

INTERNATIONAL STANDARD ON AUDITING 540
AUDITING ACCOUNTING ESTIMATES, INCLUDING FAIR
VALUE ACCOUNTING ESTIMATES, AND RELATED
DISCLOSURES

(Effective for audits of financial statements for periods
beginning on or after December 15, 2009)

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AUDITING ACCOUNTING ESTIMATES, INCLUDING FAIR VALUE
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International Standard on Auditing (ISA) 540, *Auditing Accounting Estimates, Including Fair Value Accounting Estimates, and Related Disclosures*, should be read in conjunction with ISA 200, *Overall Objectives of the Independent Auditor and the Conduct of an Audit in Accordance with International Standards on Auditing*.

Introduction

Scope of this ISA

1. This International Standard on Auditing (ISA) deals with the auditor's responsibilities relating to accounting estimates, including fair value accounting estimates, and related disclosures in an audit of financial statements. Specifically, it expands on how ISA 315 (Revised)¹ and ISA 330² and other relevant ISAs are to be applied in relation to accounting estimates. It also includes requirements and guidance on misstatements of individual accounting estimates, and indicators of possible management bias.

Nature of Accounting Estimates

2. Some financial statement items cannot be measured precisely, but can only be estimated. For purposes of this ISA, such financial statement items are referred to as accounting estimates. The nature and reliability of information available to management to support the making of an accounting estimate varies widely, which thereby affects the degree of estimation uncertainty associated with accounting estimates. The degree of estimation uncertainty affects, in turn, the risks of material misstatement of accounting estimates, including their susceptibility to unintentional or intentional management bias. (Ref: Para. A1–A11)
3. The measurement objective of accounting estimates can vary depending on the applicable financial reporting framework and the financial item being reported. The measurement objective for some accounting estimates is to forecast the outcome of one or more transactions, events or conditions giving rise to the need for the accounting estimate. For other accounting estimates, including many fair value accounting estimates, the measurement objective is different, and is expressed in terms of the value of a current transaction or financial statement item based on conditions prevalent at the measurement date, such as estimated market price for a particular type of asset or liability. For example, the applicable financial reporting framework may require fair value measurement based on an assumed hypothetical current transaction between knowledgeable, willing parties (sometimes referred to as “marketplace participants” or equivalent) in an arm's length transaction, rather than the settlement of a transaction at some past or future date.³
4. A difference between the outcome of an accounting estimate and the amount originally recognized or disclosed in the financial statements does not necessarily represent a misstatement of the financial statements. This is particularly the case

¹ ISA 315 (Revised), *Identifying and Assessing the Risks of Material Misstatement through Understanding the Entity and Its Environment*

² ISA 330, *The Auditor's Responses to Assessed Risks*

³ Different definitions of fair value may exist among financial reporting frameworks.

for fair value accounting estimates, as any observed outcome is invariably affected by events or conditions subsequent to the date at which the measurement is estimated for purposes of the financial statements.

Effective Date

5. This ISA is effective for audits of financial statements for periods beginning on or after December 15, 2009.

Objective

6. The objective of the auditor is to obtain sufficient appropriate audit evidence about whether:
 - (a) accounting estimates, including fair value accounting estimates, in the financial statements, whether recognized or disclosed, are reasonable; and
 - (b) related disclosures in the financial statements are adequate, in the context of the applicable financial reporting framework.

Definitions

7. For purposes of the ISAs, the following terms have the meanings attributed below:
 - (a) Accounting estimate – An approximation of a monetary amount in the absence of a precise means of measurement. This term is used for an amount measured at fair value where there is estimation uncertainty, as well as for other amounts that require estimation. Where this ISA addresses only accounting estimates involving measurement at fair value, the term “fair value accounting estimates” is used.
 - (b) Auditor’s point estimate or auditor’s range – The amount, or range of amounts, respectively, derived from audit evidence for use in evaluating management’s point estimate.
 - (c) Estimation uncertainty – The susceptibility of an accounting estimate and related disclosures to an inherent lack of precision in its measurement.
 - (d) Management bias – A lack of neutrality by management in the preparation of information.
 - (e) Management’s point estimate – The amount selected by management for recognition or disclosure in the financial statements as an accounting estimate.
 - (f) Outcome of an accounting estimate – The actual monetary amount which results from the resolution of the underlying transaction(s), event(s) or condition(s) addressed by the accounting estimate.

Requirements

Risk Assessment Procedures and Related Activities

8. When performing risk assessment procedures and related activities to obtain an understanding of the entity and its environment, including the entity's internal control, as required by ISA 315 (Revised),⁴ the auditor shall obtain an understanding of the following in order to provide a basis for the identification and assessment of the risks of material misstatement for accounting estimates: (Ref: Para. A12)
 - (a) The requirements of the applicable financial reporting framework relevant to accounting estimates, including related disclosures. (Ref: Para. A13–A15)
 - (b) How management identifies those transactions, events and conditions that may give rise to the need for accounting estimates to be recognized or disclosed in the financial statements. In obtaining this understanding, the auditor shall make inquiries of management about changes in circumstances that may give rise to new, or the need to revise existing, accounting estimates. (Ref: Para. A16–A21)
 - (c) How management makes the accounting estimates, and an understanding of the data on which they are based, including: (Ref: Para. A22–A23)
 - (i) The method, including where applicable the model, used in making the accounting estimate; (Ref: Para. A24–A26)
 - (ii) Relevant controls; (Ref: Para. A27–A28)
 - (iii) Whether management has used an expert; (Ref: Para. A29–A30)
 - (iv) The assumptions underlying the accounting estimates; (Ref: Para. A31–A36)
 - (v) Whether there has been or ought to have been a change from the prior period in the methods for making the accounting estimates, and if so, why; and (Ref: Para. A37)
 - (vi) Whether and, if so, how management has assessed the effect of estimation uncertainty. (Ref: Para. A38)
9. The auditor shall review the outcome of accounting estimates included in the prior period financial statements, or, where applicable, their subsequent re-estimation for the purpose of the current period. The nature and extent of the auditor's review takes account of the nature of the accounting estimates, and whether the information obtained from the review would be relevant to

⁴ ISA 315 (Revised), paragraphs 5–6 and 11–12

identifying and assessing risks of material misstatement of accounting estimates made in the current period financial statements. However, the review is not intended to call into question the judgments made in the prior periods that were based on information available at the time. (Ref: Para. A39–A44)

Identifying and Assessing the Risks of Material Misstatement

10. In identifying and assessing the risks of material misstatement, as required by ISA 315 (Revised),⁵ the auditor shall evaluate the degree of estimation uncertainty associated with an accounting estimate. (Ref: Para. A45–A46)
11. The auditor shall determine whether, in the auditor’s judgment, any of those accounting estimates that have been identified as having high estimation uncertainty give rise to significant risks. (Ref: Para. A47–A51)

Responses to the Assessed Risks of Material Misstatement

12. Based on the assessed risks of material misstatement, the auditor shall determine: (Ref: Para. A52)
 - (a) Whether management has appropriately applied the requirements of the applicable financial reporting framework relevant to the accounting estimate; and (Ref: Para. A53–A56)
 - (b) Whether the methods for making the accounting estimates are appropriate and have been applied consistently, and whether changes, if any, in accounting estimates or in the method for making them from the prior period are appropriate in the circumstances. (Ref: Para. A57–A58)
13. In responding to the assessed risks of material misstatement, as required by ISA 330,⁶ the auditor shall undertake one or more of the following, taking account of the nature of the accounting estimate: (Ref: Para. A59–A61)
 - (a) Determine whether events occurring up to the date of the auditor’s report provide audit evidence regarding the accounting estimate. (Ref: Para. A62–A67)
 - (b) Test how management made the accounting estimate and the data on which it is based. In doing so, the auditor shall evaluate whether:
 - (i) The method of measurement used is appropriate in the circumstances; and (Ref: Para. A71–A76)

⁵ ISA 315 (Revised), paragraph 25

⁶ ISA 330, paragraph 5

- (ii) The assumptions used by management are reasonable in light of the measurement objectives of the applicable financial reporting framework. (Ref: Para. A77–A83)
 - (c) Test the operating effectiveness of the controls over how management made the accounting estimate, together with appropriate substantive procedures. (Ref: Para. A84–A86)
 - (d) Develop a point estimate or a range to evaluate management’s point estimate. For this purpose: (Ref: Para. A87–A91)
 - (i) If the auditor uses assumptions or methods that differ from management’s, the auditor shall obtain an understanding of management’s assumptions or methods sufficient to establish that the auditor’s point estimate or range takes into account relevant variables and to evaluate any significant differences from management’s point estimate. (Ref: Para. A92)
 - (ii) If the auditor concludes that it is appropriate to use a range, the auditor shall narrow the range, based on audit evidence available, until all outcomes within the range are considered reasonable. (Ref: Para. A93–A95)
14. In determining the matters identified in paragraph 12 or in responding to the assessed risks of material misstatement in accordance with paragraph 13, the auditor shall consider whether specialized skills or knowledge in relation to one or more aspects of the accounting estimates are required in order to obtain sufficient appropriate audit evidence. (Ref: Para. A96–A101)

Further Substantive Procedures to Respond to Significant Risks

Estimation Uncertainty

15. For accounting estimates that give rise to significant risks, in addition to other substantive procedures performed to meet the requirements of ISA 330,⁷ the auditor shall evaluate the following: (Ref: Para. A102)
- (a) How management has considered alternative assumptions or outcomes, and why it has rejected them, or how management has otherwise addressed estimation uncertainty in making the accounting estimate. (Ref: Para. A103–A106)
 - (b) Whether the significant assumptions used by management are reasonable. (Ref: Para. A107–A109)

⁷ ISA 330, paragraph 18

- (c) Where relevant to the reasonableness of the significant assumptions used by management or the appropriate application of the applicable financial reporting framework, management's intent to carry out specific courses of action and its ability to do so. (Ref: Para. A110)
16. If, in the auditor's judgment, management has not adequately addressed the effects of estimation uncertainty on the accounting estimates that give rise to significant risks, the auditor shall, if considered necessary, develop a range with which to evaluate the reasonableness of the accounting estimate. (Ref: Para. A111–A112)

Recognition and Measurement Criteria

17. For accounting estimates that give rise to significant risks, the auditor shall obtain sufficient appropriate audit evidence about whether:
- (a) Management's decision to recognize, or to not recognize, the accounting estimates in the financial statements; and (Ref: Para. A113–A114)
 - (b) The selected measurement basis for the accounting estimates, (Ref: Para. A115)

are in accordance with the requirements of the applicable financial reporting framework.

Evaluating the Reasonableness of the Accounting Estimates, and Determining Misstatements

18. The auditor shall evaluate, based on the audit evidence, whether the accounting estimates in the financial statements are either reasonable in the context of the applicable financial reporting framework, or are misstated. (Ref: Para. A116–A119)

Disclosures Related to Accounting Estimates

19. The auditor shall obtain sufficient appropriate audit evidence about whether the disclosures in the financial statements related to accounting estimates are in accordance with the requirements of the applicable financial reporting framework. (Ref: Para. A120–A121)
20. For accounting estimates that give rise to significant risks, the auditor shall also evaluate the adequacy of the disclosure of their estimation uncertainty in the financial statements in the context of the applicable financial reporting framework. (Ref: Para. A122–A123)

Indicators of Possible Management Bias

21. The auditor shall review the judgments and decisions made by management in the making of accounting estimates to identify whether there are indicators of

possible management bias. Indicators of possible management bias do not themselves constitute misstatements for the purposes of drawing conclusions on the reasonableness of individual accounting estimates. (Ref: Para. A124–A125)

Written Representations

22. The auditor shall obtain written representations from management and, where appropriate, those charged with governance whether they believe significant assumptions used in making accounting estimates are reasonable. (Ref: Para. A126–A127)

Documentation

23. The auditor shall include in the audit documentation:⁸
- (a) The basis for the auditor’s conclusions about the reasonableness of accounting estimates and their disclosure that give rise to significant risks; and
 - (b) Indicators of possible management bias, if any. (Ref: Para. A128)

Application and Other Explanatory Material

Nature of Accounting Estimates (Ref: Para. 2)

- A1. Because of the uncertainties inherent in business activities, some financial statement items can only be estimated. Further, the specific characteristics of an asset, liability or component of equity, or the basis of or method of measurement prescribed by the financial reporting framework, may give rise to the need to estimate a financial statement item. Some financial reporting frameworks prescribe specific methods of measurement and the disclosures that are required to be made in the financial statements, while other financial reporting frameworks are less specific. The Appendix to this ISA discusses fair value measurements and disclosures under different financial reporting frameworks.
- A2. Some accounting estimates involve relatively low estimation uncertainty and may give rise to lower risks of material misstatements, for example:
- Accounting estimates arising in entities that engage in business activities that are not complex.

⁸ ISA 230, *Audit Documentation*, paragraphs 8–11, and A6

- Accounting estimates that are frequently made and updated because they relate to routine transactions.
 - Accounting estimates derived from data that is readily available, such as published interest rate data or exchange-traded prices of securities. Such data may be referred to as “observable” in the context of a fair value accounting estimate.
 - Fair value accounting estimates where the method of measurement prescribed by the applicable financial reporting framework is simple and applied easily to the asset or liability requiring measurement at fair value.
 - Fair value accounting estimates where the model used to measure the accounting estimate is well-known or generally accepted, provided that the assumptions or inputs to the model are observable.
- A3. For some accounting estimates, however, there may be relatively high estimation uncertainty, particularly where they are based on significant assumptions, for example:
- Accounting estimates relating to the outcome of litigation.
 - Fair value accounting estimates for derivative financial instruments not publicly traded.
 - Fair value accounting estimates for which a highly specialized entity-developed model is used or for which there are assumptions or inputs that cannot be observed in the marketplace.
- A4. The degree of estimation uncertainty varies based on the nature of the accounting estimate, the extent to which there is a generally accepted method or model used to make the accounting estimate, and the subjectivity of the assumptions used to make the accounting estimate. In some cases, estimation uncertainty associated with an accounting estimate may be so great that the recognition criteria in the applicable financial reporting framework are not met and the accounting estimate cannot be made.
- A5. Not all financial statement items requiring measurement at fair value involve estimation uncertainty. For example, this may be the case for some financial statement items where there is an active and open market that provides readily available and reliable information on the prices at which actual exchanges occur, in which case the existence of published price quotations ordinarily is the best audit evidence of fair value. However, estimation uncertainty may exist even when the valuation method and data are well defined. For example, valuation of securities quoted on an active and open market at the listed market price may require adjustment if the holding is significant in relation to the market or is subject to restrictions in marketability. In addition, general economic circumstances prevailing at the time, for example, illiquidity in a particular market, may impact estimation uncertainty.

- A6. Additional examples of situations where accounting estimates, other than fair value accounting estimates, may be required include:
- Allowance for doubtful accounts.
 - Inventory obsolescence.
 - Warranty obligations.
 - Depreciation method or asset useful life.
 - Provision against the carrying amount of an investment where there is uncertainty regarding its recoverability.
 - Outcome of long term contracts.
 - Costs arising from litigation settlements and judgments.
- A7. Additional examples of situations where fair value accounting estimates may be required include:
- Complex financial instruments, which are not traded in an active and open market.
 - Share-based payments.
 - Property or equipment held for disposal.
 - Certain assets or liabilities acquired in a business combination, including goodwill and intangible assets.
 - Transactions involving the exchange of assets or liabilities between independent parties without monetary consideration, for example, a non-monetary exchange of plant facilities in different lines of business.
- A8. Estimation involves judgments based on information available when the financial statements are prepared. For many accounting estimates, these include making assumptions about matters that are uncertain at the time of estimation. The auditor is not responsible for predicting future conditions, transactions or events that, if known at the time of the audit, might have significantly affected management's actions or the assumptions used by management.

Management Bias

- A9. Financial reporting frameworks often call for neutrality, that is, freedom from bias. Accounting estimates are imprecise, however, and can be influenced by management judgment. Such judgment may involve unintentional or intentional management bias (for example, as a result of motivation to achieve a desired result). The susceptibility of an accounting estimate to management bias increases with the subjectivity involved in making it. Unintentional management bias and the potential for intentional management bias are inherent in subjective decisions that are often required in making an accounting

estimate. For continuing audits, indicators of possible management bias identified during the audit of the preceding periods influence the planning and risk identification and assessment activities of the auditor in the current period.

- A10. Management bias can be difficult to detect at an account level. It may only be identified when considered in the aggregate of groups of accounting estimates or all accounting estimates, or when observed over a number of accounting periods. Although some form of management bias is inherent in subjective decisions, in making such judgments there may be no intention by management to mislead the users of financial statements. Where, however, there is intention to mislead, management bias is fraudulent in nature.

Considerations Specific to Public Sector Entities

- A11. Public sector entities may have significant holdings of specialized assets for which there are no readily available and reliable sources of information for purposes of measurement at fair value or other current value bases, or a combination of both. Often specialized assets held do not generate cash flows and do not have an active market. Measurement at fair value therefore ordinarily requires estimation and may be complex, and in some rare cases may not be possible at all.

Risk Assessment Procedures and Related Activities (Ref: Para. 8)

- A12. The risk assessment procedures and related activities required by paragraph 8 of this ISA assist the auditor in developing an expectation of the nature and type of accounting estimates that an entity may have. The auditor's primary consideration is whether the understanding that has been obtained is sufficient to identify and assess the risks of material misstatement in relation to accounting estimates, and to plan the nature, timing and extent of further audit procedures.

Obtaining an Understanding of the Requirements of the Applicable Financial Reporting Framework (Ref: Para. 8(a))

- A13. Obtaining an understanding of the requirements of the applicable financial reporting framework assists the auditor in determining whether it, for example:
- Prescribes certain conditions for the recognition,⁹ or methods for the measurement, of accounting estimates.
 - Specifies certain conditions that permit or require measurement at a fair value, for example, by referring to management's intentions to carry out certain courses of action with respect to an asset or liability.

⁹ Most financial reporting frameworks require incorporation in the balance sheet or income statement of items that satisfy their criteria for recognition. Disclosure of accounting policies or adding notes to the financial statements does not rectify a failure to recognize such items, including accounting estimates.

- Specifies required or permitted disclosures.

Obtaining this understanding also provides the auditor with a basis for discussion with management about how management has applied those requirements relevant to the accounting estimate, and the auditor's determination of whether they have been applied appropriately.

- A14. Financial reporting frameworks may provide guidance for management on determining point estimates where alternatives exist. Some financial reporting frameworks, for example, require that the point estimate selected be the alternative that reflects management's judgment of the most likely outcome.¹⁰ Others may require, for example, use of a discounted probability-weighted expected value. In some cases, management may be able to make a point estimate directly. In other cases, management may be able to make a reliable point estimate only after considering alternative assumptions or outcomes from which it is able to determine a point estimate.
- A15. Financial reporting frameworks may require the disclosure of information concerning the significant assumptions to which the accounting estimate is particularly sensitive. Furthermore, where there is a high degree of estimation uncertainty, some financial reporting frameworks do not permit an accounting estimate to be recognized in the financial statements, but certain disclosures may be required in the notes to the financial statements.

Obtaining an Understanding of How Management Identifies the Need for Accounting Estimates (Ref: Para. 8(b))

- A16. The preparation of the financial statements requires management to determine whether a transaction, event or condition gives rise to the need to make an accounting estimate, and that all necessary accounting estimates have been recognized, measured and disclosed in the financial statements in accordance with the applicable financial reporting framework.
- A17. Management's identification of transactions, events and conditions that give rise to the need for accounting estimates is likely to be based on:
- Management's knowledge of the entity's business and the industry in which it operates.
 - Management's knowledge of the implementation of business strategies in the current period.
 - Where applicable, management's cumulative experience of preparing the entity's financial statements in prior periods.

¹⁰ Different financial reporting frameworks may use different terminology to describe point estimates determined in this way.

In such cases, the auditor may obtain an understanding of how management identifies the need for accounting estimates primarily through inquiry of management. In other cases, where management's process is more structured, for example, when management has a formal risk management function, the auditor may perform risk assessment procedures directed at the methods and practices followed by management for periodically reviewing the circumstances that give rise to the accounting estimates and re-estimating the accounting estimates as necessary. The completeness of accounting estimates is often an important consideration of the auditor, particularly accounting estimates relating to liabilities.

- A18. The auditor's understanding of the entity and its environment obtained during the performance of risk assessment procedures, together with other audit evidence obtained during the course of the audit, assist the auditor in identifying circumstances, or changes in circumstances, that may give rise to the need for an accounting estimate.
- A19. Inquiries of management about changes in circumstances may include, for example, inquiries about whether:
- The entity has engaged in new types of transactions that may give rise to accounting estimates.
 - Terms of transactions that gave rise to accounting estimates have changed.
 - Accounting policies relating to accounting estimates have changed, as a result of changes to the requirements of the applicable financial reporting framework or otherwise.
 - Regulatory or other changes outside the control of management have occurred that may require management to revise, or make new, accounting estimates.
 - New conditions or events have occurred that may give rise to the need for new or revised accounting estimates.
- A20. During the audit, the auditor may identify transactions, events and conditions that give rise to the need for accounting estimates that management failed to identify. ISA 315 (Revised) deals with circumstances where the auditor identifies risks of material misstatement that management failed to identify, including determining whether there is a significant deficiency in internal control with regard to the entity's risk assessment processes.¹¹

¹¹ ISA 315 (Revised), paragraph 16

Considerations Specific to Smaller Entities

- A21. Obtaining this understanding for smaller entities is often less complex as their business activities are often limited and transactions are less complex. Further, often a single person, for example the owner-manager, identifies the need to make an accounting estimate and the auditor may focus inquiries accordingly.

Obtaining an Understanding of How Management Makes the Accounting Estimates (Ref: Para. 8(c))

- A22. The preparation of the financial statements also requires management to establish financial reporting processes for making accounting estimates, including adequate internal control. Such processes include the following:
- Selecting appropriate accounting policies and prescribing estimation processes, including appropriate estimation or valuation methods, including, where applicable, models.
 - Developing or identifying relevant data and assumptions that affect accounting estimates.
 - Periodically reviewing the circumstances that give rise to the accounting estimates and re-estimating the accounting estimates as necessary.
- A23. Matters that the auditor may consider in obtaining an understanding of how management makes the accounting estimates include, for example:
- The types of accounts or transactions to which the accounting estimates relate (for example, whether the accounting estimates arise from the recording of routine and recurring transactions or whether they arise from non-recurring or unusual transactions).
 - Whether and, if so, how management has used recognized measurement techniques for making particular accounting estimates.
 - Whether the accounting estimates were made based on data available at an interim date and, if so, whether and how management has taken into account the effect of events, transactions and changes in circumstances occurring between that date and the period end.

Method of Measurement, Including the Use of Models (Ref: Para. 8(c)(i))

- A24. In some cases, the applicable financial reporting framework may prescribe the method of measurement for an accounting estimate, for example, a particular model that is to be used in measuring a fair value estimate. In many cases, however, the applicable financial reporting framework does not prescribe the method of measurement, or may specify alternative methods for measurement.
- A25. When the applicable financial reporting framework does not prescribe a particular method to be used in the circumstances, matters that the auditor may

consider in obtaining an understanding of the method or, where applicable the model, used to make accounting estimates include, for example:

- How management considered the nature of the asset or liability being estimated when selecting a particular method.
- Whether the entity operates in a particular business, industry or environment in which there are methods commonly used to make the particular type of accounting estimate.

A26. There may be greater risks of material misstatement, for example, in cases when management has internally developed a model to be used to make the accounting estimate or is departing from a method commonly used in a particular industry or environment.

Relevant Controls (Ref: Para. 8(c)(ii))

A27. Matters that the auditor may consider in obtaining an understanding of relevant controls include, for example, the experience and competence of those who make the accounting estimates, and controls related to:

- How management determines the completeness, relevance and accuracy of the data used to develop accounting estimates.
- The review and approval of accounting estimates, including the assumptions or inputs used in their development, by appropriate levels of management and, where appropriate, those charged with governance.
- The segregation of duties between those committing the entity to the underlying transactions and those responsible for making the accounting estimates, including whether the assignment of responsibilities appropriately takes account of the nature of the entity and its products or services (for example, in the case of a large financial institution, relevant segregation of duties may include an independent function responsible for estimation and validation of fair value pricing of the entity's proprietary financial products staffed by individuals whose remuneration is not tied to such products).

A28. Other controls may be relevant to making the accounting estimates depending on the circumstances. For example, if the entity uses specific models for making accounting estimates, management may put into place specific policies and procedures around such models. Relevant controls may include, for example, those established over:

- The design and development, or selection, of a particular model for a particular purpose.
- The use of the model.
- The maintenance and periodic validation of the integrity of the model.

Management's Use of Experts (Ref: Para. 8(c)(iii))

A29. Management may have, or the entity may employ individuals with, the experience and competence necessary to make the required point estimates. In some cases, however, management may need to engage an expert to make, or assist in making, them. This need may arise because of, for example:

- The specialized nature of the matter requiring estimation, for example, the measurement of mineral or hydrocarbon reserves in extractive industries.
- The technical nature of the models required to meet the relevant requirements of the applicable financial reporting framework, as may be the case in certain measurements at fair value.
- The unusual or infrequent nature of the condition, transaction or event requiring an accounting estimate.

Considerations specific to smaller entities

A30. In smaller entities, the circumstances requiring an accounting estimate often are such that the owner-manager is capable of making the required point estimate. In some cases, however, an expert will be needed. Discussion with the owner-manager early in the audit process about the nature of any accounting estimates, the completeness of the required accounting estimates, and the adequacy of the estimating process may assist the owner-manager in determining the need to use an expert.

Assumptions (Ref: Para. 8(c)(iv))

A31. Assumptions are integral components of accounting estimates. Matters that the auditor may consider in obtaining an understanding of the assumptions underlying the accounting estimates include, for example:

- The nature of the assumptions, including which of the assumptions are likely to be significant assumptions.
- How management assesses whether the assumptions are relevant and complete (that is, that all relevant variables have been taken into account).
- Where applicable, how management determines that the assumptions used are internally consistent.
- Whether the assumptions relate to matters within the control of management (for example, assumptions about the maintenance programs that may affect the estimation of an asset's useful life), and how they conform to the entity's business plans and the external environment, or to matters that are outside its control (for example, assumptions about interest rates, mortality rates, potential judicial or regulatory actions, or the variability and the timing of future cash flows).

- The nature and extent of documentation, if any, supporting the assumptions.

Assumptions may be made or identified by an expert to assist management in making the accounting estimates. Such assumptions, when used by management, become management's assumptions.

- A32. In some cases, assumptions may be referred to as inputs, for example, where management uses a model to make an accounting estimate, though the term inputs may also be used to refer to the underlying data to which specific assumptions are applied.
- A33. Management may support assumptions with different types of information drawn from internal and external sources, the relevance and reliability of which will vary. In some cases, an assumption may be reliably based on applicable information from either external sources (for example, published interest rate or other statistical data) or internal sources (for example, historical information or previous conditions experienced by the entity). In other cases, an assumption may be more subjective, for example, where the entity has no experience or external sources from which to draw.
- A34. In the case of fair value accounting estimates, assumptions reflect, or are consistent with, what knowledgeable, willing arm's length parties (sometimes referred to as "marketplace participants" or equivalent) would use in determining fair value when exchanging an asset or settling a liability. Specific assumptions will also vary with the characteristics of the asset or liability being valued, the valuation method used (for example, a market approach, or an income approach) and the requirements of the applicable financial reporting framework.
- A35. With respect to fair value accounting estimates, assumptions or inputs vary in terms of their source and bases, as follows:
- (a) Those that reflect what marketplace participants would use in pricing an asset or liability developed based on market data obtained from sources independent of the reporting entity (sometimes referred to as "observable inputs" or equivalent).
 - (b) Those that reflect the entity's own judgments about what assumptions marketplace participants would use in pricing the asset or liability developed based on the best information available in the circumstances (sometimes referred to as "unobservable inputs" or equivalent).

In practice, however, the distinction between (a) and (b) is not always apparent. Further, it may be necessary for management to select from a number of different assumptions used by different marketplace participants.

- A36. The extent of subjectivity, such as whether an assumption or input is observable, influences the degree of estimation uncertainty and thereby the auditor's assessment of the risks of material misstatement for a particular accounting estimate.

Changes in Methods for Making Accounting Estimates (Ref: Para. 8(c)(v))

A37. In evaluating how management makes the accounting estimates, the auditor is required to understand whether there has been or ought to have been a change from the prior period in the methods for making the accounting estimates. A specific estimation method may need to be changed in response to changes in the environment or circumstances affecting the entity or in the requirements of the applicable financial reporting framework. If management has changed the method for making an accounting estimate, it is important that management can demonstrate that the new method is more appropriate, or is itself a response to such changes. For example, if management changes the basis of making an accounting estimate from a mark-to-market approach to using a model, the auditor challenges whether management's assumptions about the marketplace are reasonable in light of economic circumstances.

Estimation Uncertainty (Ref: Para. 8(c)(vi))

A38. Matters that the auditor may consider in obtaining an understanding of whether and, if so, how management has assessed the effect of estimation uncertainty include, for example:

- Whether and, if so, how management has considered alternative assumptions or outcomes by, for example, performing a sensitivity analysis to determine the effect of changes in the assumptions on an accounting estimate.
- How management determines the accounting estimate when analysis indicates a number of outcome scenarios.
- Whether management monitors the outcome of accounting estimates made in the prior period, and whether management has appropriately responded to the outcome of that monitoring procedure.

Reviewing Prior Period Accounting Estimates (Ref: Para. 9)

A39. The outcome of an accounting estimate will often differ from the accounting estimate recognized in the prior period financial statements. By performing risk assessment procedures to identify and understand the reasons for such differences, the auditor may obtain:

- Information regarding the effectiveness of management's prior period estimation process, from which the auditor can judge the likely effectiveness of management's current process.
- Audit evidence that is pertinent to the re-estimation, in the current period, of prior period accounting estimates.
- Audit evidence of matters, such as estimation uncertainty, that may be required to be disclosed in the financial statements.

- A40. The review of prior period accounting estimates may also assist the auditor, in the current period, in identifying circumstances or conditions that increase the susceptibility of accounting estimates to, or indicate the presence of, possible management bias. The auditor's professional skepticism assists in identifying such circumstances or conditions and in determining the nature, timing and extent of further audit procedures.
- A41. A retrospective review of management judgments and assumptions related to significant accounting estimates is also required by ISA 240.¹² That review is conducted as part of the requirement for the auditor to design and perform procedures to review accounting estimates for biases that could represent a risk of material misstatement due to fraud, in response to the risks of management override of controls. As a practical matter, the auditor's review of prior period accounting estimates as a risk assessment procedure in accordance with this ISA may be carried out in conjunction with the review required by ISA 240.
- A42. The auditor may judge that a more detailed review is required for those accounting estimates that were identified during the prior period audit as having high estimation uncertainty, or for those accounting estimates that have changed significantly from the prior period. On the other hand, for example, for accounting estimates that arise from the recording of routine and recurring transactions, the auditor may judge that the application of analytical procedures as risk assessment procedures is sufficient for purposes of the review.
- A43. For fair value accounting estimates and other accounting estimates based on current conditions at the measurement date, more variation may exist between the fair value amount recognized in the prior period financial statements and the outcome or the amount re-estimated for the purpose of the current period. This is because the measurement objective for such accounting estimates deals with perceptions about value at a point in time, which may change significantly and rapidly as the environment in which the entity operates changes. The auditor may therefore focus the review on obtaining information that would be relevant to identifying and assessing risks of material misstatement. For example, in some cases, obtaining an understanding of changes in marketplace participant assumptions which affected the outcome of a prior period fair value accounting estimate may be unlikely to provide relevant information for audit purposes. If so, then the auditor's consideration of the outcome of prior period fair value accounting estimates may be directed more towards understanding the effectiveness of management's prior estimation process, that is, management's track record, from which the auditor can judge the likely effectiveness of management's current process.

¹² ISA 240, *The Auditor's Responsibilities Relating to Fraud in an Audit of Financial Statements*, paragraph 32(b)(ii)

- A44. A difference between the outcome of an accounting estimate and the amount recognized in the prior period financial statements does not necessarily represent a misstatement of the prior period financial statements. However, it may do so if, for example, the difference arises from information that was available to management when the prior period's financial statements were finalized, or that could reasonably be expected to have been obtained and taken into account in the preparation of those financial statements. Many financial reporting frameworks contain guidance on distinguishing between changes in accounting estimates that constitute misstatements and changes that do not, and the accounting treatment required to be followed.

Identifying and Assessing the Risks of Material Misstatement

Estimation Uncertainty (Ref: Para. 10)

- A45. The degree of estimation uncertainty associated with an accounting estimate may be influenced by factors such as:

- The extent to which the accounting estimate depends on judgment.
- The sensitivity of the accounting estimate to changes in assumptions.
- The existence of recognized measurement techniques that may mitigate the estimation uncertainty (though the subjectivity of the assumptions used as inputs may nevertheless give rise to estimation uncertainty).
- The length of the forecast period, and the relevance of data drawn from past events to forecast future events.
- The availability of reliable data from external sources.
- The extent to which the accounting estimate is based on observable or unobservable inputs.

The degree of estimation uncertainty associated with an accounting estimate may influence the estimate's susceptibility to bias.

- A46. Matters that the auditor considers in assessing the risks of material misstatement may also include:

- The actual or expected magnitude of an accounting estimate.
- The recorded amount of the accounting estimate (that is, management's point estimate) in relation to the amount expected by the auditor to be recorded.
- Whether management has used an expert in making the accounting estimate.
- The outcome of the review of prior period accounting estimates.

High Estimation Uncertainty and Significant Risks (Ref: Para. 11)

- A47. Examples of accounting estimates that may have high estimation uncertainty include the following:
- Accounting estimates that are highly dependent upon judgment, for example, judgments about the outcome of pending litigation or the amount and timing of future cash flows dependent on uncertain events many years in the future.
 - Accounting estimates that are not calculated using recognized measurement techniques.
 - Accounting estimates where the results of the auditor's review of similar accounting estimates made in the prior period financial statements indicate a substantial difference between the original accounting estimate and the actual outcome.
 - Fair value accounting estimates for which a highly specialized entity-developed model is used or for which there are no observable inputs.
- A48. A seemingly immaterial accounting estimate may have the potential to result in a material misstatement due to the estimation uncertainty associated with the estimation; that is, the size of the amount recognized or disclosed in the financial statements for an accounting estimate may not be an indicator of its estimation uncertainty.
- A49. In some circumstances, the estimation uncertainty is so high that a reasonable accounting estimate cannot be made. The applicable financial reporting framework may, therefore, preclude recognition of the item in the financial statements, or its measurement at fair value. In such cases, the significant risks relate not only to whether an accounting estimate should be recognized, or whether it should be measured at fair value, but also to the adequacy of the disclosures. With respect to such accounting estimates, the applicable financial reporting framework may require disclosure of the accounting estimates and the high estimation uncertainty associated with them (see paragraphs A120-A123).
- A50. If the auditor determines that an accounting estimate gives rise to a significant risk, the auditor is required to obtain an understanding of the entity's controls, including control activities.¹³
- A51. In some cases, the estimation uncertainty of an accounting estimate may cast significant doubt about the entity's ability to continue as a going concern. ISA 570¹⁴ establishes requirements and provides guidance in such circumstances.

¹³ ISA 315 (Revised), paragraph 29

¹⁴ ISA 570, *Going Concern*

Responses to the Assessed Risks of Material Misstatement (Ref: Para. 12)

A52. ISA 330 requires the auditor to design and perform audit procedures whose nature, timing and extent are responsive to the assessed risks of material misstatement in relation to accounting estimates at both the financial statement and assertion levels.¹⁵ Paragraphs A53–A115 focus on specific responses at the assertion level only.

Application of the Requirements of the Applicable Financial Reporting Framework
(Ref: Para. 12(a))

A53. Many financial reporting frameworks prescribe certain conditions for the recognition of accounting estimates and specify the methods for making them and required disclosures. Such requirements may be complex and require the application of judgment. Based on the understanding obtained in performing risk assessment procedures, the requirements of the applicable financial reporting framework that may be susceptible to misapplication or differing interpretations become the focus of the auditor’s attention.

A54. Determining whether management has appropriately applied the requirements of the applicable financial reporting framework is based, in part, on the auditor’s understanding of the entity and its environment. For example, the measurement of the fair value of some items, such as intangible assets acquired in a business combination, may involve special considerations that are affected by the nature of the entity and its operations.

A55. In some situations, additional audit procedures, such as the inspection by the auditor of the current physical condition of an asset, may be necessary to determine whether management has appropriately applied the requirements of the applicable financial reporting framework.

A56. The application of the requirements of the applicable financial reporting framework requires management to consider changes in the environment or circumstances that affect the entity. For example, the introduction of an active market for a particular class of asset or liability may indicate that the use of discounted cash flows to estimate the fair value of such asset or liability is no longer appropriate.

Consistency in Methods and Basis for Changes (Ref: Para. 12(b))

A57. The auditor’s consideration of a change in an accounting estimate, or in the method for making it from the prior period, is important because a change that is not based on a change in circumstances or new information is considered arbitrary. Arbitrary changes in an accounting estimate result in inconsistent

¹⁵ ISA 330, paragraphs 5–6

financial statements over time and may give rise to a financial statement misstatement or be an indicator of possible management bias.

- A58. Management often is able to demonstrate good reason for a change in an accounting estimate or the method for making an accounting estimate from one period to another based on a change in circumstances. What constitutes a good reason, and the adequacy of support for management's contention that there has been a change in circumstances that warrants a change in an accounting estimate or the method for making an accounting estimate, are matters of judgment.

Responses to the Assessed Risks of Material Misstatements (Ref: Para. 13)

- A59. The auditor's decision as to which response, individually or in combination, in paragraph 13 to undertake to respond to the risks of material misstatement may be influenced by such matters as:
- The nature of the accounting estimate, including whether it arises from routine or non routine transactions.
 - Whether the procedure(s) is expected to effectively provide the auditor with sufficient appropriate audit evidence.
 - The assessed risk of material misstatement, including whether the assessed risk is a significant risk.
- A60. For example, when evaluating the reasonableness of the allowance for doubtful accounts, an effective procedure for the auditor may be to review subsequent cash collections in combination with other procedures. Where the estimation uncertainty associated with an accounting estimate is high, for example, an accounting estimate based on a proprietary model for which there are unobservable inputs, it may be that a combination of the responses to assessed risks in paragraph 13 is necessary in order to obtain sufficient appropriate audit evidence.
- A61. Additional guidance explaining the circumstances in which each of the responses may be appropriate is provided in paragraphs A62–A95.

Events Occurring Up to the Date of the Auditor's Report (Ref: Para. 13(a))

- A62. Determining whether events occurring up to the date of the auditor's report provide audit evidence regarding the accounting estimate may be an appropriate response when such events are expected to:
- Occur; and
 - Provide audit evidence that confirms or contradicts the accounting estimate.

- A63. Events occurring up to the date of the auditor's report may sometimes provide sufficient appropriate audit evidence about an accounting estimate. For example, sale of the complete inventory of a superseded product shortly after the period end may provide audit evidence relating to the estimate of its net realizable value. In such cases, there may be no need to perform additional audit procedures on the accounting estimate, provided that sufficient appropriate evidence about the events is obtained.
- A64. For some accounting estimates, events occurring up to the date of the auditor's report are unlikely to provide audit evidence regarding the accounting estimate. For example, the conditions or events relating to some accounting estimates develop only over an extended period. Also, because of the measurement objective of fair value accounting estimates, information after the period-end may not reflect the events or conditions existing at the balance sheet date and therefore may not be relevant to the measurement of the fair value accounting estimate. Paragraph 13 identifies other responses to the risks of material misstatement that the auditor may undertake.
- A65. In some cases, events that contradict the accounting estimate may indicate that management has ineffective processes for making accounting estimates, or that there is management bias in the making of accounting estimates.
- A66. Even though the auditor may decide not to undertake this approach in respect of specific accounting estimates, the auditor is required to comply with ISA 560.¹⁶ The auditor is required to perform audit procedures designed to obtain sufficient appropriate audit evidence that all events occurring between the date of the financial statements and the date of the auditor's report that require adjustment of, or disclosure in, the financial statements have been identified¹⁷ and appropriately reflected in the financial statements.¹⁸ Because the measurement of many accounting estimates, other than fair value accounting estimates, usually depends on the outcome of future conditions, transactions or events, the auditor's work under ISA 560 is particularly relevant.

Considerations specific to smaller entities

- A67. When there is a longer period between the balance sheet date and the date of the auditor's report, the auditor's review of events in this period may be an effective response for accounting estimates other than fair value accounting estimates. This may particularly be the case in some smaller owner-managed entities, especially when management does not have formalized control procedures over accounting estimates.

¹⁶ ISA 560, *Subsequent Events*

¹⁷ ISA 560, paragraph 6

¹⁸ ISA 560, paragraph 8

Testing How Management Made the Accounting Estimate (Ref: Para. 13(b))

- A68. Testing how management made the accounting estimate and the data on which it is based may be an appropriate response when the accounting estimate is a fair value accounting estimate developed on a model that uses observable and unobservable inputs. It may also be appropriate when, for example:
- The accounting estimate is derived from the routine processing of data by the entity's accounting system.
 - The auditor's review of similar accounting estimates made in the prior period financial statements suggests that management's current period process is likely to be effective.
 - The accounting estimate is based on a large population of items of a similar nature that individually are not significant.
- A69. Testing how management made the accounting estimate may involve, for example:
- Testing the extent to which data on which the accounting estimate is based is accurate, complete and relevant, and whether the accounting estimate has been properly determined using such data and management assumptions.
 - Considering the source, relevance and reliability of external data or information, including that received from external experts engaged by management to assist in making an accounting estimate.
 - Recalculating the accounting estimate, and reviewing information about an accounting estimate for internal consistency.
 - Considering management's review and approval processes.

Considerations specific to smaller entities

- A70. In smaller entities, the process for making accounting estimates is likely to be less structured than in larger entities. Smaller entities with active management involvement may not have extensive descriptions of accounting procedures, sophisticated accounting records, or written policies. Even if the entity has no formal established process, it does not mean that management is not able to provide a basis upon which the auditor can test the accounting estimate.

Evaluating the method of measurement (Ref: Para. 13(b)(i))

- A71. When the applicable financial reporting framework does not prescribe the method of measurement, evaluating whether the method used, including any applicable model, is appropriate in the circumstances is a matter of professional judgment.
- A72. For this purpose, matters that the auditor may consider include, for example, whether:

- Management's rationale for the method selected is reasonable.
- Management has sufficiently evaluated and appropriately applied the criteria, if any, provided in the applicable financial reporting framework to support the selected method.
- The method is appropriate in the circumstances given the nature of the asset or liability being estimated and the requirements of the applicable financial reporting framework relevant to accounting estimates.
- The method is appropriate in relation to the business, industry and environment in which the entity operates.

A73. In some cases, management may have determined that different methods result in a range of significantly different estimates. In such cases, obtaining an understanding of how the entity has investigated the reasons for these differences may assist the auditor in evaluating the appropriateness of the method selected.

Evaluating the use of models

A74. In some cases, particularly when making fair value accounting estimates, management may use a model. Whether the model used is appropriate in the circumstances may depend on a number of factors, such as the nature of the entity and its environment, including the industry in which it operates, and the specific asset or liability being measured.

A75. The extent to which the following considerations are relevant depends on the circumstances, including whether the model is one that is commercially available for use in a particular sector or industry, or a proprietary model. In some cases, an entity may use an expert to develop and test a model.

A76. Depending on the circumstances, matters that the auditor may also consider in testing the model include, for example, whether:

- The model is validated prior to usage, with periodic reviews to ensure it is still suitable for its intended use. The entity's validation process may include evaluation of:
 - The model's theoretical soundness and mathematical integrity, including the appropriateness of model parameters.
 - The consistency and completeness of the model's inputs with market practices.
 - The model's output as compared to actual transactions.
- Appropriate change control policies and procedures exist.
- The model is periodically calibrated and tested for validity, particularly when inputs are subjective.

- Adjustments are made to the output of the model, including in the case of fair value accounting estimates, whether such adjustments reflect the assumptions marketplace participants would use in similar circumstances.
- The model is adequately documented, including the model's intended applications and limitations and its key parameters, required inputs, and results of any validation analysis performed.

Assumptions used by management (Ref: Para. 13(b)(ii))

- A77. The auditor's evaluation of the assumptions used by management is based only on information available to the auditor at the time of the audit. Audit procedures dealing with management assumptions are performed in the context of the audit of the entity's financial statements, and not for the purpose of providing an opinion on assumptions themselves.
- A78. Matters that the auditor may consider in evaluating the reasonableness of the assumptions used by management include, for example:
- Whether individual assumptions appear reasonable.
 - Whether the assumptions are interdependent and internally consistent.
 - Whether the assumptions appear reasonable when considered collectively or in conjunction with other assumptions, either for that accounting estimate or for other accounting estimates.
 - In the case of fair value accounting estimates, whether the assumptions appropriately reflect observable marketplace assumptions.
- A79. The assumptions on which accounting estimates are based may reflect what management expects will be the outcome of specific objectives and strategies. In such cases, the auditor may perform audit procedures to evaluate the reasonableness of such assumptions by considering, for example, whether the assumptions are consistent with:
- The general economic environment and the entity's economic circumstances.
 - The plans of the entity.
 - Assumptions made in prior periods, if relevant.
 - Experience of, or previous conditions experienced by, the entity, to the extent this historical information may be considered representative of future conditions or events.
 - Other assumptions used by management relating to the financial statements.

A80. The reasonableness of the assumptions used may depend on management's intent and ability to carry out certain courses of action. Management often documents plans and intentions relevant to specific assets or liabilities and the financial reporting framework may require it to do so. Although the extent of audit evidence to be obtained about management's intent and ability is a matter of professional judgment, the auditor's procedures may include the following:

- Review of management's history of carrying out its stated intentions.
- Review of written plans and other documentation, including, where applicable, formally approved budgets, authorizations or minutes.
- Inquiry of management about its reasons for a particular course of action.
- Review of events occurring subsequent to the date of the financial statements and up to the date of the auditor's report.
- Evaluation of the entity's ability to carry out a particular course of action given the entity's economic circumstances, including the implications of its existing commitments.

Certain financial reporting frameworks, however, may not permit management's intentions or plans to be taken into account when making an accounting estimate. This is often the case for fair value accounting estimates because their measurement objective requires that assumptions reflect those used by marketplace participants.

A81. Matters that the auditor may consider in evaluating the reasonableness of assumptions used by management underlying fair value accounting estimates, in addition to those discussed above, where applicable, may include, for example:

- Where relevant, whether and, if so, how management has incorporated market-specific inputs into the development of assumptions.
- Whether the assumptions are consistent with observable market conditions, and the characteristics of the asset or liability being measured at fair value.
- Whether the sources of market-participant assumptions are relevant and reliable, and how management has selected the assumptions to use when a number of different market participant assumptions exist.
- Where appropriate, whether and, if so, how management considered assumptions used in, or information about, comparable transactions, assets or liabilities.

A82. Further, fair value accounting estimates may comprise observable inputs as well as unobservable inputs. Where fair value accounting estimates are based on unobservable inputs, matters that the auditor may consider include, for example, how management supports the following:

- The identification of the characteristics of marketplace participants relevant to the accounting estimate.
- Modifications it has made to its own assumptions to reflect its view of assumptions marketplace participants would use.
- Whether it has incorporated the best information available in the circumstances.
- Where applicable, how its assumptions take account of comparable transactions, assets or liabilities.

If there are unobservable inputs, it is more likely that the auditor's evaluation of the assumptions will need to be combined with other responses to assessed risks in paragraph 13 in order to obtain sufficient appropriate audit evidence. In such cases, it may be necessary for the auditor to perform other audit procedures, for example, examining documentation supporting the review and approval of the accounting estimate by appropriate levels of management and, where appropriate, by those charged with governance.

- A83. In evaluating the reasonableness of the assumptions supporting an accounting estimate, the auditor may identify one or more significant assumptions. If so, it may indicate that the accounting estimate has high estimation uncertainty and may, therefore, give rise to a significant risk. Additional responses to significant risks are described in paragraphs A102–A115.

Testing the Operating Effectiveness of Controls (Ref: Para. 13(c))

- A84. Testing the operating effectiveness of the controls over how management made the accounting estimate may be an appropriate response when management's process has been well-designed, implemented and maintained, for example:
- Controls exist for the review and approval of the accounting estimates by appropriate levels of management and, where appropriate, by those charged with governance.
 - The accounting estimate is derived from the routine processing of data by the entity's accounting system.
- A85. Testing the operating effectiveness of the controls is required when:
- (a) The auditor's assessment of risks of material misstatement at the assertion level includes an expectation that controls over the process are operating effectively; or
 - (b) Substantive procedures alone do not provide sufficient appropriate audit evidence at the assertion level.¹⁹

¹⁹ ISA 330, paragraph 8

Considerations specific to smaller entities

A86. Controls over the process to make an accounting estimate may exist in smaller entities, but the formality with which they operate varies. Further, smaller entities may determine that certain types of controls are not necessary because of active management involvement in the financial reporting process. In the case of very small entities, however, there may not be many controls that the auditor can identify. For this reason, the auditor's response to the assessed risks is likely to be substantive in nature, with the auditor performing one or more of the other responses in paragraph 13.

Developing a Point Estimate or Range (Ref: Para. 13(d))

A87. Developing a point estimate or a range to evaluate management's point estimate may be an appropriate response where, for example:

- An accounting estimate is not derived from the routine processing of data by the accounting system.
- The auditor's review of similar accounting estimates made in the prior period financial statements suggests that management's current period process is unlikely to be effective.
- The entity's controls within and over management's processes for determining accounting estimates are not well designed or properly implemented.
- Events or transactions between the period end and the date of the auditor's report contradict management's point estimate.
- There are alternative sources of relevant data available to the auditor which can be used in developing a point estimate or a range.

A88. Even where the entity's controls are well designed and properly implemented, developing a point estimate or a range may be an effective or efficient response to the assessed risks. In other situations, the auditor may consider this approach as part of determining whether further procedures are necessary and, if so, their nature and extent.

A89. The approach taken by the auditor in developing either a point estimate or a range may vary based on what is considered most effective in the circumstances. For example, the auditor may initially develop a preliminary point estimate, and then assess its sensitivity to changes in assumptions to ascertain a range with which to evaluate management's point estimate. Alternatively, the auditor may begin by developing a range for purposes of determining, where possible, a point estimate.

A90. The ability of the auditor to develop a point estimate, as opposed to a range, depends on several factors, including the model used, the nature and extent of

data available and the estimation uncertainty involved with the accounting estimate. Further, the decision to develop a point estimate or range may be influenced by the applicable financial reporting framework, which may prescribe the point estimate that is to be used after consideration of the alternative outcomes and assumptions, or prescribe a specific measurement method (for example, the use of a discounted probability-weighted expected value).

A91. The auditor may develop a point estimate or a range in a number of ways, for example, by:

- Using a model, for example, one that is commercially available for use in a particular sector or industry, or a proprietary or auditor-developed model.
- Further developing management's consideration of alternative assumptions or outcomes, for example, by introducing a different set of assumptions.
- Employing or engaging a person with specialized expertise to develop or execute the model, or to provide relevant assumptions.
- Making reference to other comparable conditions, transactions or events, or, where relevant, markets for comparable assets or liabilities.

Understanding Management's Assumptions or Method (Ref: Para. 13(d)(i))

A92. When the auditor develops a point estimate or a range and uses assumptions or a method different from those used by management, paragraph 13(d)(i) requires the auditor to obtain a sufficient understanding of the assumptions or method used by management in making the accounting estimate. This understanding provides the auditor with information that may be relevant to the auditor's development of an appropriate point estimate or range. Further, it assists the auditor to understand and evaluate any significant differences from management's point estimate. For example, a difference may arise because the auditor used different, but equally valid, assumptions as compared with those used by management. This may reveal that the accounting estimate is highly sensitive to certain assumptions and therefore subject to high estimation uncertainty, indicating that the accounting estimate may be a significant risk. Alternatively, a difference may arise as a result of a factual error made by management. Depending on the circumstances, the auditor may find it helpful in drawing conclusions to discuss with management the basis for the assumptions used and their validity, and the difference, if any, in the approach taken to making the accounting estimate.

Narrowing a Range (Ref: Para. 13(d)(ii))

A93. When the auditor concludes that it is appropriate to use a range to evaluate the reasonableness of management's point estimate (the auditor's range),

paragraph 13(d)(ii) requires that range to encompass all “reasonable outcomes” rather than all possible outcomes. The range cannot be one that comprises all possible outcomes if it is to be useful, as such a range would be too wide to be effective for purposes of the audit. The auditor’s range is useful and effective when it is sufficiently narrow to enable the auditor to conclude whether the accounting estimate is misstated.

- A94. Ordinarily, a range that has been narrowed to be equal to or less than performance materiality is adequate for the purposes of evaluating the reasonableness of management’s point estimate. However, particularly in certain industries, it may not be possible to narrow the range to below such an amount. This does not necessarily preclude recognition of the accounting estimate. It may indicate, however, that the estimation uncertainty associated with the accounting estimate is such that it gives rise to a significant risk. Additional responses to significant risks are described in paragraphs A102–A115.
- A95. Narrowing the range to a position where all outcomes within the range are considered reasonable may be achieved by:
- (a) Eliminating from the range those outcomes at the extremities of the range judged by the auditor to be unlikely to occur; and
 - (b) Continuing to narrow the range, based on audit evidence available, until the auditor concludes that all outcomes within the range are considered reasonable. In some rare cases, the auditor may be able to narrow the range until the audit evidence indicates a point estimate.

Considering Whether Specialized Skills or Knowledge Are Required (Ref: Para. 14)

- A96. In planning the audit, the auditor is required to ascertain the nature, timing and extent of resources necessary to perform the audit engagement.²⁰ This may include, as necessary, the involvement of those with specialized skills or knowledge. In addition, ISA 220 requires the engagement partner to be satisfied that the engagement team, and any auditor’s external experts who are not part of the engagement team, collectively have the appropriate competence and capabilities to perform the audit engagement.²¹ During the course of the audit of accounting estimates the auditor may identify, in light of the experience of the auditor and the circumstances of the engagement, the need for specialized skills or knowledge to be applied in relation to one or more aspects of the accounting estimates.

²⁰ ISA 300, *Planning an Audit of Financial Statements*, paragraph 8(e)

²¹ ISA 220, *Quality Control for an Audit of Financial Statements*, paragraph 14

- A97. Matters that may affect the auditor's consideration of whether specialized skills or knowledge is required include, for example:
- The nature of the underlying asset, liability or component of equity in a particular business or industry (for example, mineral deposits, agricultural assets, complex financial instruments).
 - A high degree of estimation uncertainty.
 - Complex calculations or specialized models are involved, for example, when estimating fair values when there is no observable market.
 - The complexity of the requirements of the applicable financial reporting framework relevant to accounting estimates, including whether there are areas known to be subject to differing interpretation or practice is inconsistent or developing.
 - The procedures the auditor intends to undertake in responding to assessed risks.
- A98. For the majority of accounting estimates, even when there is estimation uncertainty, it is unlikely that specialized skills or knowledge will be required. For example, it is unlikely that specialized skills or knowledge would be necessary for an auditor to evaluate an allowance for doubtful accounts.
- A99. However, the auditor may not possess the specialized skills or knowledge required when the matter involved is in a field other than accounting or auditing and may need to obtain it from an auditor's expert. ISA 620²² establishes requirements and provides guidance in determining the need to employ or engage an auditor's expert and the auditor's responsibilities when using the work of an auditor's expert.
- A100. Further, in some cases, the auditor may conclude that it is necessary to obtain specialized skills or knowledge related to specific areas of accounting or auditing. Individuals with such skills or knowledge may be employed by the auditor's firm or engaged from an external organization outside of the auditor's firm. Where such individuals perform audit procedures on the engagement, they are part of the engagement team and accordingly, they are subject to the requirements in ISA 220.
- A101. Depending on the auditor's understanding and experience of working with the auditor's expert or those other individuals with specialized skills or knowledge, the auditor may consider it appropriate to discuss matters such as the requirements of the applicable financial reporting framework with the individuals involved to establish that their work is relevant for audit purposes.

²² ISA 620, *Using the Work of an Auditor's Expert*

Further Substantive Procedures to Respond to Significant Risks (Ref: Para. 15)

A102. In auditing accounting estimates that give rise to significant risks, the auditor's further substantive procedures are focused on the evaluation of:

- (a) How management has assessed the effect of estimation uncertainty on the accounting estimate, and the effect such uncertainty may have on the appropriateness of the recognition of the accounting estimate in the financial statements; and
- (b) The adequacy of related disclosures.

Estimation Uncertainty

Management's Consideration of Estimation Uncertainty (Ref: Para. 15(a))

A103. Management may evaluate alternative assumptions or outcomes of the accounting estimates through a number of methods, depending on the circumstances. One possible method used by management is to undertake a sensitivity analysis. This might involve determining how the monetary amount of an accounting estimate varies with different assumptions. Even for accounting estimates measured at fair value there can be variation because different market participants will use different assumptions. A sensitivity analysis could lead to the development of a number of outcome scenarios, sometimes characterized as a range of outcomes by management, such as "pessimistic" and "optimistic" scenarios.

A104. A sensitivity analysis may demonstrate that an accounting estimate is not sensitive to changes in particular assumptions. Alternatively, it may demonstrate that the accounting estimate is sensitive to one or more assumptions that then become the focus of the auditor's attention.

A105. This is not intended to suggest that one particular method of addressing estimation uncertainty (such as sensitivity analysis) is more suitable than another, or that management's consideration of alternative assumptions or outcomes needs to be conducted through a detailed process supported by extensive documentation. Rather, it is whether management has assessed how estimation uncertainty may affect the accounting estimate that is important, not the specific manner in which it is done. Accordingly, where management has not considered alternative assumptions or outcomes, it may be necessary for the auditor to discuss with management, and request support for, how it has addressed the effects of estimation uncertainty on the accounting estimate.

Considerations specific to smaller entities

A106. Smaller entities may use simple means to assess the estimation uncertainty. In addition to the auditor's review of available documentation, the auditor may obtain other audit evidence of management consideration of alternative assumptions or outcomes by inquiry of management. In addition, management

may not have the expertise to consider alternative outcomes or otherwise address the estimation uncertainty of the accounting estimate. In such cases, the auditor may explain to management the process or the different methods available for doing so, and the documentation thereof. This would not, however, change the responsibilities of management for the preparation of the financial statements.

Significant Assumptions (Ref: Para. 15(b))

- A107. An assumption used in making an accounting estimate may be deemed to be significant if a reasonable variation in the assumption would materially affect the measurement of the accounting estimate.
- A108. Support for significant assumptions derived from management's knowledge may be obtained from management's continuing processes of strategic analysis and risk management. Even without formal established processes, such as may be the case in smaller entities, the auditor may be able to evaluate the assumptions through inquiries of and discussions with management, along with other audit procedures in order to obtain sufficient appropriate audit evidence.
- A109. The auditor's considerations in evaluating assumptions made by management are described in paragraphs A77–A83.

Management Intent and Ability (Ref: Para. 15(c))

- A110. The auditor's considerations in relation to assumptions made by management and management's intent and ability are described in paragraphs A13 and A80.

Development of a Range (Ref: Para. 16)

A111. In preparing the financial statements, management may be satisfied that it has adequately addressed the effects of estimation uncertainty on the accounting estimates that give rise to significant risks. In some circumstances, however, the auditor may view the efforts of management as inadequate. This may be the case, for example, where, in the auditor's judgment:

- Sufficient appropriate audit evidence could not be obtained through the auditor's evaluation of how management has addressed the effects of estimation uncertainty.
- It is necessary to explore further the degree of estimation uncertainty associated with an accounting estimate, for example, where the auditor is aware of wide variation in outcomes for similar accounting estimates in similar circumstances.
- It is unlikely that other audit evidence can be obtained, for example, through the review of events occurring up to the date of the auditor's report.

- Indicators of management bias in the making of accounting estimates may exist.

A112. The auditor's considerations in determining a range for this purpose are described in paragraphs A87–A95.

Recognition and Measurement Criteria

Recognition of the Accounting Estimates in the Financial Statements (Ref: Para. 17(a))

A113. Where management has recognized an accounting estimate in the financial statements, the focus of the auditor's evaluation is on whether the measurement of the accounting estimate is sufficiently reliable to meet the recognition criteria of the applicable financial reporting framework.

A114. With respect to accounting estimates that have not been recognized, the focus of the auditor's evaluation is on whether the recognition criteria of the applicable financial reporting framework have in fact been met. Even where an accounting estimate has not been recognized, and the auditor concludes that this treatment is appropriate, there may be a need for disclosure of the circumstances in the notes to the financial statements. The auditor may also determine that there is a need to draw the reader's attention to a significant uncertainty by adding an Emphasis of Matter paragraph to the auditor's report. ISA 706²³ establishes requirements and provides guidance concerning such paragraphs.

Measurement Basis for the Accounting Estimates (Ref: Para. 17(b))

A115. With respect to fair value accounting estimates, some financial reporting frameworks presume that fair value can be measured reliably as a prerequisite to either requiring or permitting fair value measurements and disclosures. In some cases, this presumption may be overcome when, for example, there is no appropriate method or basis for measurement. In such cases, the focus of the auditor's evaluation is on whether management's basis for overcoming the presumption relating to the use of fair value set forth under the applicable financial reporting framework is appropriate.

Evaluating the Reasonableness of the Accounting Estimates, and Determining Misstatements (Ref: Para. 18)

A116. Based on the audit evidence obtained, the auditor may conclude that the evidence points to an accounting estimate that differs from management's point estimate. Where the audit evidence supports a point estimate, the difference between the auditor's point estimate and management's point estimate constitutes a

²³ ISA 706, *Emphasis of Matter Paragraphs and Other Matter Paragraphs in the Independent Auditor's Report*

misstatement. Where the auditor has concluded that using the auditor's range provides sufficient appropriate audit evidence, a management point estimate that lies outside the auditor's range would not be supported by audit evidence. In such cases, the misstatement is no less than the difference between management's point estimate and the nearest point of the auditor's range.

A117. Where management has changed an accounting estimate, or the method in making it, from the prior period based on a subjective assessment that there has been a change in circumstances, the auditor may conclude based on the audit evidence that the accounting estimate is misstated as a result of an arbitrary change by management, or may regard it as an indicator of possible management bias (see paragraphs A124–A125).

A118. ISA 450²⁴ provides guidance on distinguishing misstatements for purposes of the auditor's evaluation of the effect of uncorrected misstatements on the financial statements. In relation to accounting estimates, a misstatement, whether caused by fraud or error, may arise as a result of:

- Misstatements about which there is no doubt (factual misstatements).
- Differences arising from management's judgments concerning accounting estimates that the auditor considers unreasonable, or the selection or application of accounting policies that the auditor considers inappropriate (judgmental misstatements).
- The auditor's best estimate of misstatements in populations, involving the projection of misstatements identified in audit samples to the entire populations from which the samples were drawn (projected misstatements).

In some cases involving accounting estimates, a misstatement could arise as a result of a combination of these circumstances, making separate identification difficult or impossible.

A119. Evaluating the reasonableness of accounting estimates and related disclosures included in the notes to the financial statements, whether required by the applicable financial reporting framework or disclosed voluntarily, involves essentially the same types of considerations applied when auditing an accounting estimate recognized in the financial statements.

Disclosures Related to Accounting Estimates

Disclosures in Accordance with the Applicable Financial Reporting Framework
(Ref: Para. 19)

A120. The presentation of financial statements in accordance with the applicable financial reporting framework includes adequate disclosure of material matters.

²⁴ ISA 450, *Evaluation of Misstatements Identified during the Audit*

The applicable financial reporting framework may permit, or prescribe, disclosures related to accounting estimates, and some entities may disclose voluntarily additional information in the notes to the financial statements. These disclosures may include, for example:

- The assumptions used.
- The method of estimation used, including any applicable model.
- The basis for the selection of the method of estimation.
- The effect of any changes to the method of estimation from the prior period.
- The sources and implications of estimation uncertainty.

Such disclosures are relevant to users in understanding the accounting estimates recognized or disclosed in the financial statements, and sufficient appropriate audit evidence needs to be obtained about whether the disclosures are in accordance with the requirements of the applicable financial reporting framework.

A121. In some cases, the applicable financial reporting framework may require specific disclosures regarding uncertainties. For example, some financial reporting frameworks prescribe:

- The disclosure of key assumptions and other sources of estimation uncertainty that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities. Such requirements may be described using terms such as “Key Sources of Estimation Uncertainty” or “Critical Accounting Estimates.”
- The disclosure of the range of possible outcomes, and the assumptions used in determining the range.
- The disclosure of information regarding the significance of fair value accounting estimates to the entity’s financial position and performance.
- Qualitative disclosures such as the exposures to risk and how they arise, the entity’s objectives, policies and procedures for managing the risk and the methods used to measure the risk and any changes from the previous period of these qualitative concepts.
- Quantitative disclosures such as the extent to which the entity is exposed to risk, based on information provided internally to the entity’s key management personnel, including credit risk, liquidity risk and market risk.

Disclosures of Estimation Uncertainty for Accounting Estimates that Give Rise to Significant Risks (Ref: Para. 20)

A122. In relation to accounting estimates having significant risk, even where the disclosures are in accordance with the applicable financial reporting framework, the auditor may conclude that the disclosure of estimation uncertainty is inadequate

in light of the circumstances and facts involved. The auditor's evaluation of the adequacy of disclosure of estimation uncertainty increases in importance the greater the range of possible outcomes of the accounting estimate is in relation to materiality (see related discussion in paragraph A94).

A123. In some cases, the auditor may consider it appropriate to encourage management to describe, in the notes to the financial statements, the circumstances relating to the estimation uncertainty. ISA 705²⁵ provides guidance on the implications for the auditor's opinion when the auditor believes that management's disclosure of estimation uncertainty in the financial statements is inadequate or misleading.

Indicators of Possible Management Bias (Ref: Para. 21)

A124. During the audit, the auditor may become aware of judgments and decisions made by management which give rise to indicators of possible management bias. Such indicators may affect the auditor's conclusion as to whether the auditor's risk assessment and related responses remain appropriate, and the auditor may need to consider the implications for the rest of the audit. Further, they may affect the auditor's evaluation of whether the financial statements as a whole are free from material misstatement, as discussed in ISA 700.²⁶

A125. Examples of indicators of possible management bias with respect to accounting estimates include:

- Changes in an accounting estimate, or the method for making it, where management has made a subjective assessment that there has been a change in circumstances.
- Use of an entity's own assumptions for fair value accounting estimates when they are inconsistent with observable marketplace assumptions.
- Selection or construction of significant assumptions that yield a point estimate favorable for management objectives.
- Selection of a point estimate that may indicate a pattern of optimism or pessimism.

Written Representations (Ref: Para. 22)

A126. ISA 580²⁷ discusses the use of written representations. Depending on the nature, materiality and extent of estimation uncertainty, written representations about accounting estimates recognized or disclosed in the financial statements may include representations:

²⁵ ISA 705, *Modifications to the Opinion in the Independent Auditor's Report*

²⁶ ISA 700, *Forming an Opinion and Reporting on Financial Statements*

²⁷ ISA 580, *Written Representations*

- About the appropriateness of the measurement processes, including related assumptions and models, used by management in determining accounting estimates in the context of the applicable financial reporting framework, and the consistency in application of the processes.
- That the assumptions appropriately reflect management's intent and ability to carry out specific courses of action on behalf of the entity, where relevant to the accounting estimates and disclosures.
- That disclosures related to accounting estimates are complete and appropriate under the applicable financial reporting framework.
- That no subsequent event requires adjustment to the accounting estimates and disclosures included in the financial statements.

A127. For those accounting estimates not recognized or disclosed in the financial statements, written representations may also include representations about:

- The appropriateness of the basis used by management for determining that the recognition or disclosure criteria of the applicable financial reporting framework have not been met (see paragraph A114).
- The appropriateness of the basis used by management to overcome the presumption relating to the use of fair value set forth under the entity's applicable financial reporting framework, for those accounting estimates not measured or disclosed at fair value (see paragraph A115).

Documentation (Ref: Para. 23)

A128. Documentation of indicators of possible management bias identified during the audit assists the auditor in concluding whether the auditor's risk assessment and related responses remain appropriate, and in evaluating whether the financial statements as a whole are free from material misstatement. See paragraph A125 for examples of indicators of possible management bias.

Appendix

(Ref: Para. A1)

Fair Value Measurements and Disclosures under Different Financial Reporting Frameworks

The purpose of this appendix is only to provide a general discussion of fair value measurements and disclosures under different financial reporting frameworks, for background and context.

1. Different financial reporting frameworks require or permit a variety of fair value measurements and disclosures in financial statements. They also vary in the level of guidance that they provide on the basis for measuring assets and liabilities or the related disclosures. Some financial reporting frameworks give prescriptive guidance, others give general guidance, and some give no guidance at all. In addition, certain industry-specific measurement and disclosure practices for fair values also exist.
2. Definitions of fair value may differ among financial reporting frameworks, or for different assets, liabilities or disclosures within a particular framework. For example, International Accounting Standard (IAS) 39¹ defines fair value as “the amount for which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties in an arm’s length transaction.” The concept of fair value ordinarily assumes a current transaction, rather than settlement at some past or future date. Accordingly, the process of measuring fair value would be a search for the estimated price at which that transaction would occur. Additionally, different financial reporting frameworks may use such terms as “entity-specific value,” “value in use,” or similar terms, but may still fall within the concept of fair value in this ISA.
3. Financial reporting frameworks may treat changes in fair value measurements that occur over time in different ways. For example, a particular financial reporting framework may require that changes in fair value measurements of certain assets or liabilities be reflected directly in equity, while such changes might be reflected in income under another framework. In some frameworks, the determination of whether to use fair value accounting or how it is applied is influenced by management’s intent to carry out certain courses of action with respect to the specific asset or liability.
4. Different financial reporting frameworks may require certain specific fair value measurements and disclosures in financial statements and prescribe or permit them in varying degrees. The financial reporting frameworks may:

¹ IAS 39, *Financial Instruments: Recognition and Measurement*

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- Prescribe measurement, presentation and disclosure requirements for certain information included in the financial statements or for information disclosed in notes to financial statements or presented as supplementary information;
 - Permit certain measurements using fair values at the option of an entity or only when certain criteria have been met;
 - Prescribe a specific method for determining fair value, for example, through the use of an independent appraisal or specified ways of using discounted cash flows;
 - Permit a choice of method for determining fair value from among several alternative methods (the criteria for selection may or may not be provided by the financial reporting framework); or
 - Provide no guidance on the fair value measurements or disclosures of fair value other than their use being evident through custom or practice, for example, an industry practice.
5. Some financial reporting frameworks presume that fair value can be measured reliably for assets or liabilities as a prerequisite to either requiring or permitting fair value measurements or disclosures. In some cases, this presumption may be overcome when an asset or liability does not have a quoted market price in an active market and for which other methods of reasonably estimating fair value are clearly inappropriate or unworkable. Some financial reporting frameworks may specify a fair value hierarchy that distinguishes inputs for use in arriving at fair values ranging from those that involve clearly “observable inputs” based on quoted prices and active markets and those “unobservable inputs” that involve an entity’s own judgments about assumptions that marketplace participants would use.
6. Some financial reporting frameworks require certain specified adjustments or modifications to valuation information, or other considerations unique to a particular asset or liability. For example, accounting for investment properties may require adjustments to be made to an appraised market value, such as adjustments for estimated closing costs on sale, adjustments related to the property’s condition and location, and other matters. Similarly, if the market for a particular asset is not an active market, published price quotations may have to be adjusted or modified to arrive at a more suitable measure of fair value. For example, quoted market prices may not be indicative of fair value if there is infrequent activity in the market, the market is not well established, or small volumes of units are traded relative to the aggregate number of trading units in existence. Accordingly, such market prices may have to be adjusted or modified. Alternative sources of market information may be needed to make such adjustments or modifications. Further, in some cases, collateral assigned (for example, when collateral is assigned for certain types of investment in

debt) may need to be considered in determining the fair value or possible impairment of an asset or liability.

7. In most financial reporting frameworks, underlying the concept of fair value measurements is a presumption that the entity is a going concern without any intention or need to liquidate, curtail materially the scale of its operations, or undertake a transaction on adverse terms. Therefore, in this case, fair value would not be the amount that an entity would receive or pay in a forced transaction, involuntary liquidation, or distress sale. On the other hand, general economic conditions or economic conditions specific to certain industries may cause illiquidity in the marketplace and require fair values to be predicated upon depressed prices, potentially significantly depressed prices. An entity, however, may need to take its current economic or operating situation into account in determining the fair values of its assets and liabilities if prescribed or permitted to do so by its financial reporting framework and such framework may or may not specify how that is done. For example, management's plan to dispose of an asset on an accelerated basis to meet specific business objectives may be relevant to the determination of the fair value of that asset.

Prevalence of Fair Value Measurements

8. Measurements and disclosures based on fair value are becoming increasingly prevalent in financial reporting frameworks. Fair values may occur in, and affect the determination of, financial statements in a number of ways, including the measurement at fair value of the following:
 - Specific assets or liabilities, such as marketable securities or liabilities to settle an obligation under a financial instrument, routinely or periodically “marked-to-market.”
 - Specific components of equity, for example when accounting for the recognition, measurement and presentation of certain financial instruments with equity features, such as a bond convertible by the holder into common shares of the issuer.
 - Specific assets or liabilities acquired in a business combination. For example, the initial determination of goodwill arising on the purchase of an entity in a business combination usually is based on the fair value measurement of the identifiable assets and liabilities acquired and the fair value of the consideration given.
 - Specific assets or liabilities adjusted to fair value on a one-time basis. Some financial reporting frameworks may require the use of a fair value measurement to quantify an adjustment to an asset or a group of assets as part of an asset impairment determination, for example, a test of impairment of goodwill acquired in a business combination based on the fair value of a defined operating entity or reporting unit, the value of

which is then allocated among the entity's or unit's group of assets and liabilities in order to derive an implied goodwill for comparison to the recorded goodwill.

- Aggregations of assets and liabilities. In some circumstances, the measurement of a class or group of assets or liabilities calls for an aggregation of fair values of some of the individual assets or liabilities in such class or group. For example, under an entity's applicable financial reporting framework, the measurement of a diversified loan portfolio might be determined based on the fair value of some categories of loans comprising the portfolio.
- Information disclosed in notes to financial statements or presented as supplementary information, but not recognized in the financial statements.