Income approach—Company C performs a discounted cash flow analysis based on its expectations of potential net income from the subsidiary. These assumptions are incorporated in the cash flow analysis along with other market participant assumptions. The analysis concludes that the fair value is \$550. • Cost approach—As the analysis relates to an operating business, Company A concludes that the cost approach is not applicable.
Determine fair value	Company C determines that both the market and income approaches provide inputs into the estimate of fair value that would be considered by market participants. Given there is no wide range between the results provided by both approaches, Company C decides the income approach is more appropriate because it is more robust. There are few transactions in the market. Therefore, the fair value is \$550.

Question 8-4: Can the original transaction price be used as an indicator of fair value in the first post-acquisition goodwill impairment test? What if the next highest bid was substantially lower?

PwC Interpretive Response

When assessing fair value in the first goodwill impairment test after an acquisition, an acquirer may consider the purchase price as a data point in determining fair value unless there is contradictory evidence. ASC 820-10-30-3A and IFRS 13.59 require that a reporting entity consider factors specific to the transaction in determining whether the transaction price represents fair value. The fact that the next highest bid was substantially lower than an acquirer's bid does not necessarily mean that the transaction price is not representative of fair value. However, in performing the evaluation, the acquirer should also consider developments that may have occurred since the purchase transaction in assessing whether the transaction price should be adjusted to reflect changes in fair value. Generally, a reporting entity should make a new detailed determination of fair value when performing its first post-acquisition annual impairment test.

8.4 Business Combinations

With limited exceptions, ASC 805 and IFRS 3 (together, the “business combinations standards”) require the measurement of assets acquired and liabilities assumed to be at their acquisition-date fair values. ASC 805 and IFRS 3 incorporate the definition of fair value in the fair value standards; therefore, fair value must be measured based on the price that would be received to sell an asset or paid to transfer a liability.

The fair value standards preclude the use of entity-specific assumptions and require measurement of fair value based on assumptions from the perspective of market participants. Therefore, an acquirer must determine the fair value of assets acquired and liabilities assumed without considering the acquirer's intended use (if that use is different from that of market participants). As a result, the acquirer may be required to develop hypothetical markets and to consider multiple valuation techniques. Application of the fair value standards framework to determine acquisition-date fair values, including the requirement to incorporate a market participant—not entity-specific—perspective, may require a significant amount of time and effort on the part of reporting entities. Furthermore, completion of the purchase accounting process may require additional valuation resources and other specialists in developing appropriate valuation approaches and fair value measurements.

Key considerations in applying the fair value standards to business combinations are summarised in Exhibit 8-3.

Exhibit 8-3: Application of the Fair Value Standards to Business Combinations

Concept	Fair Value Standards
Unit of account to be measured	Unit of account as determined by appropriate U.S. GAAP or IFRS for the assets being acquired and liabilities assumed.
Definition of fair value	Assets acquired and liabilities assumed that are measured at fair value are subject to the requirements of the fair value standards.
Measurement of fair value	<ul style="list-style-type: none">• Exit values and determination of highest and best use (for non-financial assets) are incorporated into fair value measurements.• Incorporates market participant assumptions about the use of non-financial assets.• Reporting entities must consider multiple valuation techniques when measuring the fair value of assets and liabilities.
Disclosures	Fair value disclosures are not required upon initial recognition of fair value in a business combination. However, assets and liabilities measured at fair value after the initial valuation will be subject to the fair value disclosure requirements.

Inventory acquired in a business combination can be in the form of finished goods, work in progress, or raw materials. ASC 805 and IFRS 3 require that inventory be measured at its fair value on the acquisition date. For discussion of measuring the fair value of inventory and working capital items, refer to BC 7.5.

8.4.1 Business Combination—Example

The following example illustrates considerations when applying the fair value standards framework to certain common assets acquired and liabilities assumed in a business combination. Reporting entities should also consider the guidance and examples included in the BC guide.

Example 8-9: Business Combination—Acquisition of a Refrigerator Company

On March 1, 20X1, Company A acquires all of the equity of Company B in a business combination. Company A applies the acquisition method based on the following information on the acquisition date:

- Company A and Company B both manufacture and sell refrigerators and hold the second and sixth ranks, respectively, in market share by revenue.
- Company B produces a luxury line of refrigerators under the brand name, *SuperCool*, that competes directly with Company A's luxury products. Company A also manufactures other refrigerators. Company A determines that the *SuperCool* brand name has met the criteria to be considered identifiable and will be recorded as an intangible asset at fair value as part of acquisition accounting. Company A intends to absorb Company B into its operations and, over a short period of time (estimated to be less than one year), to phase out Company B's brand name.
- Company B owns a factory building located near a major transportation hub that provides it with the ability to access export markets. The building has

(continued)

been customized for Company B's use. The area around the facility is primarily industrial in nature.

- Company B has developed proprietary technology in its manufacturing process that allows it to construct appliances at a lower cost with a lower defect rate.
- Company B has a favorably priced long-term supply contract for copper, which is used as a component in its refrigerators. Company B's working capital includes raw materials, accounts receivable, and accounts payable.

Company A pursued its acquisition of Company B primarily to secure market share, to eliminate a competitor in the high-margin luxury refrigerator segment, and to gain the benefits of the manufacturing process utilised by Company B. Company A plans to implement Company B's manufacturing process across all production lines.

In applying the fair value standards framework as part of purchase accounting, Company A considers the following:

Determine fair value	<p>Company A evaluates and weighs the results of each valuation approach to develop an estimate of fair value:</p> <ul style="list-style-type: none">• The market approach included data that was reasonably current and reflected the advantageous location of Company B's facility; however, the purchase price needed to be adjusted for the size and customisation of Company B's factory building.• The income approach also incorporated current data that reflected Company B's advantageous location. However, similar to the market approach, the rental data does not incorporate the size and customisation of Company B's factory building.• The cost approach provided an estimate of fair value; however, it is difficult to directly replicate the asset, either exactly or through a substitute of equal utility. There is also a three to five year lead period necessary to obtain permits and complete design and construction. Therefore, Company A determines that the information provided by the cost approach is not relevant and will not be weighted in the final determination of fair value. <p>Based on these factors, Company A concludes that both the market and income approaches provide relevant indications of fair value, with no clear advantage to either method. Therefore, Company A weighs both estimates equally, after adjustment for the size and customization of the facility. The weighting is developed based on Company A's assessment of the quantity and quality of observable inputs.</p>
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Example 8-10: Business Combination—Fair Value of Building Acquired—Tangible Asset

Determine unit of account	Company B owns the factory building and underlying land it uses to manufacture and assemble its refrigerators. The building and the land are the units of account.
Evaluate valuation premise	Company A considers the valuation premise and whether the highest and best use of the building is with other assets or on a standalone basis. The factory building used by Company B has had some “customisation,” but the factory is not unique and could be used for a variety of purposes, including another industrial or consumer products manufacturing business. Company A determines that there are no complementary assets that would maximize its value. As a consequence, Company A concludes that the highest and best use of the building is on a standalone basis.
Assess principal market	Company A determines that it has access to the principal market.
Determine the most advantageous market	Because Company A has access to the principal market, it need not consider the most advantageous market.
Determine valuation technique	Company A considers the use of each of the valuation techniques as follows: <ul style="list-style-type: none">• Cost approach—Company A assesses the amount required to replace or substitute the facility in its current state, taking into account its age, remaining useful life and physical deterioration. Company A develops assumptions based on its expectations of potential market participants and determines a potential depreciated replacement cost.• Market approach—Company A obtains data regarding sales of several industrial buildings used for similar purposes in the same geographical area. The information relates to buildings that have been sold in the last two years; however, none are of the same size as the facility used by Company B.• Income approach—Company A notes that certain commercial buildings have readily available rental data that could be used as inputs for an income approach. Based on research conducted through real estate agents, Company A discovers that there are two similar leased buildings in the general vicinity and that the rental rates are in a close range. However, Company B’s building is larger than the two leased buildings for which it was able to obtain information.

(continued)

Determine fair value	<p>Company A evaluates and weighs the results of each valuation approach to develop an estimate of fair value:</p> <ul style="list-style-type: none"> • The market approach included data that was reasonably current and reflected the advantageous location of Company B's facility; however, the purchase prices needed to be adjusted for the size and customisation of Company B's factory building. • The income approach also incorporated current data that reflected Company B's advantageous location. However, similar to the market approach, the rental data does not incorporate the size and customisation of Company B's factory building. • The cost approach provided an estimate of fair value; however, it is difficult to directly replicate the asset, either exactly or through a substitute of equal utility. There is also a three to five year lead period necessary to obtain permits and complete design and construction. Therefore, Company A determines that the information provided by the cost approach is not relevant and will not be weighted in the final determination of fair value. <p>Based on these factors, Company A concludes that both the market and income approaches provide relevant indications of fair value, with no clear advantage to either method. Therefore, Company A weighs both estimates equally, after adjustment for the size and customisation of the facility. The weighting is developed based on Company A's assessment of the quantity and quality of observable inputs.</p>
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Example 8-11: Business Combination—Fair Value of Brand Name Acquired—Intangible Asset

Key considerations in completing this valuation are as follows.

Determine unit of account	In accordance with the fair value standards, the unit of account is determined based on the level at which the asset or liability is aggregated or disaggregated in accordance with U.S. GAAP or IFRS applicable to the particular asset or liability being measured. The brand name is an identifiable asset that requires separate valuation.
Evaluate valuation premise	Company A considers whether the highest and best use of the intangible asset will be in combination with other assets or on a standalone basis. In this case, Company B has complementary assets that would provide additional value to a market participant. The highest and best use of the brand name to market participants is to continue to manufacture and sell <i>SuperCool</i> refrigerators using the other production assets as a group (as was done previously by Company B). The fair value is measured based on the price expected to be received, assuming the other complementary assets were available to market participants.
Assess principal market	Company A determines that it has access to the principal market.
Determine the most advantageous market	Because it has access to the principal market, Company A need not consider the most advantageous market.

(continued)

Determine valuation technique	<p>Market participants in the principal market use the following valuation techniques:</p> <ul style="list-style-type: none"> • Cost approach—As the analysis relates to a brand name, the cost approach would reflect the costs to replicate the brand. Management considers the cost approach but concludes that the investment of time and capital are substantial and that market participants would not consider this approach when pricing the <i>SuperCool</i> brand name. • Market approach—Company A determines that business combinations have taken place in which the brand name was an important element, and that certain brands have been separately bought and sold. None of these transactions were for similar manufacturing companies, or for companies making products marketed to similar demographic and socioeconomic groups. Market information can be obtained from transactions in which brand names are licensed. As such, management concludes that fair value cannot be reliably determined strictly from these market transactions. • Income approach—Company A has determined the relief-from-royalty method is an appropriate method to measure the fair value of the acquired trade name. The assumptions used in applying this technique include the following: <ul style="list-style-type: none"> – Revenue—Projected revenue from the trade name over the period of expected cash flows, estimated to be twenty-five years. – Royalty rate—Based on available information about market participant royalty rates. Actual royalty rates charged by the acquired company, if any, (Company B) should be corroborated by other market evidence. – Discount rate—Based on an assessment of the relative risk of the cash flows and the overall entity’s cost of capital, management determines a reasonable estimate of market participant assumptions regarding a risk-adjusted discount rate. – Tax amortisation benefits—The present value of tax benefits generated from amortising the intangible asset. See further discussion on tax amortisation benefits in BC 7.
Determine fair value	Company A determines that the income approach is the only valuation approach that is appropriate in the circumstances and provides the best estimate of fair value.

8.4.3 Business Combination—Financial Liabilities

8.4.3.1 Debt

In circumstances when an entity with listed debt is the subject of a takeover offer, market evidence shows that the listed price of the debt changes to reflect the credit enhancement to be provided by the acquirer (i.e., it reflects the market’s perception of the value of the liability if it is expected to become a liability of the new group). If the acquiring company does not legally add any credit enhancement to the debt or in some other way guarantee the debt, the fair value of the debt may not change.

The business combinations standards require the fair value of debt to be determined as of the acquisition date. If an entity has public debt, the quoted price should be used in any case. If the entity has public debt and is valuing nonpublic debt, the price of the public debt should likely be used as an input in the valuation of the nonpublic debt.

Question 8-5: How should a company measure the fair value of debt assumed in a business combination?

PwC Interpretive Response

The credit standing of the combined entity in a purchase business combination will often be used as the basis for the interest rate to be used when determining the fair value of the acquired debt. For example, if on a post-acquisition basis, acquired debt is credit-enhanced because the debt holders become general creditors of the new (combined) entity, the acquired debt would follow the characteristics of the acquirer's credit (or something in between the credit standing of the two entities, depending on the facts and circumstances).

However, if the credit characteristics of the debt acquired remain unchanged after the acquisition because the debt remains secured by the net assets of the acquired entity, or other credit features are identifiable and remain in place, it may not take on new characteristics as a result of the acquisition. In that case, the prior credit characteristics of the obligation would survive the transaction as the basis for valuing the liability.

8.4.3.2 Fair Value of Noncontrolling Interest

Any noncontrolling interest (NCI) in the acquiree is measured at its acquisition-date fair value under U.S. GAAP. At the date of acquisition, IFRS preparers have the option to measure the NCI in an acquiree either at fair value or at the NCI's proportionate share of the acquiree's identifiable net assets (IFRS 3.19). If an entity is required to or elects to value the NCI at fair value, the measurement approach will depend on whether the NCI remains publicly traded. The fair value for NCI that remains publicly traded post acquisition will be determined using the NCI's quoted market price. A reasonable method of estimating the fair value of the NCI, in the absence of quoted prices, is to gross up the fair value of the controlling interest to a 100 percent value, including a control premium,² when appropriate, to determine a per-share price to be applied to the NCI shares. This method reflects the goodwill for the acquiree as a whole, in both the controlling interest and the NCI, which may be more reflective of the economics of the transaction. Use of both the market and income approaches should be considered, as they may provide further support for the fair value of the NCI.

When measuring the fair value of unlisted NCI, entities need to consider the extent to which the NCI is expected to benefit from the synergies of the business combination. The price paid to obtain control typically includes a premium reflecting the synergies the acquirer expects to achieve. If the NCI will also benefit from those synergies, then the fair value measurement will include a premium related to those synergies. If the acquirer intends the synergies to be realised in another part of its group, in which the NCI have no participation, then the fair value of the NCI shares will not include the value of the synergies.

8.4.3.2.1 NCI—Market Approach

Entities may need to consider using the market approach to value an NCI that is not publicly traded and for which the controlling interest value is not an appropriate

² Although there is no control inherent in the NCI, the NCI may receive a portion of the overall control premium if it benefits from the synergies inherent in that control premium; therefore, when discussing NCI in this guide we refer to the synergistic benefit as a control premium.

basis for estimating fair value. The first step in applying this method is to identify publicly traded companies that are comparable to the acquiree. Pricing multiples of revenue or earnings are calculated from the guideline companies; these are analysed, adjusted, and applied to the revenue and earnings of the acquiree. Applying the pricing multiples to the acquiree's earnings produces the fair value of the acquiree on an aggregate basis. This is then adjusted to reflect the pro-rata NCI and control premium, if required, for any synergies from the acquisition that would be realised by the NCI. Similarly, the pricing multiples could be applied directly to the pro rata portion of the acquiree's earnings to estimate the fair value of the NCI.

The following example illustrates this.

Example 8-12: Measuring the Fair Value of the Non-Controlling Interest—Market Approach

Entity A acquires 350 shares, or 70 percent, of Entity B, which is privately held, for CU 2,100 or CU 6.00 per share. There are 500 shares outstanding. The outstanding 30 percent interest in Entity B represents the NCI that is required to be measured at fair value by Entity A. At the acquisition date, Entity B's most recent annual net income was CU 200. Entity A used the public entity market multiple method to measure the fair value of the NCI. Entity A identified three publicly traded companies comparable to Entity B, which were trading at an average price-to-earnings multiple of 15. Based on differences in growth, profitability, liquidity, and product, Entity A adjusted the observed price-to-earnings ratio to 13 for the purposes of valuing Entity B.

To measure the fair value of the NCI in Entity B, Entity A may initially apply the price-to-earnings multiple in the aggregate as follows:

Entity B net income	CU 200
Price-to-earnings multiple	13
Fair value of Entity B	CU 2,600
Entity B NCI interest	30%
Fair value of Entity B NCI	CU 780

Entities will have to understand whether the consideration transferred for the 70 percent interest includes a control premium paid by the acquirer and whether that control premium would extend to the NCI when determining its fair value. In this example, the fair value of Entity B using the market approach is CU 2,600, which represents a minority interest value because the price-to-earnings multiple was derived from per-share prices (that is, excludes control). If it had been determined to be appropriate to include the control premium in the fair value estimate, grossing up the 70 percent interest yields a fair value for the acquiree as a whole of CU 3,000 (CU 2,100/0.70), compared to the CU 2,600 derived above, and a value for the NCI of CU 900.

8.4.3.2.2 NCI—The Income Approach

The income approach may be used to measure the NCI's fair value using a discounted cash flow analysis to measure the value of the acquired entity's whole business. The analysis performed as part of assigning the fair value to the assets acquired and liabilities assumed may serve as the basis for the fair value of the acquiree as a whole. Again, understanding whether a control premium exists and

whether the NCI shareholders benefit from the synergies from the acquisition is critical in measuring the NCI's fair value.

If it is determined that a control premium exists and the premium would not extend to the NCI, there are two methods widely used to remove the control premium from the fair value of the business enterprise. One method is to calculate the pro rata NCI to the value of the business enterprise and apply a minority interest discount. Another method adjusts the projections used for the value of the business enterprise analysis to remove the economic benefits of control embedded in the projections.

8.4.4 Business Combination—Nonfinancial Liabilities

The business combinations standards require most non-financial liabilities assumed (for example, provisions) to be measured at fair value, except as limited by ASC 805-10-15-4 and IFRS 3.21 through 3.31. The fair value standards require the entity's credit risk to be included in determining the fair value of a nonfinancial liability.

Some common nonfinancial liabilities assumed in a business combination include contingent liabilities and deferred revenue.

Example 8-13 below provides an overview of the application of a basic discounted cash flow technique to measure a warranty liability.

Example 8-13: Measuring the Fair Value of a Warranty Liability

Assume that Entity A is acquired in a business combination. Entity A is a manufacturer of computers and related products and provides a three year limited warranty to its customers related to the performance of its products. Expenses related to expected warranty claims are accrued based on the detailed analyses of past claims history for different products. Entity A's experience indicates that warranty claims increase each year of a contract based on the age of the computer components.

Entity A has three distinct computer products. One of its product lines (Line 1) has significant new components for which there is little historical claims data, and other components for which historical claims data is available. Taking into account the liability's short-term nature and the expected cash flows over the warranty period, the acquirer determines that a 7 percent discount rate is applicable. In applying the acquisition method, the acquirer should calculate a fair value estimate for warranty claims related to Lines 2 and 3 and to Line 1, if determinable.

Cash flow models can be based on expected cash flows or conditional cash flows. Given the availability of historical claims data, the acquirer believes that the expected cash flow technique will provide a better measure of the warranty obligation.

To develop the probabilities needed to estimate expected cash flows, the acquirer evaluates Entity A's historical warranty claims. This includes evaluating how the performance of the new components used in Line 1 compares to the performance trends of the other components for which historical claims data is available.

The acquirer develops expected cash flows and a probability assessment for each of the various outcomes as shown below. The cash flows are based on different assumptions about the amount of expected service cost plus parts and labour related to a repair or replacement. The acquirer estimates the following outcomes for Line 1, each of which is expected to be payable over the three-year warranty period.

(continued)

The expected cash flows of the warranty claims are as follows.

Product Line 1	Probability	Year 1 CU	Year 2 CU	Year 3 CU
Outcome 1	50%	3,000	6,000	12,000
Outcome 2	30%	8,000	14,000	20,000
Outcome 3	20%	12,000	20,000	30,000

In calculating the amount of the warranty obligation, the acquirer needs to estimate the level of profit a market participant would require to perform under the warranty obligations. The acquirer considers the margins for public companies engaged in the warranty fulfillment business as well as its own experience in arriving at a pre-tax profit margin equal to 5 percent of revenue.¹

The acquirer also needs to select a discount rate to apply to the probability-weighted expected warranty claims for each year and discount them to calculate a present value. Because the expected claim amounts reflect the probability weighted average of the possible outcomes identified, the expected cash flows do not depend on the occurrence of a specific event. In this case, the acquirer determined that the discount rate is 7 percent.³

The table below reflects the expected cash flows developed from the data in the previous table with the value of each outcome adjusted for the acquirer's estimate of the probability of occurrence.

The probability adjusted expected cash flows of warranty claims are as follows.

Product Line 1	Year 1 (CU)	Year 2 (CU)	Year 3 (CU)
Outcome 1	1,500	3,000	6,000
Outcome 2	2,400	4,200	6,000
Outcome 3	2,400	4,000	6,000
Probability weighted	6,300	11,200	18,000
Pre-tax profit (5%)¹	315	560	900
Warranty claim amount	6,615	11,760	18,900
Discount period²	0.5	1.5	2.5
Discount rate³	7%	7%	7%
Present value factor⁴	0.9667	0.9035	0.8444
Present value of warranty claims⁵	6,395	10,625	15,959
Estimated fair value⁶ (rounded)	33,000		

¹ The expected payment should include a profit element required by market participants, which is consistent with the fair value transfer concept for liabilities. The profit element included here represents an assumed profit for this example and should only be viewed from the perspective of how to apply the profit element.

² A mid-year discounting convention was used based on the assumption that warranty claims occur evenly throughout the year.

³ In practice, determining the discount rate can be a challenging process requiring a significant amount of judgment. The discount rate should reflect a risk premium that market participants would consider when determining the fair value of a contingent liability. For performance obligations (for example, warranties, deferred revenues) determination of discount rates may be more challenging than for financial liabilities, as data to assess the nonperformance risk component is not so readily obtainable as it may be for financial liabilities.

⁴ Calculated as $1/(1+k)^t$, where k = discount rate and t = discount period.

⁵ Calculated as the warranty claim amount multiplied by the present value factor.

⁶ Calculated as the sum of the present value of warranty claims for years 1 through 3.

8.4.4.1 Contingent Assets and Liabilities

U.S. GAAP

Postcombination: If recognised at fair value on the acquisition date, the acquirer should develop a systematic and rational basis for subsequently measuring and accounting for assets and liabilities arising from contingencies, depending on their nature. If recorded under ASC 450 on the acquisition date, the reporting entity should continue to follow the guidance in ASC 450. If the acquirer does not recognise an asset or liability at the acquisition date because none of the recognition criteria are met, the acquirer should account for such assets or liabilities in accordance with other GAAP, including ASC 450, as appropriate.

Under ASC 805 and IFRS 3, assets acquired and liabilities assumed in a business combination that arise from contingencies should be recognised at fair value on the acquisition date, if fair value can be determined during the measurement period. However, determining the fair value of contingent liabilities using the transfer concept under the fair value standards presents a number of valuation challenges. While some contingent liabilities are transferred between parties (for example, warranties), contingent liabilities are not regularly transferred to third parties and are typically settled between counterparties.

Consistent with the fair value standards, we believe reporting entities may use the expected value methodology as a starting point for determining the fair value of a contingent liability; however, they should take into account both a profit element and risk premium required by market participants. For cases in which the contingent liability has asymmetrical outcomes, the valuation of the contingent liability should incorporate the range of possible outcomes. This may be accomplished through option pricing models or models that consider multiple possible outcomes.

8.4.4.1.1 Subsequent Measurement of Contingent Assets and Liabilities

U.S. GAAP

The acquirer should develop a systematic and rational approach for subsequently measuring and accounting for assets and liabilities arising from contingencies that may have been recognised at fair value on the date of acquisition. The approach should be consistent with the nature of the asset or liability. For example, the method developed for the subsequent accounting for warranty obligations may be similar to methods that have been used in practice to subsequently account for guarantees that are initially recognised at fair value under ASC 460. Judgment is required to determine the method for subsequently accounting for assets and liabilities arising from contingencies.

In addition, subsequently measuring an acquired asset or liability at fair value is not considered a systematic or rational approach, unless required by other GAAP. Companies should develop policies for systematically and rationally transitioning from the initial fair value measurement of assets or liabilities arising from contingencies on the acquisition date to subsequent measurement and accounting at amounts other than fair value, in accordance with other GAAP.

Judgment is required to determine the method for subsequently accounting for assets and liabilities arising from contingencies. However, it would not be appropriate to recognise an acquired contingency at fair value on the acquisition date and then in

the immediate subsequent period value the acquired contingency in accordance with ASC 450, with a resulting gain or loss for the difference.

IFRS

In the reporting periods subsequent to the acquisition date, contingencies recognised at the acquisition date are measured at the higher of (i) the amount that would be recognised under IAS 37 (i.e., best estimate) or (ii) the amount initially recorded less cumulative amortisation recognised in accordance with IAS 18 [IFRS 3.56]. As a result, there may be a loss recognised immediately following the acquisition accounting.

8.4.4.2 Deferred Revenue

Deferred revenue in the context of a business combination represents an obligation to provide products or services to a customer when payment has been made in advance and delivery or performance has not yet occurred. Deferred revenue is a liability and represents a performance obligation. The deferred revenue amount recorded on the acquiree's balance sheet generally represents the cash received in advance, less the amount amortised for services performed to date, rather than a fair value amount. The fair value of a deferred revenue liability typically reflects how much an acquirer has to pay a third party to assume the liability (that is, a transfer of the liability). Thus, the acquiree's recognised deferred revenue liability at the acquisition date is rarely the fair value amount that would be required to transfer the underlying contractual obligation.

Generally, there are two methods of measuring the fair value of a deferred revenue liability. The first method, commonly referred to as a bottom-up approach, measures the liability as the direct, incremental costs to fulfill the legal performance obligation, plus a reasonable profit margin if associated with goods or services being provided, and a premium for risks associated with price variability. Direct and incremental costs may or may not include certain overhead items, but should include costs incurred by market participants to service the remaining performance obligation related to the deferred revenue obligation. These costs do not include elements of service or costs incurred or completed prior to the consummation of the business combination, such as upfront selling and marketing costs, training costs, and recruiting costs.

The reasonable profit margin should be based on the nature of the remaining activities and reflect a market participant's profit. If the profit margin on the specific component of deferred revenue is known, it should be used if it is representative of a market participant's normal profit margin on the specific obligation. If the current market rate is higher than the market rate that existed at the time the original transactions took place, the higher current rate should be used. The measurement of the fair value of a deferred revenue liability is generally performed on a pre-tax basis and, therefore, the normal profit margin should be on a pre-tax basis.

An alternative method of measuring the fair value of a deferred revenue liability (commonly referred to as a top-down approach) relies on market indicators of expected revenue for any obligation yet to be satisfied. This approach starts with the amount that an entity would receive in a transaction, less the cost of the selling effort (which has already been performed) including a profit margin on that selling effort. This method is used less frequently, but is commonly used for measuring the fair value of remaining post-contract customer support for licensed software.

If deferred revenues exist at the time of the business combination, and intangible assets are valued using the income approach (for example, the relief from royalty method) or the multi-period excess earnings method), then adjustments may be required to the projections to eliminate any revenues reflected in those projections that have already been received by the acquiree (that is, the acquired cash includes the deferred revenue amount). If the excess earnings method is used, the expenses and required profit on the expenses that are captured in valuing the deferred revenue are also eliminated from the projections. However, if cash based PFI is used in the valuation, and therefore acquired deferred revenues are not reflected in the PFI, then no adjustment is required in valuing intangible assets using the income approach.

8.4.5 Accounting for Costs Associated with Exit or Disposal Activities

U.S. GAAP

ASC 420 requires recognition of a liability for a cost associated with an exit or disposal activity when the liability is incurred. In accordance with ASC 420, the amount recognised should be measured initially at its fair value using the ASC 820 framework.

However, ASC 420 does not require subsequent measurement of the exit liability at fair value. ASC 420-10-35-1 states:

In periods subsequent to initial measurement, changes to the liability, including a change resulting from a revision to either the timing or the amount of estimated cash flows over the future service period, shall be measured using the credit-adjusted risk-free rate that was used to measure the liability initially.

ASC 420-10-35-4 states:

Changes due to the passage of time shall be recognized as an increase in the carrying amount of the liability and as an expense (for example, accretion expense). Accretion expense shall not be considered interest cost for the purposes of applying Subtopic 835-20.

IFRS

There is no specific fair value requirement related to exit or disposal cost activities.

Chapter 9: Consideration of Credit Risk

Chapter 9: Consideration of Credit Risk

9.1 Overview

One of the key challenges for many reporting entities in estimating fair value in accordance with the fair value standards has been determining and incorporating the impact of nonperformance risk, including credit risk, into the fair value measurement.

Nonperformance risk is the risk that an entity will not perform on its obligation. This risk should be incorporated into a fair value measurement using a market-based estimate that follows the framework of the fair value standards and should be measured from the perspective of a market participant. The concept of nonperformance risk incorporates credit risk and other risk factors, including regulatory, operational, and commercial risks. Credit risk is often the largest component of nonperformance risk, especially when the asset or liability to be measured at fair value is a financial asset or liability. However, credit risk may not be separately observable, making it difficult to determine an appropriate measurement methodology and the inputs necessary to make a reasonable fair value estimate.

This chapter focuses on key considerations for incorporating credit risk in the measurement of fair value. Reporting entities should also consider the other components of nonperformance risk in developing fair value measurements.

9.1.1 Incorporating Credit Risk

Incorporation of counterparty credit risk (predominantly for asset or “positive” exposure positions) and the reporting entity’s own credit risk (predominantly for liability or “negative” exposure positions) is a key component in fair value measurements.

ASC 820-10-35-54E states, in part:

Regardless of the valuation technique used, a reporting entity shall include appropriate risk adjustments, including a risk premium reflecting the amount that market participants would demand as compensation for the uncertainty inherent in the cash flows of an asset or a liability. [...]The risk adjustment shall be reflective of an orderly transaction between market participants at the measurement date under current market conditions.

IFRS 13.B16 states, in part:

A fair value measurement should include a risk premium reflecting the amount that market participants would demand as compensation for the uncertainty inherent in the cash flows. Otherwise, the measurement would not faithfully represent fair value.

The fair value standards require that reporting entities consider the effect of nonperformance risk, including credit risk, in determining the fair value of both assets and liabilities. In evaluating the credit risk component of nonperformance risk, reporting entities should consider all relevant market information that is reasonably available. Factors that may impact the credit risk exposure include:

- master netting arrangements¹ or other netting arrangements
- collateral and other credit support

¹ Refer to ASC 815-10-45-5 for a further description of master netting arrangements.

- structure of the transaction
- specific characteristics of the instrument being measured

In general, the credit risk incorporated in the fair value measurement will vary depending on the exposure as follows:

- *Positive exposures*—The credit risk of the counterparty should be incorporated into the calculation of the credit risk adjustment. The reporting entity would incorporate the effect of the obligor’s credit risk in determining the price that a market participant would be willing to pay for the asset.
- *Negative exposures*—The reporting entity should incorporate its own credit risk as a component of the fair value measurement. ASC 820-10-35-18A and IFRS 13.44 explicitly require the inclusion of nonperformance risk (including credit risk) in the valuation of any liability reported at fair value.

Market participants use a number of different approaches to estimate the impact of credit risk on the fair value measurement, which range from very complex to relatively straightforward. Any approach should consider factors such as:

- How the underlying exposure will behave over time—For example, the exposure on a single currency interest rate swap would be expected to decay to zero over the remaining life of the transaction as payments are made, whereas the present value at the reporting date of the expected exposure for any time between the reporting date and maturity on a forward contract would remain constant.
- How the credit riskiness of the reporting entity or the counterparty is dependent on the remaining life of the exposures—For example, a higher credit risk adjustment is typically required for longer-dated risk, and hence the credit riskiness of the reporting entity or the counterparty may decrease between reporting periods as the remaining maturity of the exposure decreases.
- How credit mitigants will affect the net exposure—For example, if the credit risk related to a group of assets and liabilities is measured together (i.e., legal right of offset exists between assets and liabilities, resulting in a net exposure based on the eligible portfolio), how will the portfolio exposure change over time? If collateral is required, the thresholds in the contractual agreements governing the collateral posting may be more relevant to how the net exposure behaves over time and how market participants would assess credit exposure than the net exposure implied based on the actual collateral posted on the reporting date.

The sophistication of a reporting entity’s calculation of the impact on fair value of the credit risk may be affected by the nature and extent of its activities. For example, reporting entities with material complex derivatives portfolios may need to apply sophisticated scenario-based approaches that consider market-based predictions of their potential future exposure. Reporting entities with limited and less complex derivative activities may conclude that a simplified approach provides a sufficiently accurate estimate of the impact of credit risk on fair value.

Reporting entities should continue to monitor market developments to ensure that their methodologies remain appropriate as derivatives valuations, including the incorporation of credit risk, continue to evolve to address market and regulatory impacts. See FV 7.6. Reporting entities should also document both the methodology applied and the rationale for the decisions made in determining an appropriate methodology for incorporating credit risk into their fair value measurements under the fair value standards.

9.1.1.1 Other Considerations

For some instruments, no separate measurement of credit risk is required as the quoted prices of these instruments would incorporate the risk of nonperformance. In general, a reporting entity will not be required to separately measure nonperformance risk for assets and liabilities with observable prices in active markets. Such prices already reflect a market participant's view of value, including credit risk, to the extent it is applicable. Instruments for which no credit risk adjustment is required include:

- *Publicly traded equity securities*—Equity securities accounted for in accordance with ASC 320 and IAS 39 often have observable prices in active markets (Level 1 fair value measurements). As equity represents the residual value in a company, credit risk per se is not measured. However, the market view of the company's potential cash flows and the riskiness of those potential cash flows (including credit risk) is inherent in the market price.
- *Publicly traded debt*—The fair value of a reporting entity's public debt can generally be determined based on available market prices (which are Level 1 or Level 2 inputs, depending on whether the traded security is identical and on the level of trading for a particular fixed income security). If quoted information is available for the same issue, no adjustment for credit risk is required.
- *Cleared contracts*—Generally, clearing houses will require the posting of margin or collateral in order to manage counterparty credit risk. For example, on the Chicago Mercantile Exchange, margin postings are required daily on futures contracts in order to mitigate the risk that the holder will not perform. As a result, the valuation of a financial derivative contract cleared through a clearing house that requires a maintenance margin or another form of collateral arrangement would reflect an adjustment of the loss assumptions to include this collateral protection.
- *Fully collateralized transactions*— Certain contracts may be fully collateralized on both sides if the terms of the credit support agreement (CSA) require collateral that is posted daily and not subject to any threshold value. In that case, no further credit risk adjustment may be necessary.

In cases in which quoted prices that incorporate credit risk are not available due to the lack of a liquid market for a particular instrument, the reporting entity should consider the risk of nonperformance, including credit risk, in developing its fair value measurement.

PwC Observation: The determination of credit risk adjustments can be complex, and may require consideration of future expectations of exposure, credit risk, and mitigating factors. To facilitate discussion, the remainder of this section will consider credit risk measurement under the following simplifying assumptions:

- The market value of a position at a point in time approximates the exposure
- Assets approximate positive exposures, and liabilities approximate negative exposures
- Collateral posted daily is assumed to be effectively instantaneously posted, with no potential for default by the posting entity
- Collateral is always posted as required under the terms of the CSA.

Market participants should consider and memorialize the rationale, appropriateness, and support for any assumptions made in their assessment and quantification of the credit risk adjustment.

9.1.1.2 Timing

The credit risk adjustment should be reconsidered in each period in which fair value measurements are reported because the market view of credit risk will vary depending on the credit quality of the counterparties, the value of the underlying asset or liability, market volatility, and other factors that are dynamic. The following discussion highlights some of the questions that may arise in practice as reporting entities consider measurement of the credit risk adjustment.

Question 9-1: For assets and liabilities reported at fair value, is an evaluation of credit risk required each reporting period if there has been no change in credit rating since origination?

PwC Interpretive Response

Yes. A credit risk adjustment should reflect all changes in creditworthiness of the reporting entity or the counterparty, as applicable, which may not be reflected in their **credit ratings**. For example, a decline in the reporting entity's **credit default swap rate**, or an overall change in the **credit spreads** for the reporting entity's industry sector may indicate a change in the market price of its credit. Credit spreads and risk can change without a change in credit ratings. The credit risk adjustment should incorporate all available market information, including changes in the company's standing within its credit category, changes in the market price of credit or the market value of the asset or liability being measured, as well as other factors.

This concept is illustrated in ASC 820-10-55-59 [IFRS 13.IE34], which state, in part:

On January 1, 20X7, Entity A, an investment bank with a AA credit rating, issues a five-year fixed rate note to Entity B. The contractual principal amount to be paid by Entity A at maturity is linked to the Standard & Poor's 500 index [an equity index]. No credit enhancements are issued in conjunction with or otherwise related to the contract (that is, no collateral is posted and there is no third-party guarantee). Entity A elects to account for the entire note at fair value in accordance with paragraph 815-15-25-4 [designated this note as at fair value through profit or loss]. The fair value of the note (that is the obligation of Entity A) during 20X7 is measured using an expected present value technique. Changes in fair value are as follows:

b. Fair value at March 31, 20X7. By [During] March 20X7, the credit spread for AA corporate bonds widens, with no changes to the specific credit risk of Entity A. The expected cash flows used in the expected present value technique are discounted at the risk-free rate (using the treasury yield [government bond] curve at March 31, 20X7, plus the current market observable AA corporate bond spread to treasuries [government bonds], if nonperformance risk is not already reflected in the cash flows, adjusted for Entity A's specific credit risk (that is, resulting in a credit-adjusted risk-free rate). Entity A's specific credit risk is unchanged from initial recognition. Therefore, the fair value of Entity A's obligation changes as a result of changes in credit spreads generally. Changes in credit spreads reflect current market participant assumptions about changes in nonperformance risk generally, changes in liquidity risk, and the compensation required for assuming those risks. Emphasis added.

As this example illustrates, a reporting entity is required to assess credit risk each period, even if there is no change in the related credit rating, because adjustments

for credit are not triggered solely by a change in credit rating. In fact, the credit risk to the entity changes simply because of the passage of time. Because there is less time for the parties to default, absent other changes to the counterparty credit standing, the default probabilities will typically be lower.

Question 9-2: Can entities assume the effect of credit risk on a financial instrument's fair value is immaterial?

PwC Interpretive Response

No. However, an entity may be able to demonstrate that for some financial instruments the effect of credit risk is immaterial, provided it has sufficient evidence to support this. For example, this might be the case if:

- any credit risk is substantially mitigated, for example, by the posting of collateral or netting arrangements; or
- there is persuasive evidence that demonstrates that the value of similar derivatives is not materially affected by the credit risk of the relevant parties to the transaction; or
- there is persuasive evidence that the credit riskiness of the parties to the transaction has not changed and that all parties continue to have low credit risk.

What comprises sufficient evidence that the effect of credit risk is immaterial will vary depending on the facts and circumstances. Such evidence could be qualitative or quantitative and a numerical calculation may not be required in all cases.

The assessment should take into the account the effect on both the financial instrument's carrying amount and on hedge effectiveness for derivatives in hedging relationships. For example, if a hedge relationship is near 100 percent effective before considering the effect of credit risk, it may be easier to demonstrate that any adjustment would not materially affect the financial statements than if a hedge is, say, close to 80 percent effective before considering the effect of credit risk. This is important because even a minor change could result in the hedge not meeting the 80%-125% threshold, in which case the hedging relationship might no longer qualify for hedge accounting. See FV 7.7.

Question 9-3: If the original contract price included an adjustment for credit risk, does the reporting entity need to continue to evaluate the credit risk adjustment each period?

PwC Interpretive Response

Yes. The effect of nonperformance risk, including credit risk, is typically priced into the terms of a contract at inception but should be re-evaluated each reporting period. For example, credit risk may be incorporated into the pricing of a derivative instrument through an adjustment to the imputed interest rate, other pricing terms, or contractual credit enhancements (such as requirements to post collateral or letters of credit).

Similarly, credit risk is priced into long-term debt through the credit spread, which may vary depending on seniority of debt and other factors that impact credit risk. Because those terms are established as part of the contractual arrangement and dictate the contractual cash flows, some reporting entities have questioned whether

an ongoing evaluation of credit risk is necessary in connection with the fair value measurement process at each reporting date.

Typically, commercial contract terms do not include provisions that reset pricing or cash flows due to changes in credit spreads or the credit standing of the issuing entity. As a result, credit risk should be reconsidered each period to incorporate contractual and market changes that may impact the credit risk measurement. Note that some contracts may require posting of additional collateral or other credit enhancements for credit deterioration or other changes in fair value. This type of protection may impact the calculation of the credit risk adjustment but does not eliminate the requirement to re-evaluate the potential exposure to credit risk at each reporting date.

Question 9-4: If a reporting entity intends to settle a non-prepayable liability shortly after the end of the reporting period (i.e., the borrower intends to negotiate with the lender an early termination of the agreement after the reporting date), can settlement value be used as a proxy for fair value?

PwC Interpretive Response

No. The basic premise in the calculation of the fair value of a non-prepayable liability pursuant to the fair value standards is that the liability lives on until its maturity. Therefore, fair value should be determined based on the transfer value of the liability, inclusive of nonperformance risk. Any difference between the settlement amount and fair value measurement of the liability should be recognised in the period of settlement.

If the liability includes a prepayment option that was not separated as an embedded derivative, the terms of the prepayment option would impact the calculation of fair value. For example, if the prepayment option is deep in-the-money, the fair value may be close to the strike price as market participants would anticipate the prepayment of the liability by the borrower in the near term and therefore require compensation commensurate with such a possibility.

9.1.2 Market Participant Perspective

The measurement of credit risk should be based on market participant assumptions. ASC 820-10-35-9 and IFRS 13.22 and 13.23 state:

A reporting entity shall measure the fair value of an asset or a liability using the assumptions that market participants would use in pricing the asset or liability, assuming that market participants act in their economic best interest. In developing those assumptions, a reporting entity need not identify specific market participants. Rather, the reporting entity shall identify characteristics that distinguish market participants generally, considering factors specific to all of the following: (a) the asset or liability, (b) the principal (or most advantageous) market for the asset or liability, and (c) market participants with whom the reporting entity would enter into a transaction in that market.

Consistent with this guidance, credit risk should be measured based on market participant assumptions about the risk of default and how that risk will be valued. Market-based assumptions take priority over the reporting entity's point of view of its own credit risk or the credit risk associated with a specified counterparty. Accordingly, in calculating the credit risk adjustment, a reporting entity should consider all sources of information, available without undue cost or effort, that

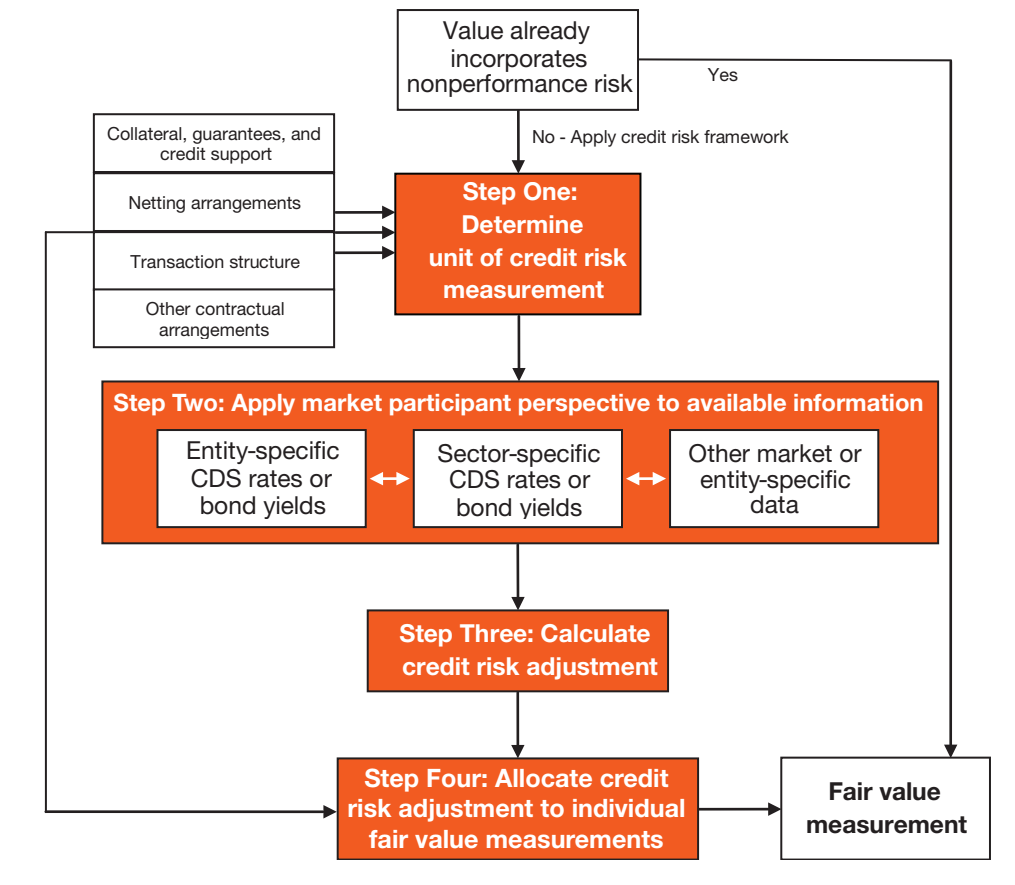
market participants would consider when determining how much they would pay to purchase an asset or demand to assume a liability.

Available information can be adjusted and weighted based on facts and circumstances if the reporting entity believes it is not reflective of the characteristics of the liability being valued or market conditions. This will require the use of professional judgment, which is a key element in fair value measurements. The rationale for the approach used for assessing credit risk and the basis for adjustments made in measuring fair value should be documented as part of the reporting entity's credit risk assessment.

9.2 Introduction to a Credit Risk Measurement Framework

There are many factors that may impact the measurement of credit risk, including the nature of the instrument being measured (e.g., investment, debt, derivative), whether it is in an asset or liability position, and whether there are quoted prices available that already incorporate credit risk. This section discusses an overall framework that can be applied to assist in the calculation of a credit risk adjustment for a specific asset or liability and discusses specific implementation issues. Key elements of the approach are depicted in the flowchart.

Exhibit 9-1



9.2.1 Step One: Determine Unit of Measurement for Credit Risk

As the first step in measuring credit risk, the reporting entity must determine the unit of measurement (i.e., what is being measured). Credit risk may be measured based on a grouping of instruments that differs from the unit of account for balance sheet presentation purposes.

For example, in measuring the fair value of a derivative instrument, the unit of account is the individual derivative instrument. However, credit risk may be estimated by some market participants on an individual transaction basis, whereas other market participants may evaluate credit risk on multiple contracts involving a single counterparty on a “net” basis if the contracts are covered under one master netting agreement. These factors add another consideration to the calculation. When credit risk is evaluated across a group of individual transactions, entities may be required to allocate the credit risk adjustment to a lower unit of account.

The unit of measurement for purposes of determining the credit risk adjustment (“unit of credit risk measurement”) should incorporate all relevant factors, including the profile of the asset or liability, its type (debt, derivative or warrant), terms (maturity date and par or notional amount), and other attributes (priority, recourse, and secured or non-secured status). In addition, credit enhancements, such as collateral-posting requirements, master netting arrangements on derivatives, parent company guarantees, and transaction structure should be considered.

Due to the potentially significant effect of these factors on the calculation of the credit risk adjustment, a reporting entity should ensure that it obtains a full understanding of its rights and obligations associated with a particular contract or counterparty prior to calculating the credit risk adjustment. Specific items that may affect the unit of credit risk measurement include the following.

Collateral, Guarantees, and Credit Support

Requirements to post collateral, guarantees, letters of credit, and similar forms of credit enhancement may reduce the potential credit risk exposure. In addition to considering posted collateral, a reporting entity should ensure it has a comprehensive understanding of all credit support arrangements. For example, a provision in an investment agreement that requires the counterparty to post collateral if the counterparty’s credit rating is downgraded will limit the reporting entity’s potential exposure to loss and should be incorporated into the unit of credit risk measurement.

Master Netting Arrangements or Other Netting Agreements

A master netting arrangement generally provides that multiple derivative contracts with the same counterparty will be offset in the event of a default on any one of the contracts. The netting provisions result in a credit risk exposure based on the “net” position rather than at the individual contract level. Master netting arrangements may also incorporate other positions with the counterparty (e.g., non-derivative obligations and other forms of collateral) in the event of default.

Master netting arrangements or other agreements that allow for netting of assets and liabilities held with the same counterparty will change the potential risk exposure. For example, assume a company has contracts in both asset and liability positions with a particular counterparty. If the company has a master netting arrangement in place, it may calculate the credit exposure based on the net exposure of the asset and liability positions. However, absent such an arrangement, it would be required to separately

calculate the exposure for assets and liabilities based on the market participant view of counterparty credit risk and its own credit risk, respectively.

In evaluating such arrangements, a reporting entity should consider whether the arrangement permits netting across contract types (e.g., interest rate swaps, different types of commodity contracts) or product types (e.g., physical versus cash settlement). The reporting entity should evaluate each legal entity it transacts with separately. In some cases, an arrangement may cover transactions with multiple subsidiaries of a specific company. However, in other instances, each subsidiary may be covered by a separate arrangement. The specifics of such agreements may have a significant impact on the reporting entity's exposure to loss and the calculation of the related credit risk adjustment.

Structural and Other Contract Considerations

A particular contract may incorporate other specific risks that may impact credit risk. For example, performance on a particular contract, such as delivery of an asset to a specific counterparty, may depend on receipt of an asset from another counterparty. In that case, the credit exposure on both contracts may be tied to performance by the party responsible for initial delivery. Any such contractual provisions should be considered in developing a credit risk adjustment.

Impact of Third Party Credit Enhancements

In accordance with ASC 825-10-25-13 and ASC 820-10-35-18A, and IAS 39 (unless IFRS 4 applies) and IFRS 13.44, the issuer of a liability with an inseparable third-party credit enhancement (such as a guarantee) should **not** include the effect of the credit enhancement in the fair value measurement of the liability. The credit risk adjustment for the liability would be calculated as though there were no third-party guarantee, letter of credit, or other form of credit enhancement.

For example, long-term debt and derivative instruments are frequently issued with a third-party guarantee or an underlying credit support arrangement. However, the issuer of the debt or derivative should ignore the credit enhancement in calculating its credit risk adjustment and revert to its own standalone credit risk. This guidance does not apply to credit enhancements granted to the issuer of the liability provided by governmental entities or to arrangements between reporting entities within a consolidated or combined group (for example, a parent and subsidiary or entities under common control).

Under IFRS, when a parent provides a guarantee to a bank that has advanced a loan to one of its subsidiaries, the subsidiary has obtained a benefit in that it will pay a lower rate of interest on the loan than it would have otherwise paid for an unguaranteed loan. The subsidiary could fair value the loan from the bank by reference to the normal market rate of interest it would pay on a similar but unguaranteed loan and take the benefit of the interest differential to equity as a capital contribution from the parent. Alternatively, the subsidiary could view the unit of account as being the guaranteed loan and therefore the fair value would be expected to be the face value of the proceeds the subsidiary receives.

IAS 39 does not address the accounting for financial guarantees by the beneficiary and there is no requirement in IAS 24 to fair value non-arms length related-party transactions. Therefore, there is an accounting policy choice as to whether a capital contribution is recognised in equity by the subsidiary for the benefit of the lower rate of interest on the loan than it would have otherwise paid for an unguaranteed loan. In

practice, there is diversity on which accounting policy is applied. However, the majority of subsidiaries do not take the capital contribution to equity approach. Instead, they recognise the fair value of the guaranteed loan. Because of this diversity in practice, entities reporting under IFRS have an additional requirement to disclose whether the credit enhancement is reflected in the fair value of the liability. See FV 5: Disclosures.

This guidance does not apply to the holder of the instrument (e.g., the investor in a debt security or the counterparty to a derivative liability) with an inseparable third-party credit enhancement. The counterparty would consider the benefit of the enhancement in measuring the fair value of the instrument. If the third-party credit enhancement is detachable, there would be two units of account, each of which would be accounted for separately.

Determine Exposure to be Measured

After a reporting entity has identified and assessed all information that may impact the calculation of credit risk, it should calculate the net asset or liability exposure and determine whose credit needs to be measured. This information will be critical in the overall calculation of the credit risk adjustment. Following are specific examples of application of this guidance.

Example 9-1: Impact of Master Netting Arrangements on the Credit Risk Adjustment

As of December 31, 20X8, Company A has several derivative contracts with Counterparty X as follows:

Type of Derivative	Amount	Asset/(Liability)
Interest rate swap	\$(20,000)	Liability
Interest rate swap	10,000	Asset
Total interest rate swaps	(10,000)	Net liability
Gas commodity contract	6,000	Asset
Gas commodity contract	5,000	Asset
Electricity commodity contract	8,000	Asset
Electricity commodity contract	(12,000)	Liability
Total commodity contracts	7,000	Net asset
Total of all contracts	\$ (3,000)	Net liability

As these contracts are with the same counterparty, management initially considers whether it should measure credit risk associated with the net \$3,000 liability. However, in evaluating its netting and other arrangements with Counterparty X, Company A determines that it has a netting arrangement that covers the interest rate swaps and a separate master netting arrangement that affects all commodity derivatives, including both gas and electricity contracts. Accordingly, management determines that it should separately measure credit risk associated with the following:

- Interest rate swaps—Rights and obligations under these contracts are not eligible to be netted with those relating to the commodity derivatives. As of the reporting date, Company A would measure the credit risk for the net interest rate swap liability based on a market participant's view of Company A's credit standing.

(continued)

- **Commodity contracts**—All commodity contracts are covered by a single master netting arrangement. Company A should measure the credit risk associated with the \$7,000 net asset based on a market participant’s view of Counterparty X’s credit.

This example illustrates how the form and substance of commercial agreements can impact the measurement of credit risk and will yield different credit risk adjustments. In this example, if there were no netting arrangements, Company A would calculate the credit risk adjustment separately for each of the derivatives. Alternatively, if all of the contracts were covered under a single master netting arrangement, credit risk would typically be calculated based on a net liability of \$3,000. However, because the swaps and commodity contracts are subject to separate netting arrangements, credit risk should be separately evaluated for the net swap exposure and for the net commodity exposure.

Example 9-2: Impact of Collateral and Credit Support on the Credit Risk Adjustment

This example has the same fact pattern as Example 9-1; however, under the CSA governing the commodity contracts, Counterparty X is required to provide \$5,000 of cash collateral to Company A.

Based on review of the underlying agreements, Company A determines that Counterparty X has collateral associated with the commodity contracts. Company A’s net exposure (the uncollateralized amount) is as follows:

Derivative Type	Position	Collateral	Asset/(Liability)
Interest rate swap	\$ (10,000)	\$ —	\$ (10,000)
Commodity contracts	7,000	(5,000)	2,000
	<u>\$ (3,000)</u>	<u>\$ (5,000)</u>	<u>\$ (8,000)</u>

As a result of the collateral, Company A has a net \$2,000 commodity derivative asset from Counterparty X, instead of the \$7,000 asset calculated in Example 9-1. Therefore, Company A should calculate the credit risk adjustment for the commodity contracts based on the net \$2,000 balance. The posted collateral has no impact on the calculation of the credit risk adjustment associated with the interest rate swap.

In this fact pattern, depending on the requirements of the underlying agreement, Counterparty X also may have been able to meet its collateral obligation by providing a parent company guarantee or a bank letter of credit. See discussion of the impact of such arrangements on the calculation of credit risk adjustments in Example 9-3.

Example 9-3: Impact of Credit Enhancements on the Credit Risk Adjustment

This example has the same fact pattern as Example 9-1; however, Company A's interest rate swaps are supported by a letter of credit issued by Bank B.

In accordance with the requirements of ASC 820-10-35-18A and IFRS 13.44, the obligor (Company A) cannot consider the impact of a third-party credit enhancement in determining the credit risk adjustment. Therefore, Company A is required to measure the credit risk as of the reporting date based on a market participant's assessment of its own credit standing.

However, Counterparty X would still incorporate the impact of the credit enhancement in determining an appropriate credit risk adjustment for the interest rate swap asset recorded on its books. The guidance within ASC 820-10-35-18A has no impact on the measurement of nonperformance by Counterparty X, which may consider the credit enhancement provided by the letter of credit.

Example 9-4: Impact of Contracts Identified as Normal Purchases Under U.S. GAAP or "Own Use" Under IFRS on the Credit Risk Adjustment

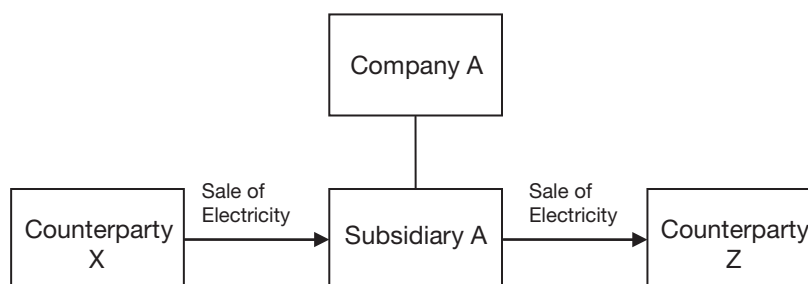
This example has the same fact pattern as Example 9-1, except that Company A also has one electricity contract with Counterparty X that qualifies, and has been designated, as a normal purchase in accordance with ASC 815 or identified as an "own use" contract in accordance with IAS 39. As a result, the contract is accounted for as an executory contract and is not recorded nor disclosed at fair value in the financial statements.

The contract has a liability balance of \$5,000 as of December 31, 20X8. It is also subject to the overall commodity master netting arrangement between Company A and Counterparty X. Thus, a question arises as to whether the executory contract should be included in determining the credit risk adjustment for the other contracts with the same counterparty and subject to the same commodity master netting arrangement. If a reporting entity received collateral from a particular counterparty, it should determine whether any of the collateral relates to contracts designated as normal purchases and normal sales or identified as "own use" contracts. If some of the collateral relates to such off-balance sheet contracts, the reporting entity should allocate the collateral between contracts recorded at fair value and those accounted for as executory contracts prior to the calculation of the credit risk adjustment.

The fair value standards apply to derivatives recorded at fair value in the financial statements and the credit risk adjustment is intended to reflect the credit risk associated with recognized contracts in the fair value measurement. Therefore, the portion of the credit risk adjustment for such executory contracts, and other contracts that are not recorded at fair value on the balance sheet, although included in the determination of the credit risk adjustments associated with a specific counterparty, will not be included in the fair value measurement of the derivatives.

Example 9-5: Impact of Deal Structure on the Credit Risk Adjustment

In this example, one of Company A's subsidiaries enters into a structured transaction with Counterparty X and Counterparty Z, moving the in-the-money electricity commodity contract with Counterparty X (the \$8,000 commodity asset in Example 9-1 above), into a separate subsidiary. Subsidiary A is purchasing electricity from Counterparty X under this contract. Subsidiary A then enters into a power sales agreement with Counterparty Z. The structure of this transaction is as follows:



Performance on the Counterparty Z sales agreement is dependent on the receipt of the electricity from Counterparty X; Counterparty Z has no recourse to the overall assets of Company A if Subsidiary A fails to perform. Subsidiary A has no assets other than the power purchase contract with Counterparty X.

In this transaction, performance by Subsidiary A on the contract with Counterparty Z depends on the receipt of power from Counterparty X. Thus, if the contract with Counterparty Z is in a liability position, Company A should consider Counterparty X's credit standing in measuring credit risk, rather than solely considering its own credit risk. Company A would consider Counterparty Z's performance risk if the contract were in an overall asset position. In assessing the exposure attributable to Counterparty Z, Company A should also consider the impact of any collateral or other assets held by Subsidiary A.

9.2.2 Step Two: Apply a Market Participant Perspective to Available Credit Information

In measuring credit risk, a reporting entity should acquire and evaluate information about the probability of default and the cost of transferring the risk to another party. Information that a market participant may consider includes the following:

- credit ratings
- market credit spreads
- credit default swap rates
- other public information with respect to a particular or similar entity
- historical default rates

This information may be entity-specific or pertain to a similar entity or particular industry sector. When evaluating the effect of credit risk on a fair value measurement, a reporting entity should consider current market conditions and whether the data it is using appropriately incorporates the most recent market trends. Some data sources may be more responsive to current conditions while other information may lag. These factors should be considered to the extent they represent the

characteristics of the liability. For example, a holding company rating may not be relevant to the liability of a consolidated subsidiary with its own separate rating and/or different credit characteristics.

9.2.2.1 Evaluating Credit Information

Following is a summary of key considerations associated with the use of various sources of default information in calculating the credit risk adjustment. In evaluating available information, reporting entities should also consider the fair value hierarchy. In determining the fair value of an asset or liability, observable inputs should be prioritized over unobservable inputs. However, observable information may not always be available, or unobservable data may be more appropriate in certain circumstances. If observable, market based inputs are available, those inputs cannot be ignored and should be appropriately weighed in the measurement.

Historical Default Rates and Recovery Data

Tables of historical default and related recovery rates are routinely available through ratings agencies (e.g., Standard & Poor's, Moody's) and in academic literature. Published default information is typically provided according to credit rating category (e.g., AAA, AA, A) and term (e.g., one year, five years, ten years).

Many reporting entities traditionally used historical default rates to measure credit risk for counterparties with a particular rating. However, reporting entities should understand the limitations of using this default data, without adjustment, when measuring credit risk for purposes of fair value measurement.

The fair value standards require that the measurement of fair value incorporate a market participant's perspective of nonperformance risk, including credit risk. Historical default information reflects loss information from a designated period in the past, which may not reflect current market developments. For example, if a reporting entity is developing credit risk adjustments for counterparties that are experiencing financial difficulty, historical default rates generally would not reflect current and emerging information. The fact that the data does not reflect current conditions may become an issue of increasing significance in periods of heightened economic fluctuation. In addition, historical default rates may not sufficiently incorporate a market participant perspective about a specific entity.

In measuring credit risk, market participants may make adjustments for market factors, especially in periods of heightened market volatility, or for transactions involving counterparties that are not highly rated or that are experiencing issues or uncertainty as reflected in their credit standing. Historical default rates do not incorporate this type of market-based risk adjustment. Such rates do not reflect a current price for credit risk and may not reflect current market perceptions of the future behavior of the obligor. As described below, bond spreads or credit default swap rates may provide a better indication of "market" rates for credit risk because they result from market participant pricing of credit risk for a specified instrument and counterparty. If entity-specific bond yields or credit default swap rates are not available, comparable industry sector credit information may be a more reliable indication of the market view of risk of default than historical default rates alone.

For these reasons, solely using historical default information to measure credit risk is generally not sufficient. Such information often should be adjusted by incorporating other market data.

Market Credit Spreads

A credit spread is the difference in yield between two debt instruments that is attributable to a difference in credit standing of the respective issuers of those debt instruments. Credit spreads are often quoted in relation to the yield on a credit risk-free benchmark security (e.g., U.S. Treasury bonds) or reference rate (e.g., U.S. Treasury rates or LIBOR). A credit spread for a public company is based on the issuer's publicly traded unsecured debt or by reference to a debt instrument with similar terms and for which credit exposure is considered to be substantially similar. Credit spread information may be obtained from a financial information network, such as Bloomberg, or other debt pricing and quotation sources.

Compared to using unadjusted historical default rates, credit spreads may provide more current information about a market participant's view of the credit risk of a particular counterparty and are often a better reflection of a market participant's perspective. However, there are limitations on the use of this information, as a credit spread is specific to the debt instrument to which it relates, including its liquidity, seniority, tenor, and other terms, and to the instrument's issuer. Furthermore, credit spreads may not reflect current market information as quickly as a credit default swap rate (discussed below).

Publicly quoted credit spreads may not be readily available for private companies. When company-specific spreads are not available, it may be appropriate to consider credit spreads on publicly traded debt with a similar credit rating as an input in calculating the credit risk adjustment.

Credit Default Swap (CDS) Rates

A CDS is a swap contract in which one party (the buyer of credit protection) makes a series of payments to another party (the seller) and, in exchange, receives a payoff if a referenced issuer of a debt instrument defaults or on the occurrence of a specified credit event (such as bankruptcy or restructuring).

A CDS rate refers to the current market rate for the series of payments to the seller of credit protection. The cost of credit as expressed by a CDS rate is approximately the annual rate multiplied by the amount of the reference credit obligation, discounted at LIBOR. A CDS is typically cash-settled. However, it may also be physically-settled by delivery of the underlying instrument in exchange for payment of the contractual amount.

A CDS resembles an insurance policy in the sense that it can be used by the debt holder to hedge against the risk of loss caused by a default on a specific debt instrument. Unlike an insurance policy, however, the company that purchases the credit protection is not required to actually hold an asset or be at risk for loss. CDS rates are generally the most current information about a market participant's point of view of an issuer's credit.

CDS rates can be obtained from financial information services (e.g., Bloomberg) or may be estimated based on appropriate pricing inputs. CDS rates may be quoted for reference securities with different attributes, including, for example, maturity and seniority, and should be adjusted to match these attributes, e.g., comparable length or term of the exposure. Various methods, including interpolation, may be used to adjust the CDS information to the appropriate tenor. Reporting entities should ensure that methodologies are appropriate and consistently applied.

Question 9-5: Assume that for an obligation there is some CDS information available but it is for CDS contracts that are thinly-traded and whose prices are volatile. Should this information still be considered in the calculation of credit risk?

PwC Interpretive Response

Yes, all reasonably available market information should be considered in the calculation of a credit risk adjustment.

The CDS market is large (\$25.5 trillion in notional value as of 2012) and rapidly incorporates current market information in comparison to credit ratings or credit spreads. For example, while Lehman Brothers had an investment grade credit rating the Friday before it declared bankruptcy, the cost for obtaining credit protection on Lehman Brothers debt using a CDS was increasingly more costly over the period leading up to this event.

However, the CDS market is primarily an over-the-counter market and there may be a lack of transparency regarding certain CDS information. In addition, the market is dominated by a few large financial institutions and some CDS contracts are thinly-traded (or may not be traded) and experience significant volatility. Therefore, questions have been raised about the use of unadjusted CDS information in incorporating credit risk in some fair value measurements.

ASC 820-10-35-54A and IFRS 13.89 indicate that a reporting entity should consider all information about market participant assumptions that is reasonably available.

The fair value standards also provide useful guidance in assessing what information should be incorporated in a fair value measurement. This guidance emphasises that reasonably available market information should not be ignored. This concept is further discussed in ASC 820-10-35-54C through 54H and IFRS 13.B37 through B42. Although these paragraphs focus on developing an overall fair value measurement for a financial asset that is not actively traded, they reiterate the priority of market information in a fair value measurement.

Even in times of market dislocation, it is not appropriate to conclude that all market activity represents forced liquidations or distressed sales. However, it is also not appropriate to automatically conclude that any transaction price is determinative of fair value. In determining fair value for a financial asset, the use of a reporting entity's own assumptions about future cash flows and appropriately risk-adjusted discount rates is acceptable when relevant observable inputs are not available.

ASC 820-10-35-54C and IFRS 13.B37 provide factors to consider in determining whether there has been a significant decrease in the volume or level of activity. Those factors may indicate when observable inputs may not be relevant or may require significant adjustment. In addition to cases in which the volume or level of activity has decreased significantly, this might be the case when the available prices vary significantly over time or among market participants, or the prices are not current.

In addition, ASC 820-10-55-90 through 55-98 and IFRS 13.IE48 through IE 58 provide an example of an approach to a fair value measurement that includes available market information and the entity's own assumptions. This example demonstrates specific considerations in incorporating various sources of information in the fair value measurement. As demonstrated in the example, market information obtained from inactive markets still provides a point of reference in the estimation

of fair value. Therefore, in assessing the use of a CDS rate, it is appropriate for the reporting entity to consider the source of the information, the liquidity of the market, and other factors.

When determining the appropriate credit risk adjustment, a reporting entity should not disregard or ignore CDS rates or other inputs that provide information about the market participants' perspectives. Identifying all relevant sources of information, evaluating the accuracy of the information, and weighing the relative merits of all available data is a difficult and judgmental process. A reporting entity should prepare documentation of the information considered and the basis for its conclusions.

In addition, a lack of observable key inputs into the determination of the credit risk adjustment, such as in this case, could potentially impact how the valuation is classified in the reporting entity's fair value hierarchy disclosures. See FV 9.3.

9.2.2.2 Comparing Sources of Credit Information

The following table highlights certain advantages and disadvantages associated with incorporating the various indicators of potential default into a credit calculation.

Exhibit 9-2: Comparing Credit Information

Method	Advantages	Disadvantages
Historical default rates	<ul style="list-style-type: none"> • Default information provides an indication of risk and is widely available • Cumulative historical default rates are routinely published by a variety of sources 	<ul style="list-style-type: none"> • Historical rates may not be indicative of market expectations of the obligor's future behavior • Lag market events • Do not reflect entity-specific information • Lack of current measure of uncertainty • Need to obtain additional information on applicable recovery rates/severities • Severities and probabilities of default sourced separately (e.g., from different data providers) may not be consistent
Bond prices and yields (credit spreads)	<ul style="list-style-type: none"> • Bond prices can be obtained for any publicly traded debt instrument • Provide a current market view of credit risk • Application of market standard recovery rates should result in consistent severity and probabilities of default for a given credit spread • Probabilities of default and recovery rates will be internally consistent for a given credit spread 	<ul style="list-style-type: none"> • May be difficult to apply if publicly traded instruments are not available • Tend to be less responsive to current market events than CDS rates

(continued)

Method	Advantages	Disadvantages
Credit default swaps	<ul style="list-style-type: none"> • Current market view of credit risk associated with a specific entity • CDS rates related to a particular industry segment may also be useful in assessing risk • Can apply market standard assumptions for recovery rates • Probabilities of default and recovery rates will be internally consistent for a given credit spread 	<ul style="list-style-type: none"> • CDS contracts may be thinly-traded and their pricing may be volatile • CDS rates are not available for all companies • Only available for the short end of the interest rate curve

9.2.2.3 Other Considerations

Each company will have unique characteristics and often differing levels of reasonably available market information. For example, a large financial services institution may have a credit rating, multiple tranches of publicly traded debt, quoted credit default swap rates with multiple tenors, and other public information, which may provide strong evidence of a market participant's assumptions about credit risk. In contrast, a privately-held company may have limited public information reasonably available for consideration of the appropriate credit risk adjustment.

If little or no entity-specific information is available, it may be helpful to consider credit default swap benchmarks or other credit benchmarks for the industry. Sector information may also be useful as another benchmark in evaluating counterparties when there is public information available.

When sector information is used in lieu of or to supplement entity-specific information, the reporting entity should adjust the information to align it with the unique characteristics of the asset or liability for which credit risk is being measured. For example, if the average credit rating for the industry is A, but a reporting entity is measuring an instrument issued by a counterparty with a credit rating of BBB, the difference in credit rating suggests a need to incorporate a higher degree of credit risk in the measurement of this instrument versus an instrument issued by others in the reporting entity's industry.

Question 9-6: A reporting entity's risk management group has developed a certain methodology for considering counterparty credit risk. Is the reporting entity required to use the same methodology for purposes of measuring fair value for financial reporting?

PwC Interpretive Response

Many reporting entities have implemented risk management processes that manage counterparty exposure. Those processes may include, for example, developing lists of approved counterparties, establishing limits for exposures with a particular counterparty, determining the level of collateral or other credit support required for each counterparty or type of counterparty, pricing credit when collateral or other credit support is considered insufficient, and other related criteria.

In many cases, the approach to managing credit exposure developed by the risk management group will reflect the overall approach to measuring credit risk used by other market participants. Therefore, a reporting entity's methodology for measuring credit risk for financial reporting purposes should include consideration of information used by its risk management group. If the internal process uses information consistent with market participant assumptions, it may be used as an input when measuring fair value. In all cases, the determination of credit risk adjustments should reflect market participant assumptions and not management assumptions developed by the reporting entity.

9.2.2.4 Approaches to Assessing Available Information

The following examples demonstrate approaches to considering and weighting various types of information.

Example 9-6: Using Company-Specific Market Information

In September 20X8, Company B, a gas distribution company, enters into a two-year pay-fixed and receive-floating gas swap with Counterparty M, a gas marketer, based on the NYMEX Henry Hub monthly index. The swap meets the definition of a derivative and Company B will record it at fair value with changes in fair value reported in the income statement (statement of profit or loss) each reporting period. The swap is not subject to a master netting arrangement and no collateral has been posted. As of December 31, 20X8, the fair value of the swap, without any adjustment for credit risk, is a liability of \$365,000.

Since the contract is in a liability position, the credit adjustment will be based on market participant assumptions about Company B's credit risk (i.e., the amount market participants would require for assumption of this liability in a transfer). Company B assesses the available credit information as follows:

- **Credit rating**—Company B's credit rating on September 30, 20X8, was BBB, which is generally consistent with comparable companies in the industry. Based on this credit rating, Company B noted that the historical default tables indicate a default rate of less than 0.6 percent over the term of the swap contract. However, the use of the historical default rate method is unlikely to provide a current market participant's assumption about credit risk. Because Company B is not at least AA-rated, market participants would likely consider other market indicators in assessing credit risk.
- **Credit spreads**—Company B's publicly traded, unsecured debt was trading with yields in the range of 1.4%–1.7% over U.S. Treasury bonds as of December 31, 20X8. Company B considered the use of this information in the calculation of the credit risk adjustment; however, it determined that CDS rates are available and more appropriate to the derivative being measured. In addition, given the currently volatile credit markets, Company B determines that CDS rates provide a more timely and reliable indicator of credit risk.
- **Credit default swaps**—There are publicly-quoted CDS rates available for Company B, with current activity through December 31, 20X8. Company B is able to obtain CDS rates from an information service without undue cost or delay. The CDS rate is approximately 273 basis points for the first year of the contract, decreasing to 258 basis points for the second year. The spreads have been increasingly volatile. Company B incorporates CDS rates in its assessment of counterparty credit risk for its risk management purposes.

(continued)

Company B's perspective is that the risk of default is minimal and would be consistent with the risk indicated by historical default rates. In addition, Company B is concerned about the high level of volatility and thin trading associated with CDS rates. However, it determines that CDS rates provide the best indicator with respect to the current market view of its risk of default as of the reporting date. Accordingly, based on the reasonably available information, Company B concludes that using the CDS rate provides the best estimate of credit risk from the market participant perspective.

Example 9-7: Weighting Market Information

This example has the same fact pattern as Example 9-6, except that there are no quoted CDS rates available for Company B. There is CDS information available for the gas distribution sector. The CDS sector rate was approximately 250 basis points for the first year of the contract, decreasing to 225 basis points for the second year. Recent CDS quotes have been volatile.

Based on the available information, Company B concludes that it should calculate credit risk by weighting company-specific credit spreads and the sector-specific CDS rates. Management determines that the credit spreads provide the best company-specific information about potential risk of default. However, it also concludes that the CDS rates are more reflective of the current market participant view of credit risk. Because there are positive factors supporting each of these approaches, Company B believes that weighting the information is appropriate. Company B uses an equal weighting for each of the factors because it determined that there is no clear indication of which factor would be more heavily weighted by a market participant.

Example 9-8: Evaluating Various Types of Market Information

Company B is valuing \$1.0 million in preferred stock that was issued to private investors. This stock is classified as debt on the balance sheet under both U.S. GAAP and IFRS. The preferred stock is required to be redeemed for common stock of the company at a specified point in time. Company B is required to calculate the fair value of the preferred stock for disclosure purposes. In considering the valuation process, management observes that:

- Market conditions for debt have deteriorated.
- Its sector has been affected by a number of negative factors.
- Recently there has been a widening of credit spreads.

Company B's management believes that the company tends to follow industry trends with a slight "positive" factor due to a lower than average debt-to-equity ratio. Company B's management also obtains the following inputs for consideration:

- The credit spread on Company B's public debt is 3 percent.
- The public debt is senior to the preferred stock. Due to current credit conditions and Company B's lower than average risk of default, Company B's management believes that an adjustment of 1 percent is required to reflect the lower seniority of the preferred stock in relation to the public debt. Therefore, the implied credit spread for the preferred stock is 4 percent.

(continued)

- Company B is able to obtain a quote for Company H's preferred stock that has similar terms and characteristics. The current credit spread implied in this issuance is 4 percent. Company H has the same credit rating as Company B; however, Company B operates in an industry that has a lower risk profile. Furthermore, Company H's debt trades at a higher price in its credit category than Company B. Management determines that the difference in sectors and position within its credit category require a downward adjustment of .5 percent. Therefore, the credit spread implied by these inputs is 3.5 percent.
- Management obtains a quote for a publicly traded series of subordinated debt for Company J, a company within Company B's sector with a credit rating a grade below Company B's. The debt has characteristics (e.g., subordination, covenants, and other terms) that are similar to, though not exactly the same as, Company B's preferred stock. In addition, Company J has covenants that include restrictions beyond those imposed with Company B's preferred stock. The credit spread on the debt is 6 percent at the reporting date. Given the additional restrictions and the lower credit quality of Company J, management adjusts the credit spread downward by 1.5 percent, for an implied spread of 4.5 percent.

Company B considers the three reference inputs which, as adjusted, range from a low of 3.5 percent, a mid-point of 4.0 percent, to a high of 4.5 percent. In assessing the appropriate rate to apply in calculating the credit risk adjustment, management considers the quality of the data sources. It notes that the first price is considered to be the most relevant as it starts with Company B's own debt and adjusts for the risk in the preferred stock. However, the second two inputs reference subordinated debt, which is a better comparison to the subordinated position of the preferred stock. Because the credit markets place a premium on seniority, and because Company B operates in a lower risk sector, management has determined that the weighting should be closer to the subordinated debt spreads and assigns a credit spread of 4.5 percent.

9.2.3 Step Three: Calculate the Credit Risk Adjustment

There are various methodologies to calculate the credit risk adjustment and to incorporate the adjustment into the measurement of fair value. There is some flexibility in the method selected; however, management should apply a consistent method when performing similar measurements. In addition, a reporting entity must consider all relevant valuation approaches that would be used by a market participant, for which inputs can be obtained without undue effort.

The fair value standards describe three main approaches to measuring the fair value of assets and liabilities:

- Cost approach
- Market approach
- Income approach

In some cases, such as an exchange-traded commodity contract or a marketable debt security, an approach to valuation based on the quoted market price will incorporate nonperformance risk (including credit risk). See FV 9.1.1.1. However, when quoted prices are not available or do not include a credit risk component, other approaches to valuation may be used.

In determining the appropriate methodology to calculate the credit risk adjustment, the reporting entity should consider how a market participant would be expected

to approach the calculation. There are a number of approaches used to estimate a credit risk adjustment and these approaches may evolve over time. Reporting entities should continue to assess their approaches to ensure consistency with current market participant approaches and assumptions. Methods that may be used in the calculation of the credit adjustment include the following:

- **Market Approach**—Prices in traded markets for financial instruments such as corporate bonds will generally incorporate credit risk and for that reason do not require credit risk adjustments. Prices of other financial instruments, including most derivatives, typically do not include credit adjustments, making separate calculation necessary. If prices require adjustment for credit risk, these adjustments can be computed based market observable information such as CDS rates and credit spreads.
- **Income Approach**—When using the income approach, credit risk may be incorporated into the discount rate, the undiscounted expected cash flows, or the discounted cash flows. Credit spreads are often incorporated into the discount rate. CDS rates can be included in several ways including the following:
 - **Discount rate adjustment technique (ASC 820-10-55-10 through 55-12 and IFRS 13.B18 through B22)**—The reporting entity will use the available inputs (CDS rates, bond spreads) to calculate the credit risk adjustment. The credit inputs may be used to directly adjust the discount rate used in the overall fair value calculation (i.e., the reporting entity may add the CDS rate or bond spread to the risk free rate). Alternatively, the reporting entity may calculate the credit risk adjustment by applying the CDS rate to discount the future cash flows.
 - **Exponential CDS default method**—This method takes the CDS rate and extracts from it the implied risk of default which is then applied to the market value of the unit of measurement and reduced by expected recoveries. A quoted CDS spread may be converted to a risk of default and a credit risk adjustment using the following formula:

Probability of default (PD) = $1 - \text{Exponential} [- \text{CDS spread} / (1 - \text{recovery rate}) \times \text{maturity}]$

Credit Risk Adjustment (CVA) / Debit Value Adjustment (DVA) = $\text{PD} \times \text{fair value of instrument} \times (1 - \text{recovery rate})$

Recovery rates are available from published sources depending on the seniority of the obligation and the industry and credit rating of the reporting entity. The reporting entity should assess the probability of default and recovery rates implied from the market for its counterparty and itself, as appropriate, as part of this calculation.

The size of the credit risk adjustments may vary between different kinds of instruments and between markets or jurisdictions. The determination requires significant judgment. In estimating the size of the credit risk adjustment for any instrument, the reporting entity considers all relevant market information that is reasonably available. This includes factors such as:

- information about the pricing of new instruments that are similar to the one being valued and the extent to which the pricing of such instruments varies with the credit risk of the parties to it
- the extent to which credit risk is already reflected in the valuation model and assumptions at inception and over the life of the transaction. For example, a

derivative valuation that uses a LIBOR discount rate will incorporate the credit risk inherent in LIBOR. However, this may differ from the credit risk inherent in the derivative being valued. Also, some derivative valuations use discount rates other than LIBOR (e.g., OIS) so further adjustments may be required. For example, generally Corporate CDS rates are considered as measuring credit risk relative to LIBOR and are appropriate when discounting at LIBOR. If discounting at another rate (e.g., OIS), adjustments to the measure of credit riskiness may be required.

- the effect of the entity's own credit risk from the perspective of market participants² This may differ depending on the terms of credit enhancements, if any, related to the liability. It is assumed that: (i) the liability is transferred to a market participant at the measurement date and would remain outstanding; (ii) the market participant transferee would be required to fulfill the obligation; (iii) the liability would not be settled with the counterparty or otherwise extinguished at the measurement date; and (iv) non-performance risk is the same before and after the transfer of the liability [ASC 820-10-35-16(b) and 35-17, IFRS 13.34(a) and 13.42].

9.2.3.1 Examples—Calculation of a Credit Risk Adjustment

Reporting entities may use different methods to calculate the credit risk adjustment. We provide some simplified examples below to illustrate various methods of using credit spreads and CDS rates to estimate the credit risk adjustment. The calculation format varies in each example to illustrate different formats in which the credit information may be received and different methods of calculation. As noted, calculations can be complex and may require the use of specialists. The following is a brief description of the methods used:

Example 9-9: Discount rate adjustment technique—This calculation is performed using credit spread information applied to the cumulative exposure.

Example 9-10: Discount rate adjustment technique—This example also demonstrates the use of discount rate adjustment techniques, comparing results obtained by using CDS rates and credit spreads.

Example 9-11: Alternative CDS-based techniques—In this example, the reporting entity calculates the credit risk adjustment of an interest rate swap using alternative methods of applying CDS spreads.

These examples are not meant to depict the full complexities of valuing credit risk within instruments with fluctuating fair values and other complexities that follow from common features related to derivatives and other financial instruments. For example, changes in the fair value of an instrument that causes its value to change from an asset to liability, or vice versa, present additional considerations. These simplified examples also do not take into account quoting conventions or timing of cash flows for credit default swaps.

² This chapter addresses credit risk. Nonperformance risk includes any factors that might influence the likelihood that the obligation will or will not be fulfilled.

Example 9-9: Discount Rate Adjustment Technique—Using a Credit Spread

This example demonstrates a credit risk adjustment for the preferred stock discussed in Example 9-8 using a credit spread.

The preferred stock is mandatorily redeemable at its par value of \$1.0 million in 5 years. The preferred stock provides for 20 quarterly dividend payments of \$17,500, based on a fixed annual rate of 7 percent.

The preferred stock rates are as follows:

	Measurement Date
Pre-credit-adjusted rate	5.00%
Credit spread	4.00%
	9.00%

The credit risk adjustment may be calculated using a credit spread by comparing the cash flows discounted at a pre-credit-adjusted rate with those discounted at a credit-adjusted rate, as follows:

	Cash Flows (Undiscounted)	Cash Flows (Undiscounted)	Cash Flows Discounted @ Pre-Credit- Adjusted Rate at the Measurement Date	Cash Flows Discounted @ Credit- Adjusted Rate at the Measurement Date	Impact of Credit
Principal Payment at maturity	1 × \$1,000,000	\$1,000,000	\$ 778,801	\$637,628	\$(141,173)
Quarterly Dividend Stream of 7%	20 × \$17,500	\$ 350,000	\$ 307,747	\$278,686	\$ (29,062)
Total Value		\$1,350,000	\$1,086,548	\$916,314	\$(170,234)

In this example, the reporting entity does not need to consider the prior period values. It only considers the two discount rates at the measurement date.

Example 9-10: Discount Rate Adjustment Technique—Impact of Different Credit Sources

This example demonstrates the impact of using different information sources in the calculation of the credit risk adjustment for the natural gas swap discussed in Example 9-6.

Key terms of the contract are as follows:

- Company B will pay the Henry Hub Monthly Index as published by Inside FERC (trade publication) and will receive \$14.00 per MMBtu.
- The contract term is from October 1, 20X8, through September 30, 20X0.

(continued)

- The daily notional volume is 10,000 MMBtus.
- The swap is not subject to a master netting arrangement and no collateral will be posted or received.

As of December 31, 20X8, the fair value of the swap, without any adjustment for credit risk, is a liability of \$365,000. As the contract is in a liability position, the credit risk adjustment will be predominantly based on market participant assumptions about Company B's risk of default (i.e., the amount market participants would require to assume this liability).

Company B has a BBB credit rating and determines that the following credit information is available:

	Historical Default Rates	Credit Spread	CDS Rates
One Year	0.23%	1.74%	2.74%
Two Year	0.54%	1.89%	2.58%

Company B determines that the historical default rates are not reflective of market participant assumptions about its risk of default and does not further evaluate this information.

Company B determines that a market participant would calculate fair value by applying a discounted cash flow technique (based on the differential between the forward gas curve and the fixed amount per MMBtu under the contract). The risk adjusted rate to be used in the calculation could be determined by adding either the CDS rate or the credit spread to the discount rate, depending on which one of the two rates (or combination of the two rates) best represents a market participant's assumptions about credit risk. The potential outcomes vary depending on the adjustment used. The use of the CDS rate is assumed to result in a credit risk adjustment of \$11,724 compared to a credit risk adjustment of \$8,598 using the credit spread. The reason for the difference in these amounts is that the credit spreads are lower than the CDS rates, which, when incorporated in discounting, results in a lower credit risk adjustment.

Example 9-11: Alternative CDS-based Techniques³

Company C holds an interest rate swap with Counterparty S. Under the terms of the swap, Company C is assumed to make equal net payments of 1 percent annually on a \$33,333,333 notional amount. The swap has a three-year remaining term until maturity. The swap meets the definition of a derivative and Company C records it at fair value with changes recognised in earnings each reporting period. The swap is not subject to a master netting arrangement and no collateral will be posted or received.

As of September 30, 20X1, the cash flows associated with the fair value of the swap, without any adjustment for credit risk, represent cash outflows of \$333,333 at the end of each of the following three years totaling to an expected outflow of \$999,999. As the contract is in a liability position, the credit risk adjustment will be

(continued)

³ The amounts in the examples were computed in a spreadsheet and are displayed rounded to the nearest dollar. As a result, there may be minor differences between the amounts in the examples and the amounts produced by a spreadsheet calculation.

based on market participant assumptions about Company C's risk of default, liquidity of credit, and other factors (i.e., based on the amount market participants would require for assuming this liability in a transfer). Company C assesses the available credit information and determines that market participants would price credit based on Company C's CDS rate, which is available by reference to a number of pricing services. The credit risk adjustment can be calculated using cash flows and the discounting method as follows:

Year	Expected Outflow	Pre-Credit-Adjusted Discount Rate (%)	CDS Quote (%)	Risk Adjusted Discount Rate (%)	Pre-Credit-Adjusted Discounted Value	Fair Value	Risk Adjustment
(t)	(a)	(b)	(c)	(d)=(b)+(c)	(e)=(a)/(1+(b))^t	(f)=(a)/(1+(d))^t	(f)-(e)
1	\$333,333	1.00%	0.38%	1.38%	\$330,033	\$328,796	\$(1,237)
2	\$333,333	1.50%	0.45%	1.95%	\$323,554	\$320,704	\$(2,850)
3	\$333,333	1.70%	0.60%	2.30%	\$316,894	\$311,352	\$(5,543)
					\$970,481	\$960,851	\$(9,630)

- (a) Expected outflow is the notional amount times the net payment of 1 percent annually.
(b) Discount rate is the pre-credit-adjusted rate at the three dates.
(c) Default assumptions for senior unsecured credit. CDS quote can be obtained from a pricing service such as Bloomberg.

Based on the calculation, Company C should record a credit risk adjustment of \$9,630. Therefore, as of September 30, 20X1, Company C reports a net derivative liability of \$960,851. This equals the present value of the net swap cash flows discounted at a rate excluding counterparty credit risk, \$970,481, less the credit risk adjustment of \$9,630. The impact of the credit risk adjustment should be included in the fair value change for the derivative that is recorded in the income statement (statement of profit or loss).

Alternatively, the credit risk adjustment can be computed using the exposure profile and default probabilities over 1-year buckets as follows:

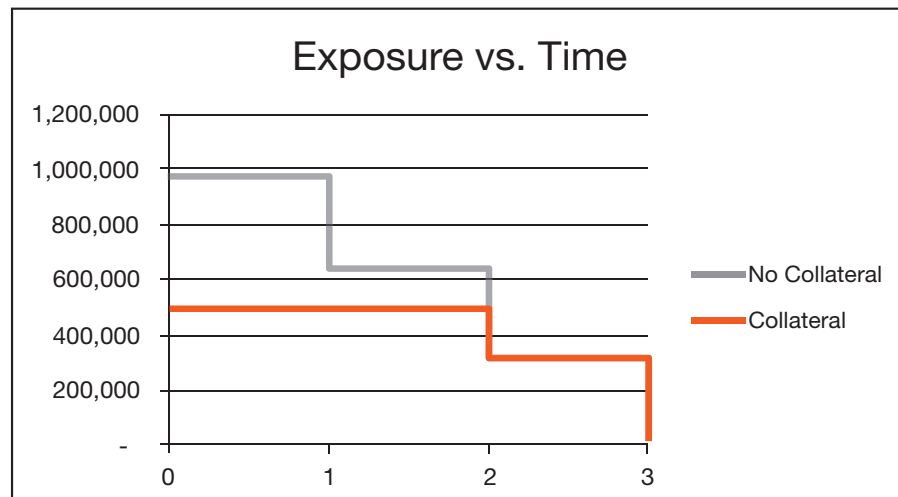
Year	Expected Outflow	Pre-Credit-Adjusted Discount Rate	Pre-Credit-Adjusted Discounted Value	Bucket Exposure	CDS Quote (%)	Recovery Rate (%)	Term Default Probability (%)	Bucket Default Probability (%)	Bucket Risk Adjustment
(t)	(a)	(b)	(c)=(a)/(1+(b))^t	(d)=sum of remaining (c)	(e)	(f)	(g)=1-exp(-e)/(1-f)x	(h)=change in (g)	-(d)x(h)x(1-f)
1	\$333,333	1.00%	\$330,033	970,481	0.38%	40%	0.63%	0.63%	\$(3,668)
2	\$333,333	1.50%	\$323,554	640,448	0.45%	40%	1.49%	0.86%	\$(3,305)
3	\$333,333	1.70%	\$316,894	316,894	0.60%	40%	2.96%	1.47%	\$(2,795)
			970,481					2.96%	\$(9,768)

- (a) Expected outflow is the notional amount times the net payment of 1 percent annually.
(b) Discount rate is the pre-credit-adjusted rate at the three dates.
(d) Bucket exposure is the present value of all the remaining cash flows as of the measurement date.
(e) Default assumptions for senior unsecured credit. CDS quote can be obtained from a pricing service such as Bloomberg.
(f) Recovery rate is the standard assumption for senior unsecured CDS.

(continued)

Based on this calculation, Company C should record a credit risk adjustment of \$9,768. Therefore, as of September 30, 20X1, Company C reports a net derivative liability of \$960,713, equal to the present value of the net swap cash flows discounted at a rate excluding counterparty credit risk, \$970,481, less the credit risk adjustment of \$9,768. The impact of the credit risk adjustment should be included in the fair value change for the derivative that is recorded in the income statement (statement of profit or loss).

Now consider the same facts except that Company C is required to collateralize any exposure above \$500,000. The exposure profile with and without collateral is:



The effect of the collateral requirement is to limit exposure to \$500,000 for the first two years. Taking this into account, we can compute the credit risk adjustment using default probabilities as follows:

Year	Bucket Exposure	CDS Quote (%)	Recovery Rate (%)	Term Default Probability (%)	Bucket Default Probability (%)	Bucket Risk Adjustment
(t)	(a)	(b)	(c)	(d)= $1 - \exp(-\frac{(b)/(1-(c)) \times t}{1})$	(e)=change in (d)	$-(a) \times (e) \times (1-(c))$
1	\$500,000	0.38%	40%	0.63%	0.63%	\$(1,890)
2	\$500,000	0.45%	40%	1.49%	0.86%	\$(2,580)
3	\$316,894	0.60%	40%	2.96%	1.47%	\$(2,795)
					2.96%	\$(7,265)

- (a) Bucket exposure is the lower of the bucket exposure from the previous example (in which there was no collateral) and the collateral threshold in this example of \$500,000.
- (b) CDS quote can be obtained from a pricing service such as Bloomberg. Above are the default assumptions for senior unsecured credit.
- (c) Recovery rate is the standard assumption for senior unsecured CDS.

Based on this calculation, Company C should record a credit risk adjustment of \$7,265. Therefore, as of September 30, 20X1, Company C reports a net derivative liability of \$963,216, equal to the present value of the net swap cash flows discounted at a rate excluding counterparty credit risk, \$970,481, less the credit risk adjustment of \$7,265. The impact of the credit risk adjustment should be included in the fair value change for the derivative that is recorded in the income statement (statement of profit or loss).

Note that these descriptions and examples present context for the application of techniques to calculate credit risk adjustments. In application, the calculation is generally complex and requires consideration of the features of individual instruments. Valuation assistance is advised when valuing these instruments.

Question 9-7: What factors should an entity consider when adding a credit risk adjustment to estimates of fair value provided by third parties (for example, quotes from brokers or pricing services)?

PwC Interpretive Response

The entity will need to establish whether any adjustment for credit risk has already been made by the third party in arriving at the fair value estimate. If no adjustment has been made, the entity will need to adjust the estimate unless it can demonstrate any adjustment would be immaterial (see Question 9-2). If an adjustment has been made, the entity will need to establish the basis for it and whether the result reasonably estimates the price at which an orderly transaction would take place between market participants on the measurement date.

9.2.4 Step Four: Allocate the Credit Risk Adjustment to Individual Fair Value Measurements

After the reporting entity has determined the appropriate credit risk adjustment, the amount should be appropriately classified and disclosed. This process is relatively straightforward when the unit of measurement for the credit risk adjustment is the same as the unit of account for the overall fair value measurement (such as a standalone derivative contract). In that case, the credit risk adjustment is calculated at an individual transaction level. The credit risk adjustment will be incorporated into the fair value measurement of those instruments on the balance sheet, statement of income (or profit or loss), or other comprehensive income, and in the fair value disclosures. When netting of credit exposures is permitted, such as under an International Swaps and Derivatives Association, Inc. (ISDA) master agreement, the credit risk adjustment is typically calculated on a portfolio basis, including all exposures under the ISDA master agreement, and then allocated to each transaction.

There may be specific challenges in allocating credit risk adjustments among items classified as short- and long-term assets and liabilities, net income (or profit or loss), and other comprehensive income, and among items split in the three-level fair value hierarchy disclosures. In addition, allocation of credit risk adjustments measured at the portfolio level may be required to comply with derivatives disclosure requirements in ASC 815 and IFRS 7. Both require derivatives to be disclosed on a gross, transaction-level basis. Accordingly, the credit risk adjustment may need to be allocated to the individual derivative level for that purpose as well.

9.2.4.1 Allocation Methods

There are several acceptable methods, when appropriate in the circumstances and consistently applied, for the allocation of portfolio-level credit risk adjustment to individual units of account. Other methods also may be used as long as a reporting entity can support that the method is appropriate in the circumstances.

Each of the methods below assumes that the reporting entity calculates a net credit risk adjustment for all derivative positions with a specific counterparty with which the reporting entity has a master netting arrangement.

Relative Fair Value Approach

Under the relative fair value approach, the reporting entity will calculate the portfolio level credit risk adjustment based on the net position with a specific counterparty (i.e., incorporating the netting permitted under a netting arrangement). In practice, we have observed two different methods used to allocate the net adjustment. In one method, the reporting entity will allocate a portion of the portfolio level credit risk adjustment to each individual derivative asset and liability with that counterparty. This approach results in recording the portfolio-level credit risk adjustment to both the individual assets and liabilities, based on the relative fair value of the individual derivative to the net position with the counterparty.

Under another acceptable method, the credit risk adjustment on the net position is allocated to all individual contracts in the same position as the net position based on their relative fair values. For example, if a reporting entity was in a net liability position with a specific counterparty, the credit risk adjustment would only be allocated to the liability positions with that counterparty that are subject to the netting arrangement. Asset positions would not reflect a credit risk adjustment.

Relative Credit Adjustment Approach

Under the relative credit adjustment approach, the reporting entity allocates a portion of the portfolio level credit risk adjustment (calculated on the net position) to each derivative asset and liability based on the relative credit risk adjustment of each of the derivative instruments in the portfolio. This approach will allocate the portfolio credit risk adjustment to each instrument based on the derivation of a credit risk adjustment for each position on a standalone basis, similar to the in-exchange approach described below.

In order to apply a relative credit risk adjustment approach, the reporting entity will need to calculate the credit risk adjustment on a net and gross basis (i.e., considering a master netting arrangement in one calculation and ignoring it in another). Both calculations are required because in order to calculate a relative credit risk adjustment basis, a derivative's individual credit risk adjustment would be compared to the net credit risk adjustment of the portfolio.

Marginal Contribution Approach

Under the marginal contribution approach, the reporting entity allocates a portion of the portfolio level credit risk adjustment to each derivative asset and liability based on the marginal amount that each derivative asset or liability contributes to the portfolio level credit risk adjustment.

The marginal approach is a "build-up" approach. The reporting entity starts with a single position and allocates the net credit risk adjustment. The next position is selected and the next allocation is performed. This process continues on an iterative basis. The allocations may differ based on which order of derivatives an entity selects. This method is not generally used in practice and has not been further illustrated in the examples.

In-Exchange or "Full Credit" Approach

The in-exchange method uses the derivative's standalone fair value in the calculation of the credit risk adjustment, ignoring the effect of any master netting arrangements. The benefit of this model is that it avoids the complexity of any allocation process. The result assumes the designated derivative is the only derivative with the

counterparty. The downside is that this method may over- or under-state the actual credit risk exposure based on the terms of the master netting arrangement and the credit quality of the reporting entity and the counterparty.

The method selected should be consistently applied and clearly disclosed.

9.2.4.2 Example—Allocation of Portfolio-Level Credit Risk Adjustment

This section includes examples illustrating the application of various allocation methods.

Example 9-12: Application of Credit Allocation Methods

Assume that Company E holds three derivative positions with Counterparty Q as of the reporting date. The fair values prior to any credit risk adjustment are as follows:

Derivative	Amount	Classification
Derivative 1	\$(1,000)	Liability
Derivative 2	1,500	Asset
Derivative 3	<u>(2,000)</u>	Liability
	<u>\$(1,500)</u>	Net liability

The companies have a master netting arrangement which applies to all three positions. For purposes of this example, assume all contracts are due within one year. Based on available CDS information, the risk of default associated with Company E is 10 percent and Counterparty Q's risk of default is 5 percent. As the derivatives are in a net liability position, Company E calculates the credit risk adjustment using its own default risk and determines that a portfolio level credit risk adjustment of \$150 is required on the net liability position.

Company E must allocate this adjustment for financial reporting purposes. Therefore, it considers the impact of using each of the four acceptable methods as follows. Note that only part of the total allocation is demonstrated for each method. The overall results for each method are displayed in the table at the end of this example.

- Relative fair value—Method 1: Company E allocates the total credit risk adjustment of \$150 to each of the derivatives in its portfolio, based on the relative value of each derivative to the net position with the counterparty. For example, the allocation to Derivative 1 is calculated as follows:

Derivative 1	\$(1,000)
Divided by net position	<u>(1,500)</u>
Allocation percentage	66.66%
Multiplied by total credit risk adjustment	<u>150</u>
Allocated credit risk adjustment	<u>\$ 100</u>

(continued)

- Relative fair value—Method 2: Company E allocates the total credit risk adjustment to only those derivatives in the same position as the net position based on their relative fair values (in this case, only to the liabilities). For example, the allocation to Derivative 1 is calculated as follows:

Derivative 1	\$(1,000)
Divided by total liability position	(3,000)
Allocation percentage	33.33%
Multiplied by total credit risk adjustment	150
Allocated credit risk adjustment	\$ 50

- Relative credit risk adjustment: Company E calculates the total credit risk adjustment for each derivative on a stand-alone basis (using the in-exchange approach described below). For example, the standalone credit risk adjustment for Derivative 1 is calculated as (\$1,000) multiplied by 10 percent (the risk of default for a liability position), which results in a standalone credit risk adjustment of \$100. However, note that the standalone adjustment for Derivative 2 would be calculated by applying the risk of default for Counterparty Q, resulting in a standalone credit risk adjustment of (\$75).

Company E then allocates the net credit risk adjustment of \$150 to each derivative based on its relative standalone credit adjustment. The allocation to Derivative 1 is calculated as follows:

Derivative 1—Standalone credit risk	\$ 100
Divided by total credit risk adjustment, in-exchange basis	225
Allocation percentage	44.44%
Multiplied by total credit risk adjustment	150
Allocated credit risk adjustment	\$ 67

- In-exchange or full-credit: In the in-exchange method, netting arrangements are ignored and credit risk adjustments are calculated for each derivative on a standalone basis, as discussed in the first step in the relative credit risk adjustment approach above. Application of the in-exchange method results in a higher overall credit risk adjustment than would be recorded if the netting arrangements are applied.

The overall results for each of the methods are depicted below:

	Relative Fair Value— Method 1	Relative Fair Value— Method 2	Relative Credit Adjustment	In-Exchange or Full-Credit
Derivative 1	\$ 100	\$ 50	\$ 67	\$100
Derivative 2	(150)	—	(50)	(75)
Derivative 3	200	100	133	200
Total adjustment	\$ 150	\$150	\$150	\$225
Net asset adjustment	\$(150)	—	\$ (50)	\$ (75)
Net liability adjustment	\$ 300	\$150	\$200	\$300

Company E will allocate the credit risk adjustment to assets and liabilities based on the allocation methodology selected and will apply it consistently.

9.2.4.3 Balance Sheet Classification

A reporting entity may apply one of the allocation methods above for purposes of the overall allocation to individual derivative instruments. However, the allocation may also need to reflect the fact that the derivative instruments may have short- and long-term components. The presence of collateral will also need to be considered as part of the allocation.

Consider the following example.

Example 9-13: Application of Credit Allocation Methods

Assume the same fact pattern as Example 9-12 above; however, Company E's derivative positions extend over multiple years. The fair values of these positions prior to any credit risk adjustment are as follows:

	Current	Long-Term	Total
Derivative 1	\$ 500	\$(1,500)	\$ (1,000)
Derivative 2	1,500	—	1,500
Derivative 3	(1,000)	(1,000)	(2,000)
Net position	\$1,000	\$(2,500)	\$ (1,500)

Note that the time value of money in the calculation of the credit risk adjustment has been ignored for purposes of this example to simplify the presentation.

Consistent with Example 9-12 above, Company E determines that a net \$150 credit risk adjustment is required. However, in this example, Company E must allocate the adjustment among the current and long-term assets and liabilities. If Company E has elected gross presentation of derivative assets and liabilities under ASC 815-10-45 or is presenting derivatives gross under IFRS, it will be required to allocate the adjustment to the individual current and long-term positions following a rational and consistent allocation methodology. For example, if Company E selects the relative fair value approach—method 1, a net adjustment of \$100 attributable to derivative 1 will be allocated to the current- and long-term portions as follows:

Derivative 1—current position	\$ 500
Divided by net position	(1,500)
Allocation percentage	(33.33)%
Multiplied by total credit adjustment	150
Allocated credit adjustment	\$ (50)
Derivative 1—long-term	\$(1,500)
Divided by net position	(1,500)
Allocation percentage	100%
Multiplied by total credit adjustment	150
Allocated credit adjustment	\$ 150

Application of this approach results in the same total allocation to Derivative 1 as illustrated in the application of the relative fair value approach—method 1 in Example 9-12 above.

(continued)

The overall result for each of the positions applying this methodology is as follows:

	Current	Long-Term	Total
Derivative 1	\$ (50)	\$150	\$ 100
Derivative 2	(150)	—	(150)
Derivative 3	100	100	200
Total adjustment	<u>\$(100)</u>	<u>\$250</u>	<u>\$ 150</u>
Net asset adjustment	\$(200)	—	\$(200)
Net liability adjustment	\$ 100	\$250	\$ 350

Note that these calculations may become very complicated in the case of a large portfolio with multiple agreements. As a result, a question has arisen as to whether it is appropriate to allocate the adjustment based on a simplified methodology; for example, to allocate the entire adjustment to the current asset position or long-term liability position. We believe that allocation to the individual derivatives (or a methodology that materially approximates such allocation) is necessary to comply with the reporting requirements of the fair value standards, ASC 815, and IAS 32, *Presentation*.

9.2.4.4 Allocation Between the Income Statement and Other Comprehensive Income

In some cases, a reporting entity will have derivatives designated in hedging relationships and derivatives reported at fair value through the income statement with the same counterparty. The methodologies outlined above should also be applied in determining the appropriate allocation of the adjustment between net income and other comprehensive income. However, this calculation would need to consider collateral or other credit support, which reduces the overall exposure. We believe a reporting entity should develop a systematic and rational approach to the allocation of collateral among its positions. This allocation may also follow the approaches described above.

9.3 Classification in the Fair Value Hierarchy

A significant credit risk adjustment may impact the overall classification of the measurement in the fair value hierarchy. This may be influenced by the type and source of data that is used to determine the credit risk adjustment. In determining whether the credit risk adjustment is observable, reporting entities need to consider what information is being used by market participants to price credit.

Different sources of information may be used to determine an adjustment for credit risk, including CDS rates, credit spreads, and historical default rates. CDS quotes and credit spreads may be either directly observable or derived from market observable data. However, reporting entities should use caution when obtaining a quote for a CDS or credit spread that is indirect (i.e., for a similar entity) or one that is indicative. The quotes should be assessed to determine how closely they match the CDS price or credit spread for the actual asset or liability, and may require an adjustment to appropriately reflect market participant assumptions. Finally, historical default rates generally are not considered to be market-based given the lag in incorporating market trends.

Appendix A: Definition of Key Terms

Appendix A: Definition of Key Terms

The following definitions should be used for key fair value and credit-related terms used throughout this guide:

Active Market	A market in which transactions for the asset or liability take place with sufficient frequency and volume to provide pricing information on an ongoing basis.
Brokered Market	A market in which brokers attempt to match buyers with sellers but do not stand ready to trade for their own account. In other words, brokers do not use their own capital to hold an inventory of the items for which they make a market. The broker knows the prices bid and asked by the respective parties, but each party is typically unaware of another party's price requirements. Prices of completed transactions are sometimes unavailable. Brokered markets include electronic communication networks, in which buy and sell orders are matched, and commercial and residential real estate markets.
Cost Approach	A valuation technique that reflects the amount that would be required currently to replace the service capacity of an asset (often referred to as current replacement cost).
Currency Risk	The risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in foreign exchange rates.
Dealer Market	A market in which dealers stand ready to trade (either buy or sell for their own account), thereby providing liquidity by using their capital to hold an inventory of the items for which they make a market. Typically, bid and ask prices (representing the price at which the dealer is willing to buy and the price at which the dealer is willing to sell, respectively) are more readily available than closing prices. Over-the-counter markets (for which prices are publicly reported by the National Association of Securities Dealers Automated Quotations systems or by OTC Markets Group Inc.) are dealer markets. Two examples of dealer markets are the U.S. Treasury securities market and AIM, the London Stock Exchange's international market for smaller growing companies. Dealer markets also exist for some other assets and liabilities, including other financial instruments, commodities, and physical assets (for example, used equipment).

Discount Rate Adjustment Technique	A present value technique that uses a risk-adjusted discount rate and contractual, promised, or most likely cash flows.
Entry Price	The price paid to acquire an asset or received to assume a liability in an exchange transaction.
Exchange Market	A market in which closing prices are both readily available and generally representative of fair value. Examples of such markets are the New York Stock Exchange and London Stock Exchange.
Exit Price	The price that would be received to sell an asset or paid to transfer a liability.
Expected Cash Flow	The probability-weighted average (that is, mean of the distribution) of possible future cash flows.
Fair Value	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.
Highest and Best Use	The use of a nonfinancial asset by market participants that would maximise the value of the asset or the group of assets and liabilities (for example, a business) within which the asset would be used.
Income Approach	Valuation techniques that convert future amounts (for example, cash flows or income and expenses) to a single current (that is, discounted) amount. The fair value measurement is determined on the basis of the value indicated by current market expectations about those future amounts.
Inputs	<p>The assumptions that market participants would use when pricing the asset or liability, including assumptions about risk, such as the following:</p> <ol style="list-style-type: none"> a. The risk inherent in a particular valuation technique used to measure fair value (such as a pricing model). b. The risk inherent in the inputs to the valuation technique. <p>Inputs may be observable or unobservable.</p>
Level 1 Inputs	Quoted prices (unadjusted) in active markets for identical assets or liabilities that the reporting entity can access at the measurement date.
Level 2 Inputs	Inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly.
Level 3 Inputs	Unobservable inputs for the asset or liability.

Liability Issued with an Inseparable Third-Party Credit Enhancement

A liability that is issued with a credit enhancement obtained from a third party, such as debt that is issued with a financial guarantee from a third party that guarantees the issuer's payment obligation.

Market Approach

A valuation technique that uses prices and other relevant information generated by market transactions involving identical or comparable (that is, similar) assets, liabilities, or groups of assets and liabilities, such as a business.

Market Corroborated Inputs

Inputs that are derived principally from or corroborated by observable market data by correlation to other means.

Market Participants

Buyers and sellers in the principal (or most advantageous) market for the asset or liability that have all of the following characteristics:

- a. They are independent of each other, that is, they are not related parties, although the price in a related-party transaction may be used as an input to a fair value measurement if the reporting entity has evidence that the transaction was entered into at market terms.
- b. They are knowledgeable, having a reasonable understanding about the asset or liability and the transaction using all available information, including information that might be obtained through due diligence efforts that are usual and customary.
- c. They are able to enter into a transaction for the asset or liability.
- d. They are willing to enter into transaction for the asset or liability, that is, they are motivated but not forced or otherwise compelled to do so.

Market Risk

The risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in market prices. Market risk comprises the following:

- a. Interest rate risk.
- b. Currency risk.
- c. Other price risk.

Most Advantageous Market

The market that maximizes the amount that would be received to sell the asset or minimizes the amount that would be paid to transfer the liability, after taking into account transaction costs and transportation costs.

Nonperformance Risk

The risk that an entity will not fulfill an obligation. Nonperformance risk includes, but may not be limited to, the reporting entity's own credit risk.

Observable Inputs	Inputs that are developed using market data, such as publicly available information about actual events or transactions, and that reflect the assumptions that market participants would use when pricing the asset or liability.
Orderly Transaction	A transaction that assumes exposure to the market for a period before the measurement date to allow for marketing activities that are usual and customary for transactions involving such assets or liabilities; it is not a forced transaction (for example, a forced liquidation or distress sale).
Other Price Risk	The risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in market prices (other than those arising from interest rate risk or currency risk), whether those changes are caused by factors specific to the individual financial instrument or its issuer or by factors affecting all similar financial instruments traded in the market.
Present Value	A tool used to link future amounts (cash flows or values) to a present amount using a discount rate (an application of the income approach). Present value techniques differ in how they adjust for risk and in the type of cash flows they use. See Discount Rate Adjustment Technique .
Principal Market	The market with the greatest volume and level of activity for the asset or liability.
Principal-to-Principal Market	A market in which transactions, both originations and resales, are negotiated independently with no intermediary. Little information about those transactions may be made available publicly.
Risk Premium	Compensation sought by risk-averse market participants for bearing the uncertainty inherent in the cash flows of an asset or a liability. Also referred to as a risk adjustment.
Systematic Risk	The common risk shared by an asset or a liability with the other items in a diversified portfolio. Portfolio theory holds that in a market in equilibrium, market participants will be compensated only for bearing the systematic risk inherent in the cash flows. (In markets that are inefficient or out of equilibrium, other forms of return or compensation might be available.) Also referred to as nondiversifiable risk.

Transaction Costs

The costs to sell an asset or transfer a liability in the principal (or most advantageous) market for the asset or liability that are directly attributable to the disposal of the asset or the transfer of the liability and meet both of the following criteria:

- a. They result directly from and are essential to that transaction.
- b. They would not have been incurred by the entity had the decision to sell the asset or transfer the liability not been made (similar to costs to sell as defined in ASC 360-10-35-38 and in Appendix A of IFRS 5, *Non-current Assets Held for Sale and Discontinued Operations*).

Transportation Costs

The costs that would be incurred to transport an asset from its current location to its principal (or most advantageous) market.

Unit of Account

The level at which an asset or a liability is aggregated or disaggregated for recognition purposes.

Unobservable Inputs

Inputs for which market data are not available and that are developed using the best information available about the assumptions that market participants would use when pricing the asset or liability.

Unsystematic Risk

The risk specific to a particular asset or liability. Also referred to as diversifiable risk.

Appendix B:
Index of Questions and Examples

Appendix B: Index of Questions and Examples

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Appendix C: Abbreviations

Appendix C: Abbreviations

The following tables should be used as a reference for abbreviations used throughout this Guide:

Abbreviations

AICPA	American Institute of Certified Public Accountants
ASC	Accounting Standards Codification
ASU	Accounting Standards Update
BM&FBOVESPA	Brazilian Mercantile & Futures Exchange Bolsa de Valores, Mercadorias & Futuros de Sao Paulo Mercadorias & Futuros de São Paulo
CBOT	Chicago Board of Trade
FASB	Financial Accounting Standards Board
GAAP	Generally Accepted Accounting Principles
IASB	International Accounting Standards Board
IFRS	International Financial Reporting Standards
ISDA	International Swaps and Derivatives Association, Inc.
LME	London Metal Exchange
LSE	London Stock Exchange
NYMEX	New York Mercantile Exchange
NYSE	New York Stock Exchange
PCAOB	Public Company Accounting Oversight Board
SAB	Staff Accounting Bulletin
SEC	Securities and Exchange Commission
U.S.	United States

Other Terms

ARO	Asset retirement obligation
CDS	Credit Default Swap
CGU	Cash-generating unit
CSA	Credit support annex
CVA	Credit valuation adjustment
DVA	Debit valuation adjustment
FVO	Fair value option
FVTPL	Fair value through profit or loss
IRR	Internal rate of return
LIBOR	London Interbank Offered Rate
MEEM	Multi-period excess earnings method
MMBtus	One million British thermal units
NAV	Net Asset Value
NCI	Noncontrolling interest
OIS	Overnight Index Swap (Rate)
OTTI	Other than temporary impairment
PFI	Projected financial information
RFR	Relief-from-royalty

ROI	Return on investment
TAB	Tax-amortisation benefit
VAR	Value at risk
VIE	Variable interest entity
VSOE	Vendor-specific objective evidence
WACC	Weighted average cost of capital
WARA	Weighted average return analysis

How PwC Can Help

ASC 820, *Fair Value Measurement*, and IFRS 13, *Fair Value Measurement*, together represent a fair value framework that is applicable to a wide array of reporting entities. They are principles-based standards that base the measurement of fair value on an exit price concept, taking into account the assumptions of market participants and favoring fair value measurements that prioritize inputs that are observable in active markets.

Our fair value professionals frequently advise companies regarding fair value measurements and related matters, including:

- Valuation methodologies;
- Valuation techniques for financial and nonfinancial assets;
- Application of premiums and discounts in fair value measurements;
- Determination of where significant inputs fall in the fair value hierarchy;
- Valuation of assets acquired and liabilities assumed in a business combination;
- Disclosure requirements; and
- When the fair value option can be applied.

Our professionals bring value by understanding and resolving their complex business issues.

If you have any questions or comments, please contact your PwC partner.

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