# INTERNATIONAL STANDARD ON AUDITING 540

# AUDITING ACCOUNTING ESTIMATES AND RELATED DISCLOSURES

## Introduction

### Scope of this ISA

1. This International Standard on Auditing (ISA) deals with the auditor's responsibilities relating to accounting estimates and related disclosures in an audit of financial statements. Specifically, it includes requirements and guidance that expand on how ISA 315 (Revised),[1] ISA 330,[2] ISA 450,[3] ISA 500[4] and other relevant ISAs are to be applied in relation to accounting estimates. It also deals with the evaluation of misstatements of accounting estimates and related disclosures, and indicators of possible management bias.

### Nature of Accounting Estimates

2. Many financial statement items are susceptible to an inherent lack of precision in their measurement, which is referred to as estimation uncertainty. In the ISAs, such financial statement items are referred to as accounting estimates. (Ref: Para. A1)

2A. Accounting estimates vary widely in nature. The measurement objectives and other requirements of the applicable financial reporting framework, and the possible methods, data sources and types of assumptions that could be used to make an accounting estimate, may involve complexity and subjectivity. This may give rise to variation in the possible outcomes of the measurement process. (Ref: Para. A1A–A1H, Appendix 1, Appendix 2)

### Key Concepts of This ISA

3A. This ISA recognizes that there is a spectrum of inherent risk relating to accounting estimates. Depending on the nature of a particular accounting estimate, its susceptibility to misstatement may be affected, to a greater or lesser degree, by estimation uncertainty, subjectivity, complexity or other inherent risk factors and the interrelationship among them. The degree to which the susceptibility to misstatement is affected by inherent risk factors influences the auditor's separate assessment of inherent risk for an accounting estimate, including where that assessment falls along the spectrum of inherent risk. (Ref: Para. A1I–A1R, Appendix 2)

3B. The entity's system of internal control relating to accounting estimates is likely to be designed and implemented in a manner that responds to the susceptibility to misstatement. Accordingly, the auditor's consideration of control risk affects the assessment of the risks of material misstatement, and the auditor's planned reliance on relevant controls in testing the accounting estimate. (Ref: Para. A1M-A1N)

4. This ISA emphasizes that the auditor's further audit procedures (including, where appropriate, tests of relevant controls) need to be responsive to the assessment of risks of material

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

4 ISA 500, *Audit Evidence*

misstatement at the assertion level, considering whether the reasons for the assessment given to those risks relate to one or more inherent risk factors.

5. The exercise of professional skepticism by the auditor is particularly important to the auditor's work relating to accounting estimates because of the potential for management bias due to their subjective, potentially complex and uncertain nature.

6. This ISA requires the auditor to evaluate, based on the audit procedures performed and the audit evidence obtained, whether the accounting estimates and related disclosures are reasonable[5] in the context of the applicable financial reporting framework or are misstated. For purposes of this ISA, reasonable, in the context of the applicable financial reporting framework, means that all the relevant requirements of the applicable financial reporting framework have been applied appropriately, including those that address:

   - The making of the accounting estimate, including the selection of the method, assumptions and data from available alternatives in view of the nature of the accounting estimate and the facts and circumstances of the entity;
   - The selection of a management's point estimate that is representative of the range of reasonably possible outcomes of the measurement process; and
   - The disclosures about the accounting estimate, including disclosures about how the accounting estimate was developed and that explain the nature, extent, and sources of estimation uncertainty. (Ref: Para. A1S–A3)

**Effective Date**

7. This ISA is effective for audits of financial statements for periods ending on or after December 15, 2019.

## Objective

8. The objective of the auditor is to obtain sufficient appropriate audit evidence about whether accounting estimates and related disclosures in the financial statements are reasonable in the context of the applicable financial reporting framework.

## Definitions

9. For purposes of the ISAs, the following terms have the meanings attributed below:

   (a) Accounting estimate – A monetary amount the measurement of which, in accordance with the requirements of the applicable financial reporting framework, is subject to estimation uncertainty. (Ref: Para. A4)

   (b) Auditor's point estimate or auditor's range – An amount, or range of amounts, respectively, developed by the auditor in evaluating management's point estimate. (Ref: Para. A5)

   (c) Estimation uncertainty – Susceptibility to an inherent lack of precision in measurement. (Ref: Para. A6, Appendix 2)

   (d) Management bias – A lack of neutrality by management in the preparation of information. (Ref: Para. A7)

   (e) Management's point estimate – The amount selected by management for recognition or disclosure in the financial statements as an accounting estimate.

[5] See also ISA 700 (Revised), *Forming an Opinion and Reporting on Financial Statements*, paragraph 13(c).

(f) Outcome of an accounting estimate – The actual monetary amount that results from the resolution of the transaction(s), event(s) or condition(s) addressed by an accounting estimate. (Ref: Para. A8)

## Requirements

### Risk Assessment Procedures and Related Activities

10. When obtaining an understanding of the entity and its environment and the system of internal control, as required by ISA 315 (Revised),[6] in relation to the entity's accounting estimates, the auditor shall obtain an understanding, to the degree relevant in the circumstances, of the following matters: (Ref: Para. A8A–A10A)

*The Entity and Its Environment*

(a) [Previously 10(c)] The entity's transactions and other events and conditions that may give rise to the need for, or changes in, accounting estimates to be recognized or disclosed in the financial statements. (Ref: Para. A10B)

(b) The requirements of the applicable financial reporting framework, including the recognition criteria, measurement bases, and the related presentation and disclosure requirements. (Ref: Para. A11–A11A)

(c) Regulatory factors relevant to the entity's accounting estimates. (Ref: Para. A14)

(d) The nature of the accounting estimates and related disclosures that the auditor would expect to be included in the entity's financial statements, based on the auditor's understanding of the matters in 10(a)–(c) above. (Ref: Para. A16)

*The Entity's System of Internal Control Relevant to the Audit*

Control Environment

(e) The nature and extent of oversight and governance that the entity has in place over management's process for making accounting estimates. (Ref: Para. A17A–A17C).

(f) How management identifies the need for, and applies, specialized skills or knowledge related to accounting estimates, including with respect to the use of a management's expert. (Ref: Para. A17D)

Management's Risk Assessment Process

(h) How estimation uncertainty, complexity, subjectivity or other inherent risk factors are taken into account in making the accounting estimates, including how susceptibility to management bias is identified and addressed. (Ref: Para. A17E–A17G)

The Information System Relevant to Financial Reporting

(i) How management makes accounting estimates, including how management: (Ref: Para. A25–A25A)

 (i) Identifies transactions and other events and conditions that give rise to the need for, or changes in, accounting estimates to be recognized or disclosed in the financial statements and related disclosures;

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6 ISA 315 (Revised), paragraphs 3, 5–6, 9, 11–12, 15-17, and 20-21

(ii) Identifies the relevant methods, assumptions or sources of data, and the need for changes in them, that are appropriate in the context of the applicable financial reporting framework, including how management: (Ref: Para. A25B–A25D)

a. Selects or designs, and applies, the methods used, including the use of models; (Ref: Para. A26–A30)

b. Selects the assumptions to be used, including consideration of alternatives, and identifies significant assumptions; (Ref: Para. A33–A38); and

c. Selects the data to be used and identifies significant data; (Ref: Para. A41)

(iii) Understands the degree of estimation uncertainty associated with accounting estimates, including through considering the range of possible measurement outcomes; and

(iv) Selects a point estimate and related disclosures for inclusion in the financial statements. (Ref: Para. A57)

Control Activities Relevant to the Audit

(ia) Controls relating to management's process for making accounting estimates (see paragraph 10(i)). (Ref: Para. A58–A58D)

(j) How management reviews the outcome(s) of previous accounting estimates and responds to the results of that review.

11. The auditor shall review the outcome of previous accounting estimates, or, where applicable, their subsequent re-estimation to assist in identifying and assessing the risk of material misstatement in the current period. The auditor shall take into account the characteristics of the accounting estimates in determining the nature and extent of that review. The review is not intended to call into question judgments about previous period accounting estimates that were appropriate based on the information available at the time they were made. (Ref: Para. A61–A66)

12. The auditor shall determine whether specialized skills or knowledge are required to perform the risk assessment procedures, to identify and assess the risks of material misstatement, to design and perform audit procedures to respond to those risks, or to evaluate the audit evidence obtained. (Ref: Para. A67–A69)

**Identifying and Assessing the Risks of Material Misstatement**

13. In identifying and assessing the risks of material misstatement relating to an accounting estimate and related disclosures at the assertion level, as required by ISA 315 (Revised),[7] the auditor shall separately assess inherent risk and control risk, taking into account: (Ref: Para. A1R, A71–A75A)

(a) The degree to which the accounting estimate is subject to estimation uncertainty; and (Ref: Para. A75B–A75E)

(b) The degree to which complexity, subjectivity, or other inherent risk factors affect:

(i) The selection and application of the methods, assumptions and data in making the accounting estimate; or

(ii) The selection of management's point estimate and related disclosures for inclusion in the financial statements. (Ref: Para. A79–A92A)

[7] ISA 315 (Revised), paragraph 25 and 26

13A. The auditor shall determine whether any of the risks of material misstatement identified in accordance with paragraph 13 are, in the auditor's judgment, a significant risk.[8] If the auditor has determined that a significant risk exists, the auditor shall obtain an understanding of the entity's controls, including control activities, relevant to that risk.[9] (Ref: Para. A92C)

**Responses to the Assessed Risks of Material Misstatement**

15. As required by ISA 330,[10] the auditor's further audit procedures shall be responsive to the assessed risks of material misstatement[11] at the assertion level, considering the reasons for the assessment given to those risks, and shall include one or more of the following approaches:

(a) Determining whether events occurring up to the date of the auditor's report provide audit evidence regarding the accounting estimate (see paragraph 17);

(b) Testing how management made the accounting estimate (see paragraphs 17A-17F); or

(c) Developing an auditor's point estimate or range based on available audit evidence to evaluate management's point estimate and related disclosures about estimation uncertainty (see paragraphs 18-18C).

The auditor's further audit procedures shall take into account that the higher the assessed risk of material misstatement, the more persuasive the audit evidence needs to be.[12] The auditor shall design the further audit procedures to seek audit evidence from relevant sources, regardless of whether such audit evidence is evaluated to be corroborative or contradictory. (Ref: Para. A92D–A94)

16. As required by ISA 330,[13] the auditor shall design and perform tests of relevant controls to obtain sufficient appropriate audit evidence as to their operating effectiveness, if:

(a) The auditor's assessment of risks of material misstatement at the assertion level includes an expectation that the controls are operating effectively, or

(b) Substantive procedures alone cannot provide sufficient appropriate audit evidence about those risks.

The auditor's design and performance of tests of relevant controls shall be responsive to the reasons for the assessment given to the risks of material misstatement. The auditor also shall take into account that the greater the reliance the auditor places on the effectiveness of a control, the more persuasive the audit evidence needs to be.[14] (Ref: Para. A97A–A99)

16A. For a significant risk relating to an accounting estimate, the auditor's further audit procedures shall include tests of relevant controls in the current period if the auditor plans to rely on those controls, and tests of details when the approach consists only of substantive procedures.[15]

*Determining Whether Events Occurring up to the Date of the Auditor's Report Provide Audit Evidence Regarding the Accounting Estimate*

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[8] ISA 315 (Revised), paragraph 27

[9] ISA 315 (Revised), paragraph 29

[10] ISA 330, *The Auditor's Responses to Assessed Risks*, paragraphs 6-15 and 18

[11] ISA 330, paragraphs 6-7 and 21

[12] ISA 330, paragraph 7(b)

[13] ISA 330, paragraph 8

[14] ISA 330, paragraph 9

[15] ISA 330, paragraphs 15 and 21

17. When the auditor's further audit procedures include obtaining evidence about events occurring up to the date of the auditor's report, the auditor shall evaluate whether the audit evidence: (Ref: Para. A100A–A100F)

    (a) is sufficient and appropriate to address the risks of material misstatement at the assertion level relating to the accounting estimate; and

    (b) supports or contradicts relevant assertions relating to the accounting estimate;

    taking into account that changes in circumstances and other relevant conditions between the event and the measurement date may affect its relevance to the accounting estimate at the measurement date.

*Testing How Management Made the Accounting Estimate*

17A. When the auditor's further audit procedures include testing how management made the accounting estimate, the nature, timing, and extent of those further audit procedures shall be designed and performed, in accordance with paragraphs 17B to 17F, to obtain sufficient appropriate audit evidence about: (Ref: Para. A100G-A100H)

    (a) The selection and application of methods, assumptions and data used by management in making the accounting estimate, and

    (b) How management selected the point estimate and disclosures to be included in the financial statements.

Methods

17B. With respect to the methods used by management to make the accounting estimate, the auditor shall obtain sufficient appropriate audit evidence about:

    (a) Whether the method selected is appropriate in the context of the applicable financial reporting framework, and, if applicable, changes from prior periods are appropriate; (Ref: Para. A101–A107)

    (b) Whether the calculations are mathematically accurate and appropriately applied;

    (c) When management's application of the method involves complex modelling, whether judgments have been applied consistently and whether, when applicable: (Ref: Para. A108C–A108D)

        (i) The design of the model meets the measurement objective of the applicable financial reporting framework, is appropriate in the circumstances, and, if applicable, changes from the previous period's model are appropriate in the circumstances; and

        (ii) Adjustments to the output of the model are consistent with the measurement objective of the applicable financial reporting framework and are appropriate in the circumstances;

    (d) Whether the integrity of significant assumptions and significant data has been maintained in applying the method. Ref: Para. A108E)

Significant Assumptions

17C. With respect to the significant assumptions selected by management, the auditor shall obtain sufficient appropriate audit evidence about:

    (a) Whether the significant assumptions:

(i) Are appropriate in the context of the requirements of the applicable financial reporting framework, and, if applicable, changes from prior periods are appropriate; and

(ii) Give rise to indicators of possible management bias; (Ref: Para. A108F–A109)

(b) Whether significant assumptions are consistent with each other and with those used in other accounting estimates, or with related assumptions used in other areas of the entity's business activities;

(c) When relevant to the appropriateness of the significant assumptions or the appropriate application of the requirements of the applicable financial reporting framework, whether management has the intent to carry out specific courses of action and has the ability to do so. (Ref: Para. A111)

Significant Data

17D. With respect to the significant data used by management, the auditor shall obtain sufficient appropriate audit evidence about: (Ref: Para. A111A–A111C)

(a) Whether the significant data selected for use:

(i) Is appropriate in the context of the requirements of the applicable financial reporting framework, and, if applicable, changes from prior periods are appropriate;

(ii) Gives rise to indicators of possible management bias; and

(iii) Is relevant and reliable in the circumstances;

(b) Whether management has appropriately understood or interpreted significant data, including with respect to contractual terms.

Management's Selection of a Point Estimate and Related Disclosures

17E. The auditor shall obtain sufficient appropriate audit evidence about whether, in the context of the applicable financial reporting framework:

(a) Management has taken appropriate steps to understand and address the estimation uncertainty, and to develop a point estimate that meets the measurement objective; and (Ref: Para. A113)

(b) Management's point estimate and the disclosures in the financial statements that describe the estimation uncertainty are reasonable in the context of the applicable financial reporting framework. (Ref: Para. A116–A125)

17F. When, in the auditor's judgment based on the audit evidence obtained, management has not appropriately understood and addressed the estimation uncertainty, the auditor shall:

(a) Evaluate whether a deficiency in internal control exists and, if so, communicate in accordance with ISA 265.[i]

(b) Request management to consider alternative assumptions or perform sensitivity analyses, or provide additional disclosures relating to the estimation uncertainty, and evaluate management's response in accordance with paragraph 17E; and

(c) If, based on management's response to the auditor's request, the auditor determines that management still has not appropriately understood and addressed the estimation uncertainty, to the extent possible, develop an auditor's point estimate or range to enable the auditor to evaluate the reasonableness of management's point estimate and the related disclosures in the financial statements that describe the estimation uncertainty. (Ref: Para.

A126A–A126B)

*Developing an Auditor's Point Estimate or Range Based on Available Audit Evidence to Evaluate Management's Point Estimate and Related Disclosures About Estimation Uncertainty*

18. When the auditor's further audit procedures include developing a point estimate or range to evaluate management's point estimate, the auditor shall take into account the requirements of the applicable financial reporting framework and the auditor's understanding of the process used by management to make the accounting estimate. (Ref: Para. A126C–A134)

18A. If the auditor's point estimate or range is developed using the auditor's own methods, assumptions or data, the auditor shall:

(a) Obtain sufficient appropriate audit evidence to enable the auditor to evaluate whether the methods, assumptions or data used are appropriate in the context of the applicable financial reporting framework, including with respect to the matters in paragraphs 17B-17D, as applicable; and

(b) Consider the relevance and reliability of data obtained from an external information source.[16]

18B. When the auditor uses management's methods, assumptions or data in developing a point estimate or range to evaluate management's point estimate and related disclosures in the financial statements, the auditor shall obtain sufficient appropriate audit evidence in accordance with paragraphs 17B-17D to evaluate whether management's methods, assumptions or data are appropriate.

18C. If the auditor develops an auditor's range, the auditor shall determine that:

(a) All amounts included that range are supported by sufficient appropriate audit evidence, and have been evaluated by the auditor to be reasonable in the context of the measurement objectives and other requirements of the applicable financial reporting framework; and

(b) Management's point estimate and the disclosures in the financial statements that describe the estimation uncertainty are reasonable in the context of the applicable financial reporting framework.

*Other Considerations Relating to Audit Evidence*

18D. If information from an external information source or information prepared using the work of a management's expert is to be used as audit evidence, the auditor shall comply with the relevant requirements in ISA 500.[17] (Ref: Para. A134A–A134C)

**Disclosures Related to Accounting Estimates**

21. The auditor shall obtain sufficient appropriate audit evidence about whether the disclosures related to an accounting estimate are reasonable in the context of the requirements of the applicable financial reporting framework, including: (Ref: Para. A138–A138A)

(a) In the case of a fair presentation framework, whether management has included disclosures, beyond those specifically required by the framework, that are necessary to achieve the fair presentation of the financial statements as a whole; or

[16] ISA 500, paragraph 7

[17] ISA 500, *Audit Evidence*, paragraphs 7 and 8

(b) In the case of a compliance framework, whether the disclosures are those that are necessary for the financial statements not to be misleading.

**Indicators of Possible Management Bias**

21A. The auditor shall evaluate whether judgments and decisions made by management in making the accounting estimates included in the financial statements, even if they are individually reasonable, indicate possible management bias. When indicators of possible management bias are identified, the auditor shall evaluate the implications for the audit. (Ref: Para. A138B–A138E)

**Overall Evaluation Based on Audit Procedures Performed**

22. In applying ISA 330[18] to each accounting estimate, the auditor shall evaluate, based on the audit procedures performed and audit evidence obtained, whether: (Ref: Para A139)

(a) The assessments of the risks of material misstatement at the assertion level remain appropriate, including when indicators of possible management bias have been identified;

(b) Management's decisions relating to the recognition, measurement, presentation and disclosure of these accounting estimates in the financial statements are in accordance with the applicable financial reporting framework; and

(c) Sufficient appropriate audit evidence has been obtained.

22A. In making the evaluation required by paragraph 22(c), the auditor shall take into account all relevant audit evidence obtained, whether corroborative or contradictory.[19] If the auditor is unable to obtain sufficient appropriate audit evidence, the auditor shall evaluate the implications for the audit or the auditor's opinion on the financial statements in accordance with ISA 705 (Revised).[20]

23. Based on the auditor's evaluation in accordance with paragraph 22, the auditor shall evaluate whether the accounting estimates and related disclosures are reasonable in the context of the applicable financial reporting framework, or are misstated. ISA 450[21] provides guidance on distinguishing misstatements (whether factual, judgmental, or projected) for purposes of the auditor's evaluation of the effect of uncorrected misstatements on the financial statements. (Ref: Para. A1S–A3, A143–A146A)

**Written Representations**

25. The auditor shall obtain written representations from management and, when appropriate, those charged with governance that they believe the methods, significant assumptions and significant data used in making the accounting estimates and their related disclosures are appropriate to achieve recognition, measurement or disclosure that is in accordance with the applicable financial reporting framework. The auditor shall also consider the need to obtain representations about specific accounting estimates, including in relation to the methods, assumptions, or data used. (Ref: Para. A153)

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[18] ISA 330, paragraphs 25 and 26

[19] ISA 500, *Audit Evidence*, paragraph 11

[20] ISA 705 (Revised), *Modifications to the Opinion in the Independent Auditor's Report*

[21] ISA 450, *Evaluation of Misstatements Identified during the Audit*

### Communication with Those Charged With Governance or Management

26. In applying ISA 260 (Revised)[22] and ISA 265,[23] the auditor is required to communicate with those charged with governance or management about certain matters, including significant qualitative aspects of the entity's accounting practices and significant deficiencies in internal control, respectively. In doing so, the auditor shall consider the matters, if any, to communicate regarding accounting estimates, taking into account whether the reasons given to the risks of material misstatement relate to estimation uncertainty, or the effects of complexity, subjectivity or other inherent risk factors in making accounting estimates and related disclosures. (Ref: Para. A155–A157)

### Documentation

27. The audit documentation[24] shall include the basis for the significant professional judgments relating to the auditor's evaluation of the reasonableness of the accounting estimates and related disclosures in the context of the applicable financial reporting framework, including: (Ref: Para. A158–A158B)

    (a) Key elements of the auditor's understanding of the entity and its environment, and the system of internal control, in relation to the entity's accounting estimates, as required by paragraph 10;

    (b) The reasons given to the separate assessments of inherent risk and control risk for the risks of material misstatement relating to accounting estimates as required by paragraph 13;

    (c) For accounting estimates subject to a greater degree of estimation uncertainty, or affected to a greater degree by subjectivity, complexity, or other inherent risk factors, the auditor's rationale for selecting one or more of the approaches to testing the accounting estimate, as required by paragraph 15;

    (d) The auditor's response when management has not appropriately understood and addressed estimation uncertainty as required by paragraph 17F; and

    (e) Indicators of possible management bias related to accounting estimates, if any, and the auditor's evaluation thereof in forming the auditor's opinion as to whether the financial statements as a whole are free from material misstatement, whether due to fraud or error.

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## Application and Other Explanatory Material

### Nature of Accounting Estimates

*Examples of Accounting Estimates* (Ref: Para. 2)

A1. Examples of accounting estimates related to financial statement accounts, classes of transactions, or other transactions or events may include:

- Inventory obsolescence.
- Depreciation of property and equipment.

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[22] ISA 260 (Revised), *Communication with Those Charged with Governance*, paragraph 16(a)

[23] ISA 265, paragraph 9

[24] ISA 230, *Audit Documentation*, paragraphs 8-11, A6 and A10

- Valuation of financial instruments.
- Outcome of pending litigation.
- Provision for expected credit losses.
- Valuation of insurance contract liabilities.
- Warranty obligations.
- Employee pension liabilities.
- Share-based payments.
- Fair value of assets or liabilities acquired in a business combination, including the determination of goodwill and intangible assets.
- Impairment of long-lived assets or property or equipment held for disposal.
- Non-monetary exchanges of assets or liabilities between independent parties.
- Revenue recognized for long-term contracts.

*Methods* (Ref: Para. 2A)

A1A. [Previously A27] A method is a measurement technique used by management to make an accounting estimate in accordance with the required measurement basis (see paragraphs 2-8 of Appendix 1) and is applied using a computational tool or process. For example, one recognized method used to make accounting estimates relating to share-based payment transactions is to determine a theoretical option call price using the Black Scholes option pricing formula. This method may be applied by modelling the data and assumptions of that formula based on the terms of the transaction and market conditions relevant to the underlying share.

*Model*

A1B. [Previously A28 and A29] A model is a computational tool used to make an accounting estimate by applying assumptions and data, and a set of relationships between them, as specified by the method. A model, and the underlying method, is more likely to be complex when:

- Understanding and applying the method, including designing the model and selecting and using appropriate data and assumptions, requires specialized skills or knowledge;
- It is difficult to obtain data needed for use in the model because there are restrictions on available or observable data for determining the amount of a relevant valuation attribute (see paragraphs 4–6 of Appendix 1); or
- It is difficult to maintain the integrity (i.e., accuracy, consistency, or completeness) of the data and assumptions in using the model because there are multiple valuation attributes and multiple relationships between them.

*Assumptions and Data* (Ref: Para. 2A)

A1D. [Previously A32] Assumptions are used in making accounting estimates when there is a limitation in the availability of data needed to determine the amount of a relevant valuation attribute. Assumptions involve judgments based on the best available information about matters such as the choice of an interest rate, a discount rate, or judgments about future conditions or events. An assumption may be selected by management from a range of possible alternatives. Assumptions that may be made or identified by a management's expert become management's assumptions when used by management in making an accounting estimate.

A1E. [Previously A39] Data comprises factual data, which can be observed directly, and derived data. Derived data is obtained through applying to factual data analytical or interpretive techniques with a well-established theoretical basis and that do not involve judgment. The application of such techniques that are not well-established and involve the use of judgment gives rise to an assumption.

A1F. [Previously A39] Examples of data include:

- Prices agreed in market transactions (factual data);
- Operating times or quantities of output from a production machine (factual data);
- Historical prices or other terms included in contracts, such as a contracted interest rate, a payment schedule, and term included in a loan agreement (factual data); or
- Forward-looking data such as economic or earnings forecasts made publicly by an external information source (factual data), or a future interest rate determined using interpolation techniques from forward interest rates (derived data).

A1G. [Previously A40] Data can come from a wide range of sources. For example, data can be:

- Generated within the organization or externally;
- Obtained from a system that is either within or outside the general or subsidiary ledgers;
- Observable in contracts; or
- Observable in legislative or regulatory pronouncements.

A1H. [Previously A35] Data and assumptions used in making an accounting estimate are referred to as significant data or significant assumptions in this ISA if a change in the data or assumption would materially affect the measurement of the accounting estimate. [Relocated from A92 with minor revisions] A sensitivity analysis may be useful in demonstrating the degree to which the measurement varies based on one or more assumptions.

**Key Concepts of This ISA**

*Note to IAASB: Paragraphs A1I to A1O have been taken from a preliminary draft of the ISA 315 agenda material, with only a minor change in paragraph A1K to indicate that the reference to spectrum of inherent risk is "for purposes of this ISA" (i.e., ISA 540). Except for the broad footnote reference to ISA 200 in paragraph A1I, other footnote references to specific paragraphs in ISA 200 have been deleted here for ease of reading.*

*These paragraphs will be discussed in connection with Agenda Item 3-A, and changes resulting from that discussion will be reflected in these paragraphs to keep them consistent with the application material in the draft of ISA 315 (Revised).*

*Risks of Material Misstatement, Including the Spectrum of Inherent Risk* (Ref: Para. 3A)

A1I. ISA 200[25] deals with the overall objectives of the auditor, including to obtain sufficient appropriate audit evidence to reduce audit risk, which is a function of the risks of material misstatement and detection risk, to an acceptably low level. ISA 200 explains that the risks of material misstatement may exist at two levels: the overall financial statement level; and the assertion level for classes of transactions, account balances and disclosures. Risks of material misstatement at the overall financial statement level refer to risks of material misstatement that relate pervasively to the

[25] ISA 200, *Overall Objectives of the independent Auditor and the Conduct of an Audit in Accordance with International Standards on Auditing*

financial statements as a whole and potentially affect many assertions. Risks of material misstatement at the assertion level are assessed in order to determine the nature, timing and extent of further audit procedures necessary to obtain sufficient appropriate audit evidence.

A1J. ISA 200 explains that the risks of material misstatement at the assertion level consist of two components: inherent risk and control risk; and that they are the entity's risks and exist independently of the audit of the financial statements:

- Inherent risk is defined as the susceptibility of an assertion about a class of transaction, account balance or disclosure to a misstatement that could be material, either individually or when aggregated with other misstatements, before consideration of any related controls.
- Control risk is defined as the risk that a misstatement that could occur in an assertion about a class of transactions, account balance or disclosure and that could be material, either individually or when aggregated with other misstatements, will not be prevented, or detected and corrected, on a timely basis by the entity's [system of] internal control.

A1K. Inherent risk is influenced by factors that, alone or in combination with others, increase, to varying degrees, the susceptibility of an assertion about a class of transactions, account balance or disclosure to a misstatement that could be material. Depending on the extent to which the assertion is subject to, or affected by, such factors, the level of inherent risk varies, for different risks of material misstatement at the assertion level, on a continuous scale. For example, ISA 200 explains that inherent risk is higher for some assertions about particular classes of transactions, account balances and disclosures than for others. For purposes of this ISA, this continuous scale of inherent risk is referred to as the 'spectrum of inherent risk.'

A1L. Significant risks are risks of material misstatement for which the inherent risk, is at the highest end of that spectrum, relative to other risks of material misstatement in a particular audit.

A1M. ISA 200 also explains that an audit in accordance with the ISAs is conducted on the premise that management and, where appropriate, those charged with governance have acknowledged certain responsibilities that are fundamental to the conduct of the audit. This includes responsibility for such internal control as management and, where appropriate, those charged with governance, determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error. Internal control, no matter how well designed and operated, can only reduce, but not eliminate, risks of material misstatement in the financial statements, because of the inherent limitations of internal control.

A1N. In this ISA, the auditor obtains an understanding of the entity's system of internal control, through understanding each of the components of internal control, as part of the required basis for the auditor's identification and assessment of the risks of material misstatement in the financial statements (including control risk). The auditor's assessment of control risk at the assertion level involves taking into account whether the auditor's further audit procedures involve planned reliance on the operating effectiveness of controls, and the extent to which the controls address the assessed inherent risks at the assertion level.

A1O. This ISA requires a separate assessment of inherent risk and control risk. These risk assessments are combined to give rise to the auditor's assessment of risks of material misstatement at the assertion level. Accordingly, like inherent risk, the assessed risk of material misstatement at the assertion level varies, for different risks, on a continuous scale. The position of an individual risk on the spectrum of risks of material misstatement is lower than its position on the spectrum of inherent risk, when the auditor intends, or is required, to test the operating effectiveness of controls relevant to the audit related to that risk. However, the position of an individual risk on the spectrum of risks of material misstatement is the same as its position on the spectrum of inherent risk, when the auditor does not intend, and is not required, to test the operating effectiveness of any controls that are related to the risk.

*Inherent Risk Factors* (Ref: Para. 3A)

A1P. In identifying and assessing risks of material misstatement related to accounting estimates, certain classes of inherent characteristics of the measurement basis and of the nature, condition and circumstances of the item being estimated can be identified, which increase susceptibility of an assertion to misstatement that could be material. These are referred to in this ISA as inherent risk factors. Appendix 2 provides further explanation about the nature of the inherent risk factors of estimation uncertainty, subjectivity and complexity, and their inter-relationships, in the context of making accounting estimates and depicting them in the financial statements.

A1Q. [Previously A78] In addition to estimation uncertainty, complexity, and subjectivity, there may be other inherent risk factors that the auditor may consider in identifying and assessing the risks of material misstatement. These may include the extent to which the accounting estimate is subject to, or affected by:

- A change in the nature or circumstances of the relevant financial statement items, or requirements of the applicable financial reporting framework which may give rise to the need for changes in the method, assumptions or data used to make the accounting estimate; and
- The susceptibility to management bias in making the accounting estimate.

*Separate Assessment of Inherent and Control Risk* (Ref: Para. 3B, 13)

A1R. [Previously A95] Paragraph A42 of ISA 200 states that the ISAs do not ordinarily refer to inherent risk and control risk separately. However, this ISA requires a separate assessment of inherent risk and control risk to provide a basis for designing and performing further audit procedures to respond to the risks of material misstatement, including significant risks, at the assertion level for accounting estimates in accordance with ISA 330.[26] In other circumstances, the auditor may make separate or combined assessments of inherent and control risk depending on preferred audit techniques or methodologies and practical considerations.

*Concept of "Reasonable"* (Ref: Para. 6, 23)

A1Q. [Previously A123] Paragraph 6 of this ISA describes considerations that may be relevant to the auditor's evaluation of whether the accounting estimate, and related disclosures, are reasonable in the context of the applicable financial reporting framework. Matters that may be relevant for the auditor in obtaining sufficient appropriate audit evidence about the reasonableness of management's point estimate and related disclosures include:

- Alternative methods for making the accounting estimate and alternative sources of data were available, and the methods and data used were selected appropriately from those alternatives.
- Valuation attributes (see paragraph 4 of Appendix 1) used were appropriate and complete.
- The assumptions used were selected from a range of reasonably possible amounts and were supported by appropriate data that is relevant and reliable.
- The data used in the measurement process was appropriate, relevant and reliable, and the integrity of that data was maintained.

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[26] ISA 330, paragraph 7(b)

- The calculations applied in developing the outputs from the measurement process were mathematically accurate.
- Management's point estimate is appropriately representative of the range of reasonably possible measurement outcomes.
- The related disclosures appropriately describe the amount as an estimate and explain the nature and limitations of the estimation process, including the variability of the reasonably possible measurement outcomes.

A2. Other considerations that may be relevant to the auditor's consideration of whether the accounting estimates and related disclosures are reasonable in the context of the applicable financial reporting framework include whether:

- The data and assumptions used in making the accounting estimate are consistent with each other and with those used in other accounting estimates or areas of the entity's business activities; and
- The accounting estimate takes into account appropriate information as required by the applicable financial reporting framework.

A3. The term "applied appropriately" as used in paragraph 6 of this ISA means in a manner that not only complies with the requirements of the applicable financial reporting framework but, in doing so, reflects judgments that are consistent with the objective of the measurement basis in that framework.

**Definitions**

*Accounting Estimate* (Ref: Para. 9(a))

A4. Accounting estimates are monetary amounts that may be classes of transactions or account balances recognized or disclosed in the financial statements. Accounting estimates also include monetary amounts used in disclosures or used to make judgments about whether or not to recognize or disclose a class of transactions or account balance.

*Auditor's Point Estimate or Auditor's Range* (Ref: Para. 9(b))

A5. An auditor's point estimate or range may be used to evaluate an accounting estimate directly (for example, the expected credit losses for a particular loan portfolio or the fair value of different types of financial instruments), or indirectly (for example, an amount to be used as a significant assumption or significant data for an accounting estimate). A similar approach may be taken by the auditor in developing an amount or range of amounts in evaluating a non-monetary item of data or an assumption (for example, an estimated useful life of an asset).

*Estimation Uncertainty* (Ref: Para. 9(c))

A6. [Previously A91] Not all accounting estimates are subject to a high degree of estimation uncertainty. For example, some financial statement items may have an active and open market that provides readily available and reliable information on the prices at which actual exchanges occur. 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 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.

*Management Bias* (Ref: Para. 9(d))

A7. Financial reporting frameworks often call for neutrality, that is, freedom from bias. Estimation uncertainty gives rise to subjectivity in making an accounting estimate. The presence of subjectivity gives rise to the need for judgment by management and the susceptibility to unintentional or intentional management bias (for example, as a result of motivation to achieve a desired profit target or capital ratio). The susceptibility of an accounting estimate to management bias increases with the extent to which there is subjectivity in making the accounting estimate.

*Outcome of an Accounting Estimate* (Ref: Para. 9(f))

A8. Some accounting estimates, by their nature, do not have an outcome that is relevant for the auditor's work performed in accordance with this ISA. For example, an accounting estimate may be based on perceptions of market participants at a point in time. Accordingly, the price realized when an asset is sold or a liability is transferred may differ from the related accounting estimate made at the reporting date because, with the passage of time, the market participants' perceptions of value have changed.

**Risk Assessment Procedures and Related Activities**

*Obtaining an Understanding of the Entity and Its Environment* (Ref: Para. 10)

Scalability

A8A. [This section incorporates A23 and A60 and parts of A10 have been incorporated into A8A] The extent of the understanding required by paragraph 10 may depend, to a greater or lesser degree, on the nature of the entity and the accounting estimate. For example, the entity may have few transactions or other events and considerations that give rise to the need for accounting estimates, the applicable financial reporting requirements may be simple to apply, and there may be no relevant regulatory factors. Further, the accounting estimates may not require significant judgments and the processes for making the accounting estimates may be less complex. Accordingly, the accounting estimates may be less subject to estimation uncertainty, be affected to a lesser degree by subjectivity, complexity or other inherent risk factors, and there may be few relevant controls. In such circumstances, the auditor's understanding may be obtained primarily through inquiries of management with appropriate responsibilities for the financial statements or walk-throughs of relevant systems. Consequently, the extent of understanding required for the matters in paragraphs 10(e)–(k) is likely to be lower.

A8B. By contrast, the accounting estimates may require significant judgments by management, and the processes for making the accounting estimates may be complex and involve the use of complex models. In addition, the entity may have a more sophisticated information system, and more extensive controls over accounting estimates. In such circumstances, the accounting estimates may be more subject to estimation uncertainty, and be affected to a greater degree by subjectivity, complexity or other inherent risk factors. Consequently, the extent of understanding required for the matters in paragraphs 10(e)–(k) is likely to be higher.

A10. ISA 315 (Revised) notes how smaller entities differ with respect to accounting estimates, the following considerations may be relevant for entities with only simple businesses, which includes many smaller entities:

- Processes relevant to accounting estimates may be uncomplicated because the business activities are simple and the required estimates may have a lesser degree of estimation uncertainty.

- [Previously A60] Accounting estimates may be generated outside the general ledger, controls over their development may be limited, and an owner-manager may have significant influence over the determination. The owner-manager's role in making the accounting estimates may need to be taken into account by the auditor both when identifying the risks of material misstatement and when considering the risk of management bias.

Internal audit functions

A10A. [Previously A59] For entities with an internal audit function, its work may be particularly helpful to the auditor in obtaining an understanding of:

- The nature and extent of management's use of accounting estimates;
- The design and implementation of control activities that address the risks related to the data, assumptions and models used to make the accounting estimates;
- The systems that generate the data on which the accounting estimates are based; and
- How new risks relating to accounting estimates are identified, assessed and managed.

*The Entity and Its Environment*

The Entity's Transactions, Events and Other Conditions (Ref: Para. 10(a))

A10B. The auditor may become aware of transactions and other events and conditions from obtaining an understanding of the entity and its environment (including from the auditor's previous experience with the entity and from audit procedures performed in previous audits), the requirements of the applicable financial reporting framework, and regulatory factors.

The Requirements of the Applicable Financial Reporting Framework (Ref: Para. 10(b))

A11. Obtaining an understanding of the requirements of the applicable financial reporting framework provides the auditor with a basis for discussion with management and, where applicable, those charged with governance about how management has applied those requirements relevant to the accounting estimates, and about the auditor's determination of whether they have been applied appropriately. This understanding also may assist the auditor in communicating with those charged with governance when the auditor considers a significant accounting practice that is acceptable under the applicable financial reporting framework, not to be the most appropriate in the circumstances of the entity.[27]

A11A. In obtaining this understanding, the auditor may seek to understand whether the applicable financial reporting framework:

(a) Prescribes certain criteria for the recognition, or methods for the measurement of accounting estimates;

(b) Specifies certain criteria 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; and

(c) Specifies required or suggested disclosures, including disclosures concerning judgments, assumptions, or other sources of estimation uncertainty relating to accounting estimates.

[27] ISA 260 (Revised), paragraph 16(a)

Regulatory Factors (Ref: Para. 10(c))

A14. [Merged with A15] Obtaining an understanding of regulatory factors that are relevant to accounting estimates (for example, regulation established by banking and insurance regulators) may assist the auditor in determining whether the regulatory framework:

- Addresses conditions for the recognition, or methods for the measurement, of accounting estimates, or provides related guidance thereon;
- Specifies, or provides guidance about, disclosures in addition to the requirements of the applicable financial reporting framework;
- Provides an indication of areas for which there may be a potential for management bias to meet regulatory requirements; or
- Contains requirements for regulatory purposes that are not consistent with requirements of the applicable financial reporting framework, which may indicate potential risks of material misstatement.

The Nature of the Accounting Estimates and Related Disclosures That the Auditor Would Expect to be included in the Financial Statements (Ref: Para. 10(d))

A16. Obtaining an understanding of the nature of accounting estimates that the auditor expects to be included in the entity's financial statements, together with an understanding of the applicable financial reporting framework, assists the auditor in understanding the measurement basis of such accounting estimates and the nature and extent of disclosures that may be relevant. Such an understanding provides the auditor with a basis for discussion with management about how management has made the accounting estimates.

*Control Environment*

The Nature and Extent of Oversight and Governance (Ref: Para. 10(e)

A17A. [Previously A50] In applying ISA 315,[28] the culture of the organization may be important to the auditor's understanding of the nature and extent of oversight and governance, including, for example, whether:

- Management, with the oversight of those charged with governance, has created and maintained a culture of transparency and proper ethical behavior; and
- The strengths in the control environment elements collectively provide an appropriate foundation for the other components of internal control and whether those other components are not undermined by deficiencies in the control environment.

A17B. [Previously A52] The auditor may obtain an understanding of whether those charged with governance:

- Have the skills or knowledge to understand the characteristics of a particular method or model to make accounting estimates, or the risks related to the accounting estimate, for example, risks related to the method or information technology used in making the accounting estimates;
- Have the skills and knowledge to understand whether management made the accounting estimates in accordance with the applicable financial reporting framework;

- Are independent from management, have the information required to evaluate on a timely basis how management made the accounting estimates, and the authority to challenge management when those actions appear to be inadequate or inappropriate;
- Oversee management's process for making the accounting estimates, including the use of models; or
- Oversee the monitoring activities undertaken by management. This may include supervision and review of the accounting estimates designed to detect and correct any deficiencies in the design or operating effectiveness of controls over the accounting estimates.

A17C. [Previously A54] Obtaining an understanding of the oversight by those charged with governance may particularly be important for accounting estimates that:

- Require significant judgment by management;
- Have high estimation uncertainty;
- Are complex to make, for example, because of the extensive use of information technology, large volumes of data or the use of multiple data sources or assumptions with complex-interrelationships;
- Had, or ought to have had, a change in the method, assumptions or data compared to previous periods; or
- Involve significant data and significant assumptions.

Management's Application of Specialized Skills or Knowledge, Including the Use of Management's Experts (Ref: Para. 10(f))

A17D. The auditor may consider whether the following circumstances increase the likelihood that management may need to engage an expert:[29]

- The specialized nature of the matter requiring estimation, for example, the accounting estimate may involve measurement of mineral or hydrocarbon reserves in extractive industries or the evaluation of the likely outcome of applying complex contractual terms.
- The complex nature of the models required to apply the relevant requirements of the applicable financial reporting framework, as may be the case in certain measurements, such as level 3 fair values.[30]
- The unusual or infrequent nature of the condition, transaction or event requiring an accounting estimate.

A failure by management to apply the required specialized skills or knowledge, including engaging an expert when management does not otherwise have access to an individual with such skills and knowledge, increases control risk.

[29] ISA 500, paragraph 8

[30] See, for example, International Financial Reporting Standard (IFRS) 13, *Fair Value Measurement*.

*Management's Risk Assessment Process*

Inherent Risk Factors (Ref: Para. 10(h))

A17E. [Previously A55] Understanding how management determines the risks to be managed arising from changes in the following may assist in understanding how management takes inherent risk factors into account:

- The requirements of the applicable financial reporting framework related to the accounting estimates;
- The availability or nature of data sources that are relevant to making the accounting estimates or that may affect the reliability of the data used;
- The entity's information systems or IT environment; and
- Key personnel.

A17F. [Previously A46]. Matters that may be appropriate for the auditor to consider in obtaining an understanding of whether, and if so, how management has taken into account estimation uncertainty include, for example:

- Whether, and if so, how management identified alternative methods, significant assumptions or sources of significant data that are appropriate in the context of the applicable financial reporting framework.
- Whether, and if so, how management considered alternative outcomes by, for example, performing a sensitivity analysis to determine the effect of changes in the data or assumptions on the accounting estimate.
- How management selected its point estimate.

A17G. [Previously A45] Matters that the auditor may consider in obtaining an understanding of how management identifies and addresses the susceptibility to management bias in making accounting estimates includes whether, and if so how, management:

- Identifies and pays particular attention to accounting estimates that involve greater levels of subjectivity in related judgments.
- Monitors key performance indicators that may indicate unexpected or inconsistent performance compared with historical or budgeted performance or with other known factors.
- Identifies financial or other incentives that may be a motivation for bias.
- Monitors changes in the methods, or in sources of significant data and significant assumptions, used in making accounting estimates.
- Establishes appropriate oversight and review of models used in making accounting estimates.
- Requires documentation of the rationale for, or an independent review of, significant judgments made in making accounting estimates.

*The Information System Relevant to Financial Reporting*

How Management Makes Accounting Estimates (Ref: Para. 10(i))

A25. Matters that the auditor may consider in obtaining an understanding of how management makes the accounting estimates include, for example:

- How management determines 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, presented, and disclosed in the financial statements, in accordance with the applicable financial reporting framework.
- How management establishes financial reporting processes for making accounting estimates for each account balance, class of transaction or disclosure, including adequate internal control.
- Whether the accounting estimates arise from the recording of routine and recurring transactions or whether they arise from non-recurring or unusual transactions.
- How management selects appropriate accounting policies and prescribing estimation processes, including appropriate estimation or valuation methods. This may include whether and, if so, how management has used recognized measurement techniques for making particular accounting estimates.
- How management develops or identifies relevant data and assumptions that are used in making accounting estimates. This may include 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.
- How management periodically reviews the circumstances that give rise to the accounting estimates and re-estimating as necessary.

A25A. [Previously A22] 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 process.[31]

Management's Identification of the Relevant Methods, Assumptions and Sources of Data (Ref: Para. 10(i)(ii)

A25B. [Previously A21] Inquiries of management about changes in circumstances may include, for example, whether:

- The entity has engaged in new types of transactions.
- Terms of transactions have changed.
- Accounting policies relating to accounting estimates have changed, as a result of changes to the requirements of the applicable financial reporting framework.
- 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.

A25C. If management has changed the method for making an accounting estimate, considerations include whether the new method is, for example, more appropriate, is itself a response to changes in the environment or circumstances affecting the entity, or to changes in the requirements of the

[31] ISA 315, paragraph 17

applicable financial reporting framework or regulatory environment, or whether management has another valid reason.

A25D. [Previously A47] If management has not changed the method for making an accounting estimate, considerations include that the continued use of the previous methods, assumptions and data is appropriate in view of the current environment or circumstances.

Methods (Ref: Para. 10(i)(ii)(a))

A26. The applicable financial reporting framework may prescribe the method to be used in making an accounting estimate. In many cases, however, the applicable financial reporting framework does not prescribe a single method, or the required measurement basis prescribes, or allows, the use of alternative methods.

Models

A30. Management may design and implement specific controls around models used for making accounting estimates, whether management's own model or an external model. When the model itself has an increased level of complexity, such as an expected credit loss model or the use of a fair value using level 3 inputs, controls that specifically address the effects of complexity are more likely to be relevant to the audit. When controls that address complexity around models are present, controls over data integrity are more likely to be relevant to the entity. Factors that may be appropriate for the auditor to consider in obtaining an understanding of the model and of related control activities include the following:

- How management determines the relevance and accuracy of the model;
- The validation or back testing of the model, including whether the model is validated prior to use and revalidated at regular intervals to determine whether it remains suitable for its intended use. The entity's validation of the model may include evaluation of:
  - The model's theoretical soundness;
  - The model's mathematical integrity; and
  - The accuracy and completeness of the data and the appropriateness of data and assumptions used in the model.
- How the model is appropriately changed or adjusted on a timely basis for changes in market or other conditions and whether there are appropriate change control policies over the model;
- Whether adjustments, also referred to as overlays in certain industries, are made to the output of the model and whether such adjustments are appropriate under the circumstances and in accordance with the requirements of the applicable financial reporting framework. When the adjustments are not appropriate in the context of the requirements of the applicable financial reporting framework, such adjustments may be indicators of possible management bias; and
- Whether the model is adequately documented, including its intended applications, limitations, key parameters, required data and assumptions, the results of any validation performed on it and the nature of, and basis for, any adjustments made to its output.

Assumptions (Ref: Para. 10(i)(ii)(b))

A33. Matters that the auditor may consider in obtaining an understanding of how management selected the assumptions used in making the accounting estimates include, for example:

- The basis for management's selection and the documentation supporting the assumption. The applicable financial reporting framework may provide criteria or guidance to be used in the selection of an assumption.
- How management assesses whether the assumptions are relevant and complete.
- When applicable, how management determines that the assumptions are consistent with each other, with those used in other accounting estimates or areas of the entity's business activities, or with other matters:
    - o Within the control of management (for example, assumptions about the maintenance programs that may affect the estimation of an asset's useful life), and whether they are consistent with the entity's business plans and the external environment; and
    - o Outside the control of management (for example, assumptions about interest rates, mortality rates, potential judicial or regulatory actions, or the variability and the timing of future cash flows).
- The requirements of the applicable financial reporting framework related to the disclosure of assumptions.

A34. With respect to fair value accounting estimates, assumptions vary in terms of the sources of the data and the basis for the judgments to support them, 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.

(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 data available in the circumstances.

In practice, however, the distinction between (a) and (b) may not always be apparent and distinguishing between them depends on understanding the sources of data and the basis for the judgments that support the assumption. Further, it may be necessary for management to select from a number of different assumptions used by different marketplace participants.

Inactive or illiquid markets

A38. When markets are inactive or illiquid (also see paragraphs 23A-23B of Appendix 1), the auditor's understanding of how management selects assumptions may include understanding whether management has:

- Implemented appropriate policies for adapting the application of the method in such circumstances. Such adaptation may include making model adjustments or developing new models that are appropriate in the circumstances;
- Resources with the necessary skills or knowledge to adapt or develop a model, if necessary on an urgent basis, including selecting the valuation technique that is appropriate in such circumstances;
- The resources to determine the range of outcomes, given the uncertainties involved, for example by performing a sensitivity analysis;
- The means to assess how, when applicable, the deterioration in market conditions has affected the entity's operations, environment and relevant business risks and the implications for the entity's accounting estimates, in such circumstances; and

- An appropriate understanding of how the price data, and the relevance thereof, from particular external information sources may vary in such circumstances.

Data (Ref: Para. 10(i)(ii)(c))

A41. Matters that the auditor may consider in obtaining an understanding of the data on which the accounting estimates are based include:

- The nature and source of the data, including information obtained from an external information source.
- How management evaluates whether the data is appropriate.
- The accuracy and completeness of the data.
- The consistency of the data used with data used in previous periods.
- The complexity of the information technology systems used to obtain and process the data, including when this involves handling large volumes of data.
- How the data is obtained, transmitted and processed and how its integrity is maintained.

Selection of a point estimate and related disclosures for inclusion in the financial statements (Ref: Para. 10(i)(iv))

A57. The auditor may obtain an understanding of whether and how information systems provide information used in quantitative and qualitative disclosures in the financial statements. This may include a system developed and maintained by the entity primarily for internal reporting, but which also captures, processes and generates data that may be included in disclosures relating to accounting estimates.

*Control Activities Relevant to the Audit*

Controls Relating to Management's Process for Making Accounting Estimates (Ref: Para 10(ia))

A58. As part of obtaining an understanding of the control activities relevant to accounting estimates, the auditor may consider:

- How management determines the appropriateness of the data used to develop the accounting estimates, including when management uses an external information source or data from outside the general and subsidiary ledgers.
- The review and approval of accounting estimates, including the assumptions or data used in their development, by appropriate levels of management and, where appropriate, those charged with governance.
- The segregation of duties between those responsible for making the accounting estimates and those committing the entity to the related transactions, 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 consist of an independent function responsible for estimation and validation of fair value pricing of the entity's financial products staffed by individuals whose remuneration is not tied to such products.
- The level of precision of the control activities. Generally, controls addressing the relevant inherent risk factors of subjectivity and estimation uncertainty may have varying levels of precision and may be less precise than controls addressing complexity. If the complexity

relates to application of a systematic method or the integrity of significant data, the controls may have a higher level of precision.

A58A. Circumstances in which it will likely be more important for the auditor to understand the design and implementation of relevant controls include when there is an increased need for the application of specialized skills or knowledge, and management makes extensive use of information technology in making the estimates.

A58B. When management makes extensive use of information technology in making an accounting estimate, controls relevant to the audit are likely to include general IT controls and application controls. Such controls may address risks related to:

- The information systems have the capability and are appropriately configured to process large volumes of data;
- Complex calculations in applying a method. When diverse systems are required to process complex transactions, regular reconciliations between the systems are made, in particular when the systems do not have automated interfaces or may be subject to manual intervention;
- The design and calibration of models is periodically evaluated;
- The complete and accurate extraction of data regarding accounting estimates from the entity's records or from external information sources;
- Data, including the complete and accurate flow of data through the entity's information systems, the appropriateness of any modification to the data used in making accounting estimates, the maintenance of the integrity and security of the data. When using external information sources, risks related to processing or recording the data;
- Management has controls around access, change and maintenance of individual models to maintain a strong audit trail of the accredited versions of models and to prevent unauthorized access or amendments to those models; and
- There are appropriate controls over the transfer of information relating to accounting estimates into the general ledger, including appropriate controls over related journal entries.

A58C. [Previously A51] In some industries, such as the banking or insurance industry, the term governance may be used to describe activities within the control environment, monitoring controls, and other components of the system of internal control, as described in ISA 315 (Revised).[32]

A58D. The auditor's risk assessment procedures may be directed at understanding management's review or risk assessment processes related to accounting estimates. How management addresses the completeness of accounting estimates, particularly estimates related to liabilities, is often an important consideration of the auditor.

*Reviewing the Outcome or Re-Estimation of Previous Period Accounting Estimates* (Ref: Para. 11)

A61. A review of the outcome or re-estimation of previous accounting estimates (retrospective review) assists in identifying and assessing the risks of material misstatement, when previous accounting estimates have an outcome through transfer or realization of the asset or liability in the current

32 ISA 315 (Revised) paragraph A77

period, or are re-estimated for the purpose of the current period. Through performing a retrospective review, the auditor may obtain:

- Information regarding the effectiveness of management's previous estimation process, from which the auditor can obtain audit evidence about the likely effectiveness of management's current process
- Audit evidence of matters, such as the reasons for changes, that may be required to be disclosed in the financial statements.
- Information regarding the complexity and estimation uncertainty pertaining to the accounting estimates.
- Information regarding the susceptibility of accounting estimates to, or that may be an indicator 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.

A62. A retrospective review may be performed for accounting estimates made for the prior period's financial statements, or may be performed over several periods or a shorter period (such as half-yearly or quarterly), as a review may provide audit evidence about management's current effectiveness in making accounting estimates. In some cases, a retrospective review over several periods may be appropriate when the outcome of an accounting estimate is resolved over a longer period.

A63. A retrospective review of management judgments and assumptions related to significant accounting estimates is required by ISA 240.[33] As a practical matter, the auditor's review of previous 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.

A64. The auditor may judge that a more detailed retrospective review is required for those previous accounting estimates that the auditor has assessed as higher on the spectrum of inherent risk. As part of the detailed retrospective review, the auditor may pay particular attention, when possible, to the effect of data and significant assumptions used in making the previous estimates. 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.

A65. The measurement objective for fair value accounting estimates and other accounting estimates based on current conditions at the measurement date 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 that affected the outcome of a previous period's fair value accounting estimates may be unlikely to provide relevant audit evidence. In this case, audit evidence may be obtained from understanding the outcomes of assumptions (such as a cash flow projections) and understanding the effectiveness of management's prior estimation process from which the auditor can judge the likely effectiveness of management's current process.

A66. A difference between the outcome of an accounting estimate and the amount recognized in the previous period's financial statements does not necessarily represent a misstatement of the previous period's financial statements. However, the auditor may consider whether such a

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

difference may represent a misstatement if, for example, the difference arises from information that was available to management when the previous 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 in each case.

*Specialized Skills or Knowledge* (Ref: Para. 12)

A67. Matters that may affect the auditor's determination of whether specialized skills or knowledge is required include, for example:[34,35]

- The nature of the accounting estimates for a particular business or industry (for example, mineral deposits, agricultural assets, complex financial instruments, insurance contract liabilities).
- The degree of estimation uncertainty.
- The complexity of the method or model used.
- 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 or areas where there are inconsistencies in how accounting estimates are made.
- The procedures the auditor intends to undertake in responding to assessed risks of material misstatement.
- The need for judgment about matters not specified by the applicable financial reporting framework.
- The degree of judgment needed to select data and assumptions.
- The complexity and extent of the entity's use of information technology in making accounting estimates.

A67A. The auditor may not possess the specialized skills or knowledge necessary when the matter involved is in a field other than accounting or auditing (for example, valuation skills) and may need to use an auditor's expert.[36]

A69. Many accounting estimates do not require the application of specialized skills or knowledge. For example, for most audits it is unlikely that specialized skills or knowledge would be needed for a simple inventory obsolescence calculation. However, for expected credit losses of an internationally active banking institution or the insurance contract liability for an insurance entity, the auditor is likely to conclude that it is necessary to apply specialized skills or knowledge.

**Identifying and Assessing the Risks of Material Misstatement** (Ref: Para. 13)

A71. Paragraph 13 requires the auditor to take into account the degree to which the accounting estimate is subject to, or affected by estimation uncertainty, complexity, subjectivity, and other relevant inherent risk factors. Taking into account the degree to which these inherent risk factors apply to a particular accounting estimate recognizes that a spectrum of inherent risk exists (see

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

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

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

paragraphs A1J and A1K). The interrelationships between the inherent risk factors are further explained in Appendix 2. [Previously A71C] The auditor's consideration of the inherent risk factors also is important in determining the reasons for the assessment given to the risks of material misstatement at the assertion level, and that the auditor's further audit procedures in accordance with paragraph 15 are responsive to those reasons.

A71A. The relevance and significance of inherent risk factors may vary from one estimate to another, and the inherent risk factors may be of lesser importance (either individually or in combination) when dealing with simple accounting estimates. For example, for simple accounting estimates with less complexity, subjectivity, or estimation uncertainty, the auditor may identify fewer risks or assess the risks at the lower end of the risk spectrum.

A71B Conversely, some accounting estimates may involve more complexity or subjectivity, and be subject to a higher degree of estimation uncertainty. For these accounting estimates, the auditor's consideration of the effects of the relevant inherent risk factors may directly affect the number and nature of identified risks of material misstatement, the assessment of such risks (which may be at the higher end of the risk spectrum), and ultimately the persuasiveness of the audit evidence needed in responding to the assessed risks.

A74. The reasons for the auditor's assessment of the risks of material misstatement may result from one or more of the inherent risk factors of estimation uncertainty, complexity, subjectivity or other relevant inherent risk factors. For example:

(a) Accounting estimates of expected credit losses are likely to be complex because the expected credit losses cannot be directly observed and may require the use of a complex model. The model may use a complex set of historical data and assumptions about future developments in a variety of entity specific scenarios that may be difficult to predict. Accounting estimates for expected credit losses are also likely to involve high estimation uncertainty and significant subjectivity in making judgments about future events or conditions. Similar considerations apply to insurance contract liabilities.

(b) An accounting estimate for an obsolescence provision for an entity with a wide range of different inventory types may require complex systems and processes, but may involve little subjectivity and the degree of estimation uncertainty may be low, depending on the nature of the inventory.

(c) Other accounting estimates may not be complex to make but may have high estimation uncertainty and require significant judgment, for example, an accounting estimate that requires a single critical judgment about a liability, the amount of which is contingent on the outcome of the litigation.

A75. The auditor's assessment of the risks of material misstatement at the assertion level may be informed by events occurring after the date of the financial statements. For example, the outcome of an accounting estimate may become known during the audit. In such cases, the auditor may assess or revise,[37] when relevant, the risks of material misstatement, regardless of the degree of estimation uncertainty and the degree to which the accounting estimate was subject to, or affected by, complexity, subjectivity or other relevant inherent risk factors. This also may influence the auditor's selection of the approach to testing the accounting estimate in accordance with paragraph 15. For example, for a simple bonus accrual that is based on a straightforward percentage of compensation for selected employees, the auditor may conclude that there is relatively little complexity or subjectivity in making the estimate, and therefore may assess the

[37] ISA 315 (Revised), paragraph 31

risk of material misstatement at the lower end of the risk spectrum. The payment of the bonuses subsequent to period end may provide sufficient appropriate audit evidence regarding the assessed risk of material misstatement.

A75A. An important consideration for the auditor in the assessment of the risks of material misstatement at the assertion level is the precision of controls relied upon to determine the control risk, as the precision of the controls relied upon affects the substantive procedures to be performed. For example, when the precision of the controls relied upon is high, the auditor may perform fewer substantive procedures.

*The Degree of Estimation Uncertainty* (Ref: Para. 13(a))

A75B. In taking into account the degree to which the accounting estimate is subject to estimation uncertainty, it may be important for the auditor to consider::

- Whether the applicable financial reporting framework requires:
  - o The use of a method to make the accounting estimates that inherently has a high level of estimation uncertainty. For example, the financial reporting framework may require the use of a fair value using level 3 inputs.
  - o The use of assumptions that inherently have a high level of estimation uncertainty, such as assumptions with a long forecast period, assumptions that are based on data that is unobservable and are therefore difficult for management to develop or the use of the various assumptions that are interrelated.
  - o Disclosures about estimation uncertainty. There may be a risk of material misstatement related to the failure to make a disclosure related to estimation uncertainty.
- The business environment. An entity may be active in a market that experiences turmoil or possible disruption (for example, from major currency movements or inactive markets) and the accounting estimate may therefore be dependent on data that is not readily observable.
- Whether it is possible (or practical, insofar as permitted by the applicable financial reporting framework) for management:
  - o To make a precise and reliable prediction about the future realization of a past transaction (for example, the amount that will be paid under a contingent contractual term), or about the incidence and impact of future events or conditions (for example, the amount of a future credit loss or the amount at which an insurance claim will be settled and the timing of its settlement); or
  - o To obtain precise and complete information about a present condition (for example, information about valuation attributes that would reflect the perspective of market participants at the date of the financial statements, to develop a fair value estimate).

A75D. A seemingly immaterial accounting estimate may have the potential to result in a material misstatement due to the estimation uncertainty associated with the accounting estimate; that is, the size of the amount recognized or disclosed in the financial statements for an accounting estimate is not, in itself, an indicator of its estimation uncertainty.

A75E. 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, there may be risks of material misstatement that relate not only to whether an accounting estimate should be recognized, or whether it should be measured at fair value, but also to the reasonableness of the disclosures. With respect to such accounting estimates, the applicable financial reporting framework may require disclosure of the accounting estimates and the estimation uncertainty associated with them (see paragraphs A124–A125, A138–A138A).

*The Effects of Complexity and Subjectivity* (Ref: Para. 13(b))

The Degree to Which Complexity Affects the Method Used in Making the Accounting Estimate

A79. In taking into account the degree to which complexity affects the method used in making the accounting estimate, it may be important for the auditor to consider:

- The need for specialized skills or knowledge by management. Designing and operating complex models often involves specialized skills or knowledge, including in relation to valuation attributes arising from the nature and circumstances of the underlying financial statement items and in the use of information technology. In relation to developing a model, there may be a greater susceptibility to a risk of material misstatement relating to the use of models. This may be the case when management has developed a model internally and has relatively little experience in doing so, or uses a model that applies a method that is not established or commonly used in a particular industry or environment.
- The nature of the measurement basis in the applicable financial reporting framework. The nature of the measurement basis in the applicable financial reporting framework may result in the need for a complex method that requires multiple sources of historical and forward-looking data or assumptions, with multiple inter-relationships between them. For example, an expected credit loss may require expectations of future credit repayments and other cash flows, based on consideration of historical experience data and the application of forward looking assumptions. Similarly, the valuation of an insurance contract liability may require expectations about future insurance contract payments to be projected based on historical experience and current and assumed future trends.

The Degree to Which Complexity Affects the Data on Which the Accounting Estimate Is Based

A82. In taking into account the degree to which complexity affects the data on which the accounting estimate is based, it may be important for the auditor to consider:

- The reliability of the data source. Data from certain sources may be more reliable than from others. For example, data obtained from internal systems outside the general and subsidiary ledgers may be more susceptible to misstatements because in some entities it may be difficult to determine whether there were appropriate controls and governance over such data. Also, for confidentiality or proprietary reasons, some external information sources will not (or not fully) disclose information that may be relevant in considering the reliability of the data they provide, such as the sources of the underlying data they used or how it was accumulated and processed (including any controls over the process).
- The relevance of the data source. Some data sources may be less relevant given the measurement objective as described by the financial reporting framework. For example, data from an external information source may be less relevant in making a fair value estimate if it is not based on observable market transactions.
- The integrity of the information systems. Data that is used to make the accounting estimates may be processed by one or more information systems. In order to maintain the integrity of the information systems, effective general IT controls and controls over the flow of data through the systems are necessary, particularly when there is a complex

organizational structure or a lack of integration between systems in different parts of the entity. In such circumstances, the auditor will likely obtain an understanding of the controls and may also determine that it is necessary to test their operating effectiveness. The integrity of the information systems is particularly important when there is a high volume of data and multiple sources of the data.

The Degree to Which Subjectivity Affects the Selection of Methods, Assumptions or Data

A83. In taking into account the degree to which subjectivity affects the selection of methods, assumptions or data, it may be important for the auditor to consider:

- Management's experience and competence. A lack of experience or competence by management, including a lack of availability to management of necessary skills or knowledge. These factors may result in risks related to the selection of inappropriate methods, assumptions and data. For example, the determination of cash inflows or outflows arising from commercial supplier or customer rebates may depend on very complex contractual terms that require specific expertise or competence to understand or interpret. When management lacks the competence or experience in a certain area and does not use a management's expert, there may be a risk that:
  - The method selected may not be appropriate or comply with the applicable financial reporting framework.
  - The assumptions used are not appropriate in the context of the measurement objectives and other requirements of the applicable financial reporting framework.
  - Management may select a data source that is not relevant and reliable.
- The degree to which the applicable financial reporting framework does not specify the valuation approaches, concepts, techniques and factors to use in the estimation method.
- The uncertainty regarding the amount or timing, including the length of the forecast period. The amount and timing is a source of inherent estimation uncertainty, and gives rise to the need for management judgment in selecting a point estimate, which in turn creates an opportunity for management bias. For example, an accounting estimate that incorporates forward looking assumptions may have a high degree of subjectivity which may be susceptible to management bias.

A85. When accounting estimates are subject to a high degree of subjectivity, the accounting estimate is likely to be more susceptible to the potential for management bias. For example, subjectivity may result in a wide range of possible measurement outcomes of the accounting estimate. Management may select a point estimate from that range that is inappropriate in the circumstances, or that is inappropriately influenced by unintentional or intentional management bias, and that is therefore misstated. 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.

*Other Relevant Inherent Risk Factors*

A92A.[Previously A75F] The degree of estimation uncertainty associated with an accounting estimate influences the susceptibility of the accounting estimate to management bias. When the reasons for the assessment given to the risk of material misstatement include a high degree of estimation uncertainty, the auditor's application of professional skepticism is particularly important.

*Significant Risks* (Ref: Para. 13A)

A92C. In some cases, the estimation uncertainty relating to an accounting estimate may cast significant doubt about the entity's ability to continue as a going concern. ISA 570 (Revised)[38] establishes requirements and provides guidance in such circumstances.

**Responses to the Assessed Risks of Material Misstatement** (Ref: Para. 15)

A92D. In designing and performing further audit procedures the auditor may use any of the three testing approaches (individually or in combination) listed in paragraph 15. For example, when several assumptions are used to make an accounting estimate, the auditor may decide to use a different testing approach for each assumption tested.

*Seeking Audit Evidence from Relevant Sources, Whether Corroborative or Contradictory*

A92E. Seeking audit evidence from relevant sources, regardless of whether such audit evidence is evaluated to be corroborative or contradictory, provides the auditor with a basis for considering the persuasiveness of the audit evidence. The auditor is not expected to conduct an exhaustive search for audit evidence from all relevant sources. However, the audit evidence obtained needs to be more persuasive the higher the risk of material misstatement and it may therefore be more appropriate for the auditor to obtain audit evidence from a number of independent sources when inherent risk relating to an accounting estimate is higher due to the effects of inherent risk factors. As inherent risk increases it is likely to be more important for the auditor to consider whether there may be other relevant sources of audit evidence.

*Scalability*

A94. The nature, timing and extent of the auditor's further audit procedures may be affected by, for example:

- The assessed risk of material misstatement, which affects the persuasiveness of the audit evidence needed and may influence the approach the auditor selects to audit an accounting estimate. For example, the assessed risk of material misstatement may be lower for a straightforward accrual for bonuses that are paid to employees shortly after period end. In this situation, it may be most practical for the auditor to obtain sufficient appropriate audit evidence, rather than through other testing approaches.
- The reasons for the assessed risk of material misstatement. For example, when the auditor identifies a risk of material misstatement relating to data used in making the accounting estimate and the auditor has decided to test how management makes the accounting estimate, the auditor's further audit procedures may target the data used to make the accounting estimate.

Appendix 4 provides examples of how the auditor's response to the assessed risk of material misstatement can be applied for simpler accounting estimates.

*When the Auditor Intends to Rely on Relevant Controls (Ref: Para: 16)*

A97A. In some cases, it will likely be more important for the auditor to test the operating effectiveness of relevant controls in addressing the assessed risks of material misstatements. This may be the case when there is an increased need for the application of specialized skills or knowledge, or management may make extensive use of information technology in making the estimates.

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[38] ISA 570, (Revised), *Going Concern*

A97B. In determining the nature, timing and extent of testing of controls, the auditor may consider factors such as:

- The nature, frequency and volume of transactions;
- The strength of controls, including whether controls are appropriately designed to respond to the identified risks of material misstatement and the strength of governance;
- The importance of particular controls to the overall control objectives and processes in place at the entity, including the sophistication of the information systems to support transactions;
- The monitoring of controls and identified deficiencies in control procedures;
- The issues the controls are intended to address, for example, controls related to the exercise of judgments compared with controls over supporting data. Substantive tests are more likely to be effective than relying on controls related to the exercise of judgment;
- The competency of those involved in the control activities;
- The frequency of performance of the control activities;
- The level of precision the controls are intended to achieve; and
- The evidence of performance of control activities.

*Substantive Procedures Alone Cannot Provide Sufficient Appropriate Audit Evidence*

A98. Factors that may indicate that substantive procedures alone may not provide sufficient appropriate audit evidence at the assertion level include:

- The need to combine information from the general and subsidiary ledgers with information obtained from outside the general and subsidiary ledgers.
- The volume of transactions. A high volume of transactions makes it more difficult to design substantive procedures that alone provide sufficient appropriate audit evidence at the assertion level.
- Significant information supporting one or more relevant assertions is electronically initiated, recorded, processed, or reported. For such assertions, audit evidence may be available only in electronic form. In such cases, the sufficiency and appropriateness of the audit evidence may depend on the effectiveness of controls over the accuracy and completeness of the information. In addition, the potential for improper initiation or alteration of information to occur and not be detected may be greater if information is initiated, recorded, processed, or reported only in electronic form and appropriate controls are not operating effectively.

A98A. Some industries, such as the financial services industry, make extensive use of IT to conduct their business or have a large number of accounting estimates, many of which are highly subjective or complex. It is therefore more likely that substantive procedures alone cannot provide sufficient and appropriate audit evidence. For example, an expected credit loss provision may require information from the entity's risk management system and it may require the use of large volumes of data as it is based on a large number of individually small mortgages.

A99. In some jurisdictions, as part of the audit of the financial statements for certain entities (such as a bank or insurer), the auditor also may be required by law or regulation to undertake additional work to provide assurance on internal controls. Where the engagement partner has performed such an engagement, the engagement partner is required to consider whether information obtained is relevant to identifying the risks of material misstatement.[39] In these and other circumstances, the auditor may be able to use information obtained in performing such engagements as audit evidence, subject to determining whether subsequent changes have occurred that may affect its relevance to the audit.

*Determining Whether Events Occurring up to the Date of the Auditor's Report Provide Audit Evidence Regarding the Accounting Estimate* (Ref: Para. 17)

A100A. Determining whether events occurring up to the date of the auditor's report may be an appropriate response when such events provide audit evidence that confirms or contradicts relevant assertions about the accounting estimate. Accordingly, there may be no need to perform additional audit procedures on the accounting estimate, provided that sufficient appropriate evidence about the events is obtained. For example, sale of the complete inventory of a discontinued product shortly after the period end may provide audit evidence relating to the estimate of its net realizable value at the period end.

A100C. In other cases, it may be necessary to use this approach in connection with another approach as set out in paragraph 15. For example, an entity may perform an annual impairment analysis on an intellectual property right using a discounted cash flow analysis. The cash flows are dependent on the entity's revenue projections, which are derived from the projected number of products to be sold in the future and the projected sales price. The auditor may determine that sales contracts entered into after period end provide sufficient appropriate audit evidence for the sales price used in the revenue projections. However, the auditor also may design and perform audit procedures to obtain evidence about projected sales volumes as well as other significant assumptions.

A100D. 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.

A100E. 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.

A100F. 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.[40] 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 identified[41] and appropriately reflected in the financial statements.42 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.

*Testing How Management Made the Accounting Estimate*

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[39] ISA 315 (Revised), paragraph 8

[40] ISA 560, *Subsequent Events*

[41] ISA 560, paragraph 6

[42] ISA 560, paragraph 8

A100G. Testing how management made the accounting estimate may be an appropriate response when, for example:

- The accounting estimate is derived from the routine processing of data.
- 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.

Testing how management made the accounting estimate also may be an appropriate response when neither of the other testing approaches are practical to perform, or may be an appropriate response in combination with one of the other testing approaches.

A100H. [Previously A141] With respect to accounting estimates that have not been recognized, a particular focus of the auditor's evaluation may be on whether the recognition criteria of the applicable financial reporting framework have in fact been met. When an accounting estimate has not been recognized, and the auditor concludes that this treatment is appropriate, some financial reporting frameworks may require disclosure of the circumstances in the notes to the financial statements.

Methods

The selection of the method (Ref: Para. 17B(a))

A101. When management uses a complex method, an important factor that the auditor may need to consider regarding the appropriateness of the method is whether there were other available valuation concepts or techniques that, in the circumstances, might have been more appropriate in the context of the applicable financial reporting framework.

A107. Relevant considerations for the auditor regarding the appropriateness of the method selected by management in the context of the requirements of the applicable financial reporting framework, and, if applicable, the appropriateness of changes from the prior period include, for example:

- Management's rationale for the method selected is appropriate;
- Whether the method is appropriate in the circumstances given the nature of the asset or liability being estimated, the requirements of the applicable financial reporting framework and the business, industry and environment in which the entity operates;
- When management has determined that different methods result in a range of significantly different estimates, how management has investigated the reasons for these differences; and
- When there has been a change from the prior period, whether the change is based on new circumstances or new information. When this is not the case, the change is unlikely to be reasonable nor in compliance with the applicable financial reporting framework. Arbitrary changes result in inconsistent financial statements over time and may give rise to a financial statement misstatement or may be an indicator of possible management bias. (Also see paragraphs A138B–A138E)

These matters are particularly important when the applicable financial reporting framework does not prescribe the method of measurement.

Complex modelling (Ref: Para. 17B(c))

A108C. [Previously A104] Depending on the circumstances, matters that the auditor may consider when management uses a complex 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 and when there has been a change to the model. The entity's validation process may include evaluation of:
  - o The model's theoretical soundness;
  - o The model's mathematical integrity;
  - o The accuracy and completeness of the model's data and assumptions; and
  - o The model's output as compared to actual transactions.
- appropriate change control policies and procedures exist.
- Management uses appropriate skills and knowledge in applying the method.

A108D. [Previously A112] When management has made adjustments to the output of the model (see paragraph A30) to meet the requirements of the applicable financial reporting framework, consideration of those adjustments is likely to be important in obtaining sufficient appropriate audit evidence. Several types of methods used for the valuation of accounting estimates require adjustments. For example, fulfilment value accounting for valuing insurance contracts and overlay adjustments when accounting for expected credit losses. In the case of fair value accounting estimates, it may be relevant to consider whether adjustments to the output of the model, if any, reflect the assumptions marketplace participants would use in similar circumstances.

Integrity of significant assumptions and significant data used in applying the method (Ref: Para. 17B(d))

A108E. Maintaining the integrity of data and assumptions in applying the method refers to the maintenance of the accuracy, completeness and consistency of the data and assumptions through all stages of information processing. A failure to maintain such integrity results in corruption of the data and assumptions and may give rise to misstatements. In this regard, relevant considerations for the auditor include whether the data and assumptions are subject to all changes intended by management, and not subject to any unintended changes, during input, storage, retrieval, transmission or processing.

Significant Assumptions (Ref: Para. 17C)

A108F. Relevant considerations for the auditor regarding the appropriateness of the significant assumptions selected by management in the context of the requirements of the applicable financial reporting framework, and, if applicable, the appropriateness of changes from the prior period include, for example:

- Management's rationale for the selection of the assumption; and
- Whether the assumption is appropriate in the circumstances given the nature of the asset or liability being estimated, the requirements of the applicable financial reporting framework, and the business, industry and environment in which the entity operates.
- When there has been a change from the prior period, whether the change from prior periods in selecting an assumption is based on new circumstances or new information. When it is not, it is unlikely to be reasonable nor in compliance with the applicable financial reporting framework. Arbitrary changes in an accounting estimate may give rise to a financial

statement misstatement or may be an indicator of possible management bias (see paragraphs A138B–A138E).

A108G. [Previously A132] Whether the auditor develops a point estimate or range using management's or the auditor's own methods, assumptions or data, it is important for the auditor to obtain sufficient appropriate audit evidence to evaluate whether the methods, assumptions and data are appropriate in the context of the applicable financial reporting framework. Obtaining such evidence also may be important to the auditor's evaluation of whether the accounting estimate is reasonable or is misstated.

A108H. [Previously A133] The auditor also may need to consider whether there is an indication of management bias in the selection of the assumptions, data or method. For example, for a particular accounting estimate, if management has developed an appropriate range for three different assumptions, and in each case the assumption used in making the accounting estimate was from the same end of the range, the auditor may need a further discussion with management and may need to reconsider whether sufficient appropriate audit evidence has been obtained that the assumptions selected were appropriate and supportable in the circumstances.

A109. Management may evaluate alternative assumptions or outcomes of the accounting estimates, which can be accomplished through a number of approaches depending on the circumstances. One possible approach is 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.

A111. The reasonableness of the significant 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 applicable 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, when 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 and legal, regulatory, or contractual restrictions that could affect the feasibility of management's actions.
- Consideration of whether management has met the applicable documentation requirements, if any, of the applicable financial reporting framework.

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 significant assumptions reflect those used by marketplace participants.

Significant Data (Ref: Para. 17D)

A111A. Relevant considerations for the auditor regarding the appropriateness of the significant data selected for use in the context of the requirements of the applicable financial reporting framework, and, if applicable, the appropriateness of the changes from the prior period include, for example:

- Management's rationale for the selection of the data; and
- Whether the data is appropriate in the circumstances given the nature of the asset or liability being estimated, the requirements of the applicable financial reporting framework, and the business, industry and environment in which the entity operates.
- When there has been a change from the prior period, whether the change from prior periods in the sources or items of data selected or data selected, is based on new circumstances or new information. When it is not, it is unlikely to be reasonable nor in compliance with the applicable financial reporting framework. Arbitrary changes in an accounting estimate result in inconsistent financial statements over time and may give rise to a financial statement misstatement or may be an indicator of possible management bias (see paragraphs A147–A152).

A111C. [Previously A105] Procedures that the auditor may consider when the accounting estimate is based on complex legal or contractual terms include:

- Considering whether specialized skills or knowledge are needed to understand or interpret the contract;
- Inquiring of the entity's legal counsel regarding the legal or contractual terms; and
- Inspecting the underlying contracts to:
    - Obtain an understanding of, and evaluate, the underlying business purpose for the transaction or agreement; and
    - Consider whether the terms of the contracts are consistent with management's explanations.

Management's Selection of a Point Estimate and Related Disclosures

Management's steps to understand and address estimation uncertainty (Ref: Para. 17E(a))

A113. To determine whether management has taken appropriate steps to understand and address estimation uncertainty, including developing a point estimate and related disclosures that meet the measurement objective, relevant considerations for the auditor include whether management has:

(a) Understood the estimation uncertainty, through identifying the sources, and assessing the degree of inherent variability in the measurement outcomes and the resulting range of reasonably possible measurement outcomes (sensitivity analysis);

(b) Identified the degree to which, in the measurement process, inherent complexity and subjectivity and other inherent risk factors affect susceptibility of assertions about the accounting estimate to misstatement that could be material, and addressed the resulting potential for misstatement through applying:

(i) Appropriate skills and knowledge in making accounting estimates;

(ii) Professional judgment, including by identifying and addressing susceptibility to management bias; and

(c) Addressed estimation uncertainty in providing, in the financial statements, a faithful representation of the item being estimated, through appropriately selecting management's point estimate and related disclosures that describe the estimation uncertainty.

Appendix 1 explains the importance of management considering estimation uncertainty and explains that there is no particular method of addressing estimation uncertainty that is more suitable than another.

Management's selection of a point estimate and related disclosures of estimation uncertainty (Ref: Para. 17E(b))

A116. Relevant considerations for the auditor regarding the reasonableness of management's point estimate, include:

- When the requirements of the applicable financial reporting framework prescribe the point estimate that is to be used after consideration of the alternative outcomes and assumptions, or prescribes a specific measurement method, whether management has followed the requirements of the applicable financial reporting framework. See appendix 1 for examples of how the applicable financial reporting framework may specify how to select a point estimate.
- When the applicable financial reporting framework has not specified how to select an amount from reasonably possible measurement outcomes, judgment will be required, having regard to the requirements of the applicable financial reporting framework, including requirements relating to fair presentation and faithful representation.

A120. In obtaining sufficient and appropriate audit evidence about the reasonableness of the disclosures in the financial statements that describe the estimation uncertainty, the auditor takes into account the requirements of the applicable financial reporting framework, which may require disclosures:

- That describe the amount as an estimate and explain the nature and limitations of the process for making it, including the variability in reasonably possible measurement outcomes. The framework also may require additional disclosures to meet a disclosure objective.[43]
- About significant accounting policies related to accounting estimates. Depending on the circumstances, relevant accounting policies may include matters such as the specific principles, bases, conventions, rules and practices applied in preparing and presenting accounting estimates in the financial statements.
- About significant or critical judgments (for example, those that had the most significant effect on the amounts recognized in the financial statements) as well as significant forward-looking assumptions or other sources of estimation uncertainty.

In certain circumstances, additional disclosures beyond those specifically required by the financial reporting framework may be needed in order to achieve fair presentation, or in the case of a compliance framework, for the financial statements not to be misleading.

A124. The auditor may conclude that the disclosure of estimation uncertainty is not reasonable in light of the circumstances and facts involved, even when the disclosures are in accordance with the applicable financial reporting framework. For example, the auditor may conclude that management's judgments in determining the disclosures that describe estimation uncertainty are not appropriate or, the auditor may conclude that the financial statements do not provide

[43] IFRS 13, *Fair Value Measurement*, paragraph 92

disclosures necessary to achieve fair presentation, even when the disclosures are in accordance with the disclosure requirements of the applicable financial reporting framework. The greater the estimation uncertainty, the more persuasive the audit evidence needs to be about whether management's point estimate and related disclosures are reasonable.

A125. 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. If the auditor's consideration of estimation uncertainty associated with an accounting estimate, and its related disclosure, is a matter that required significant auditor attention, then this may constitute a key audit matter.[44]

When management has not appropriately understood or addressed estimation uncertainty (Ref: Para. 17F)

A126A. The purpose of developing an auditor's point estimate or range is to enable the auditor to evaluate the reasonableness of management's point estimate and the related disclosures in the financial statements that describe the estimation uncertainty. When determining whether to develop an auditor's point estimate or range, in circumstances where the auditor has determined that management has not appropriately understood or addressed estimation uncertainty, it may be important for the auditor to take into account relevant ethical requirements, for example those that address prohibitions on assuming management responsibilities that may be relevant.

A126B. If, after considering management's response, the auditor determines that it is not appropriate to develop an auditor's point estimate or range and that the auditor is unable to obtain sufficient appropriate audit evidence through adopting another approach in paragraph 15, the auditor evaluates the implications for the audit or the auditor's opinion on the financial statements in accordance with paragraph 22A.

*Developing an Auditor's Point Estimate or Using an Auditor's Range* (Ref: Para. 18–18C)

A126C. Developing an auditor's point estimate or range to evaluate management's point estimate and related disclosures may be an appropriate response when, for example:

- The accounting estimate has a lower degree of estimation uncertainty, and is affected to a lesser degree by complexity, subjectivity or other inherent risk factors.
- 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 have not been properly taken into account, and appear to contradict management's point estimate.
- There are appropriate alternative sources of relevant data available to the auditor that can be used in developing a point estimate or a range.
- Management has not appropriately understood and addressed the estimation uncertainty (see paragraph 17F).

A129. Developing a point estimate or range to test management's point estimate may be the most practical approach for a relatively simple estimate with a single set of assumptions and data.

[44] ISA 701, *Communicating Key Audit Matters in the Independent Auditor's Report*

Conversely, the auditor may determine that the approach of testing how management made the accounting estimate is more practical for a complex estimate with multiple data sets and assumptions, and where the most effective audit strategy would include testing relevant controls.

A129A. [Previously A130] The decision to develop a point estimate or range also 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, or the most likely outcome).

A129B. The auditor's decision as to whether to develop a point estimate rather than a range may depend on the nature of the estimate and the auditor's judgment in the circumstances. For example, the nature of the estimate may be such that there would be less variability in the reasonably possible outcomes. In these circumstances, developing a point estimate may be an effective approach, particularly when it can be developed with a higher degree of precision.

A131. 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.
- Using management's model and selecting alternative assumptions or data sources.
- Using the auditor's own method, but developing alternative assumptions to those used by management.
- 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.

The auditor also may develop a point estimate or range for only part of the accounting estimate (for example, when only a certain part of the accounting estimate is giving rise to the risk of material misstatement).

A134. In certain circumstances, the size of the auditor's range may be multiples of materiality for the financial statements as a whole, particularly when materiality is based on operating results (for example, pre-tax income) and this measure is relatively small in relation to assets or other balance sheet measures. This may arise when the estimation uncertainty associated with the accounting estimate is itself multiples of materiality, which may be the case in certain business sectors, such as insurance where a high degree of estimation uncertainty is more typical and there may be specific requirements in the applicable financial reporting framework in that regard. In these circumstances, the auditor's evaluation of the reasonableness of the disclosures about estimation uncertainty becomes increasingly important, particularly whether such disclosures appropriately assist users' understanding of the nature and extent of the estimation uncertainty.

*Other Considerations Relating to Audit Evidence* (Ref: Para. 18D)

A134A. As explained in ISA 500,[45] the reliability of information from an external information source is influenced by its source, its nature, and the circumstances under which it is obtained. Consequently, the nature and extent of the auditor's further audit procedures to consider the reliability of the information used in making an accounting estimate may vary depending on the nature of these factors. For example:

[45] ISA 500, Paragraph A31

- When market or industry data, prices, or pricing related data, are obtained from a single external information source, specializing in such information, the auditor may seek a price from an alternative independent source with which to compare.
- When market or industry data, prices, or pricing related data, are obtained from multiple independent external information sources and points to consensus across those sources, the auditor may need to obtain less evidence about the reliability of an individual source.
- When information obtained from multiple information sources points to divergent market views the auditor may ordinarily seek to understand the reasons for the diversity in views. The diversity may result from the use of different methods, data or assumptions. For example, one source may be using current prices and another source using future prices. When the diversity reflects estimation uncertainty, the auditor may need to consider the reasonableness of disclosures made in the financial statements that describe the estimation uncertainty. In such cases professional judgment is also important in considering information, when available, about the methods, assumptions or data applied.
- When information obtained from an external information source has been developed by that source using its own model(s), the auditor may need to consider whether further procedures are appropriate to consider the method, data and assumptions used by the source, as described in paragraph A33F of ISA 500.

A134B. For fair value accounting estimates, additional considerations of the relevance and reliability of information obtained from external information sources may also include the following:

(a) Whether fair values are based on trades of the same instrument or active market quotations;

(b) When the fair values are based on transactions of comparable assets or liabilities, how those transactions are identified and considered comparable;

(c) When there are no transactions either for the asset or liability or comparable assets or liabilities, how the information was developed including whether the inputs developed and used represent the assumptions that market participants would use when pricing the asset or liability, if applicable; and

(d) When the fair value measurement is based on a broker quote, whether the broker quote:

   (i) Is from a market maker who transacts in the same type of financial instrument;

   (ii) Is binding or nonbinding, with more weight placed on quotes based on binding offers; and

   (iii) Reflects market conditions as of the date of the financial statements, when required by the applicable financial reporting framework.

A134C.When information is used from an external information source, other relevant considerations for the auditor include:

- In many circumstances, information regarding the methods, assumptions and other data applied by the external information source in developing the information may not be available and the auditor may not be able to consider the accuracy and completeness of the information, as there may be no contractual relationship between the external information source that requires the provision of information, or the external information source may refuse to provide information considered to be intellectual property.
- The availability of sufficiently granular information to understand the methods, assumptions

and other data used by the external information source may also be limited in some respects and consequently influence the auditor's consideration of the nature, timing and extent of procedures to perform. For example, pricing services often provide information about their methods and assumptions by asset class rather than individual securities. Brokers often provide only limited information about their inputs and assumptions when providing broker indicative quotes for individual securities.

Paragraph A33Ga of ISA 500 provides guidance with respect to restrictions placed by the external information source on the provision of supporting information.

**Disclosures Related to Accounting Estimates** (Ref: Para. 21)

A138. When the financial statements are prepared in accordance with a fair presentation framework, the auditor's evaluation as to whether the financial statements achieve fair presentation[46] include the consideration of the overall presentation, structure and content of the financial statements, and whether the financial statements, including the related notes, represent the underlying transactions and events in a manner that achieves fair presentation. Given the importance of accounting estimates to the overall financial statements, the auditor may determine that additional disclosures related to accounting estimates are necessary to achieve fair presentation. This may be the case, for example, when an accounting estimate is subject to significant estimation uncertainty (see paragraphs A124–A125 and Appendix 1).

A138A. ISA 705 (Revised)[47] provides guidance on the implications for the auditor's opinion when the auditor believes that management's disclosures in the financial statements are inadequate or misleading, including, for example, with respect to estimation uncertainty.

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

A138B. [Previously A149] Management bias may be difficult to detect at an account level and may only be identified by the auditor when considering groups of accounting estimates, all accounting estimates in aggregate, or when observed over a number of accounting periods. For example, if accounting estimates included in the financial statements are considered to be individually reasonable but management's point estimates consistently trend toward one end of the auditor's range of reasonable outcomes that provide a more favorable financial reporting outcome, such circumstances may indicate possible bias by management.

A138C. [Previously A147] Examples of indicators of possible management bias with respect to accounting estimates include:

- Changes in an accounting estimate, or the method for making it, when management has made a subjective assessment that there has been a change in circumstances.
- Selection or development of significant assumptions or significant data that yield a point estimate favorable for management objectives.
- Selection of a point estimate that may indicate a pattern of optimism or pessimism.

When such indicators are identified, there may be a risk of material misstatement either at the account or financial statement level. Indicators of possible management bias themselves do not constitute misstatements for purposes of drawing conclusions on the reasonableness of

[46] ISA 700 (Revised), paragraph 14

individual accounting estimates. However, in some cases the audit evidence may point to a misstatement rather than simply an indicator of management bias.

A138D. [Previously A151] Indicators of management bias 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 (Revised).[48]

A138E. [Previously A152] In addition, in applying ISA 240, the auditor is required to evaluate whether management's judgments and decisions in making the accounting estimates included in the financial statements indicate a possible bias that may represent a material misstatement due to fraud.[49] Fraudulent financial reporting is often accomplished through intentional misstatement of accounting estimates, which may include intentionally understating or overstating accounting estimates. Indicators of possible management bias that may also be indicators of a fraud risk may cause the auditor to reassess whether the auditor's risk assessments, in particular the assessment of fraud risks, and related responses remain appropriate.

**Overall Evaluation Based on Audit Procedures Performed** (Ref: Para. 22)

A139. As the auditor performs planned audit procedures, the audit evidence obtained may cause the auditor to modify the nature, timing or extent of other planned audit procedures.[50] In relation to accounting estimates, information may come to the auditor's attention through performing procedures to obtain audit evidence that differs significantly from the information on which the risk assessment was based. For example, the auditor may have identified that the only reason for an assessed risk of material misstatement is the subjectivity involved in making the accounting estimate. However, while performing procedures to address the assessed risk of material misstatement, the auditor may discover that the accounting estimate is more complex than originally contemplated, indicating that the assessment of the risk of material misstatement may need to be revised (that is, the reasons for the assessment now include complexity) and therefore the auditor may need to perform additional audit procedures.[51]

*Misstatements* (Ref: Para.23)

A143. Paragraphs A113 to A118 provide guidance to assist the auditor in evaluating management's selection of a point estimate to be included in the financial statements. Based on the audit evidence obtained, the auditor may conclude that there is sufficient appropriate audit evidence supporting management's point estimate.

A143A. In other circumstances:

- When the auditor uses a range, the size of the range may be significant (including when the auditor's range is multiples of materiality for the financial statements as a whole). A wide range does not mean that the amounts in the auditor's range are not reasonable, but may indicate that it is important for the auditor to reconsider whether sufficient appropriate audit evidence has been obtained regarding the reasonableness of the amounts within the range.

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[48] ISA 700, paragraph 12

[49] ISA 240, paragraph 32(b)

[50] ISA 330, paragraph A60

[51] See also ISA 315 (Revised), paragraph 31

- The audit evidence may support a point estimate that differs from management's point estimate. In such circumstances, the difference between the auditor's point estimate and management's point estimate constitutes a misstatement.
- The audit evidence may support a range that does not include management's point estimate. In such circumstances, the misstatement is the difference between management's point estimate and the nearest point of the auditor's range.

A146. Evaluating whether sufficient appropriate audit evidence has been obtained, and whether the accounting estimate is misstated, involves essentially the same types of considerations applied whether the accounting estimate is recognized or disclosed in the financial statements.

A146A. ISA 450 also provides guidance regarding qualitative disclosures[52] and when misstatements in disclosures could be indicative of fraud.[53]

**Written Representations** (Ref: Para. 25)

A153. Written representations about specific accounting estimates may include representations:

- That the significant judgments made in making the accounting estimates have taken into account all relevant information of which management is aware.
- About the consistency and appropriateness in the selection or application of the methods, assumptions and data used by management in making the accounting estimates.
- That the assumptions appropriately reflect management's intent and ability to carry out specific courses of action on behalf of the entity, when relevant to the accounting estimates and disclosures.
- That disclosures related to accounting estimates, including disclosures describing estimation uncertainty, are complete and are reasonable in the context of the requirements of the applicable financial reporting framework.
- That appropriate specialized skills or expertise has been applied in making the accounting estimates.
- That no subsequent event requires adjustment to the accounting estimates and related disclosures included in the financial statements.
- When accounting estimates are not recognized or disclosed in the financial statements, about the appropriateness of management's decision that the recognition or disclosure criteria of the applicable financial reporting framework have not been met.

**Communication with Those Charged With Governance or Management** (Ref: Para. 26)

A155. In applying ISA 260 (Revised), the auditor communicates with those charged with governance the auditor's views about significant qualitative aspects of the entity's accounting practices relating to accounting estimates and related disclosures.[54] Appendix 3 includes matters specific to accounting estimates that the auditor may consider communicating to those charged with governance.

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[52] ISA 450, paragraph A17

[53] ISA 450, paragraph A22

[54] ISA 260 (Revised), paragraph 16(a)

A156. Significant deficiencies in internal control relating to accounting estimates may be identified by the auditor and communicated to those charged with governance, including related to controls over:[55]

(a) The selection and application of significant accounting policies, and the selection and application of methods, assumptions, and data;

(b) Risk management and related systems related to the method, assumptions and data used to make the accounting estimate;

(c) Data integrity, including when data is obtained from an external information source; and

(d) The use, development and validation of models, including models obtained from an external provider, and any adjustments that may be required.

A157. In addition to communicating with those charged with governance, the auditor may be permitted or required to communicate directly with regulators or prudential supervisors. Such communication may be useful throughout the audit or at particular stages, such as when planning the audit or when finalizing the auditor's report. For example, in some jurisdictions, financial institution regulators seek to cooperate with auditors to share information about the operation and application of controls over financial instrument activities, challenges in valuing financial instruments in inactive markets, expected credit losses, and insurance reserves while other regulators may seek to understand the auditor's views on significant aspects of the entity's operations including the entity's costs estimates. This communication may be helpful to the auditor in identifying, assessing and responding to risks of material misstatement.

**Documentation** (Ref: Para. 27)

A158. In applying ISA 230[56] in the context of auditing accounting estimates, the auditor is required to prepare audit documentation about professional judgments that form the basis for the auditor's evaluation of whether the accounting estimates and related disclosures are reasonable in the context of the applicable financial reporting framework, or are misstated. In addition, the auditor's judgments about the assessed risk of material misstatement related to accounting estimates, and the auditor's response, may likely be further supported by documentation of communications with those charged with governance and management.

A158A. The auditor also may consider documenting:

- When management's application of the method involves complex modeling, whether management's judgments have been applied consistently, and when applicable that the design of the model meets the measurement objective of the applicable financial reporting framework.
- When the degree to which complexity affects the selection and application of methods, significant data or significant assumptions in making accounting estimates, the auditor's significant judgments in determining whether specialized skills or knowledge are required to perform the risk assessment procedures, to respond to those risks or to evaluate the audit evidence and, if so, how the required skills or knowledge were applied.

A158B. Paragraph A7 of ISA 230 notes that documenting evidence of the auditor's exercise of professional skepticism in accordance with the ISAs, in relation to accounting estimates, is particularly important when they are subject to a greater degree of estimation uncertainty or

[55] ISA 265, paragraph 9

[56] ISA 230, paragraph 8(c)

affected to greater extent by subjectivity, complexity or other inherent risk factors. Examples of requirements in this ISA, the audit documentation of which may provide evidence of the exercise of professional skepticism by the auditor include:

- Paragraph 10(d), for example in documenting how the auditor has applied their understanding in developing their own expectation of the accounting estimates and related disclosures to be included in the financial statements and how that expectation compares with the draft financial statements prepared by management;
- Paragraph 15, in documenting how the further audit procedures were designed to obtain evidence from relevant sources, including sources that are independent of those used by management;
- Paragraphs 17C(a)(ii), 17D(a)(ii) and 21A, which address indicators of possible management bias; and
- Paragraph 22A, which addresses the auditor’s consideration of audit evidence, whether corroborative or contradictory.

**Appendix 1**

(Ref: Para. 2A)

## Measurement Bases of Accounting Estimates

1. The purpose of this Appendix is to explain the range of different types of measurement bases that may be relevant in making an accounting estimate and how the measurement basis is applied in making an accounting estimate and related disclosures. It is intended to provide context for the auditor's consideration of the implications of the use of a particular measurement basis in addressing accounting estimates and related disclosures in the audit, taking into account the degree to which an accounting estimate is subject to, or affected by, the inherent risk factors of estimation uncertainty, complexity and subjectivity (see Appendix 2).

2. Measurement bases are the measurement objectives for determining the required monetary amounts for financial statement items, and such bases may be either historical cost or current value. Monetary amounts for financial statement items measured at historical cost provide information derived from the transaction or event that created them, and those measured at current value provide information that is updated to reflect conditions at the measurement date. A current value measurement basis may reflect either an entity-specific or a market-based perspective of value.

### Measurement and Estimation

3. Depending on the measurement basis and on the nature, condition and circumstances of a financial statement item, the monetary amount required to be measured for the item at initial recognition may be a cost or price of the item, which may be re-measured or adjusted thereafter to reflect certain subsequent changes in the condition and circumstances of the item. A cost or price may be directly observable in records of actual transactions (either of the entity or between market participants) or may need to be estimated using valuation or measurement techniques. Adjustments to reflect subsequent changes often also require estimation. Examples of circumstances in which accounting estimates may be required, when applying a range of common measurement bases, are discussed below.

4. The nature, condition and circumstances of financial statement items vary widely and give rise to quantitative and qualitative attributes of those items that would influence an item's cost or price, and therefore the monetary amount of the item, on the relevant measurement basis (referred to in this ISA as valuation attributes).

5. The nature of a financial statement item may give rise to valuation attributes relating to the rights, obligations or other claims relating to resources, or changes therein, which the item embodies. The circumstances and condition of a financial statement item also may give rise to valuation attributes. These may relate to general economic, regulatory, technological and market conditions. They may also relate to conditions of more specific relevance to the item, including the nature of the business, how the items are used in the business and how the risks and uncertainties inherent in the business activities affect the item.

6. Valuation attributes may affect how the item contributes to the timing and amounts of cash flows, and related risks and uncertainties, and may reflect other risks and uncertainties inherent in the item. As a result, valuation attributes may influence the cost or price of the item on initial recognition, or on re-measurement, or may influence the monetary amount relating to subsequent changes for which adjustment is required.

## Making an Accounting Estimate

7. When an accounting estimate needs to be made, valuation or measurement techniques may be used to estimate the required monetary amount. Such techniques involve measuring or estimating relevant valuation attributes and applying a process using the resulting amounts to determine a measurement outcome that reflects knowledge about how the valuation attributes would be expected to influence an item's monetary amount on the relevant measurement basis. Amounts for valuation attributes are determined based on observable data, where available, or are otherwise estimated based on assumptions that take into account the best available data.

7A. Appropriately selecting and applying valuation or measurement techniques involves doing so in a manner that would result in measurement outcomes that are aligned with the objective of the measurement basis, and that take into account the nature, condition and circumstances of the item.

8. Making an accounting estimate for a financial statement item, by estimating a monetary amount in this way, therefore usually involves determining:

- The relevant quantitative and qualitative valuation attributes;
- The extent to which observable data is available to determine or estimate amounts for the valuation attributes;
- If such data is available, and is sufficiently precise and comprehensive to measure the valuation attributes, the sources of data that would provide appropriate measures of those attributes;
- If such data is not available, or is not sufficiently precise or comprehensive, the types of assumptions that need to be made in estimating appropriate amounts for those attributes, the sources of the best available data that would provide appropriate support in making those assumptions, and the range of reasonably possible amounts for such assumptions that would be supported by that data;
- Based on the best available knowledge about how the required monetary amount would be determined on the measurement basis, the appropriate method (valuation or measurement technique or combination of such techniques) to apply in using such data and assumptions to estimate the required monetary amount;
- Where applicable, the nature and the range of values of any adjustments that may need to be made in applying that method, for example to reflect practical limitations in the technical basis of the valuation or measurement technique(s) used in measuring the cost or price that it purports to measure;
- The range of reasonably possible measurement outcomes that would result from using the range of reasonably possible values for each of the assumptions in applying the method (sensitivity analysis);
- The amount (point estimate), selected from the range of reasonably possible measurement outcomes, that appropriately represents that range in accordance with the objective of the measurement basis; and
- The information about the estimation uncertainty and other matters relating to the accounting estimate that should be disclosed, together with the recognition or disclosure of the point estimate, in the financial statements to provide a faithful representation of the financial statement item being estimated.

## Examples of Circumstances in Which Accounting Estimates May Be Required in Applying Certain Measurement Bases

*Historical Cost Measurement Bases*

9. Some measurement bases require the use of monetary amounts at initial recognition that reflect the cost paid or consideration given (and transaction costs) for an asset acquired or built, and the consideration received (less transaction costs) for a liability incurred or assumed, based on the terms of the transactions that gave rise to them (historical cost). Such amounts may be directly observable (for example, they may be observed in invoices, remittance or payment advices or contract notes or other primary transaction records).

10. When such amounts are not directly observable, it may be necessary to estimate a deemed cost for the item(s) using a proxy such as fair value (see paragraph 19). For example, the deemed cost of an item may be the fair value of the other assets or liabilities exchanged for the item or may be the fair value of the item itself when no other assets or liabilities are exchanged for it. That deemed cost may not be known at the measurement date and may depend on the outcome of future events or circumstances (such as would be the case when part or all of the amount payable for the acquisition of a business depends on the future earnings of the business). Deemed cost may therefore be difficult to determine.

*Adjustments of Historical Cost Measures after Initial Recognition*

11. Historical cost measurement bases require adjustments to reflect changes after initial recognition of the item, other than changes in prices. Such changes may occur over several reporting periods. For non-financial assets and liabilities, these changes may reflect the consumption or impairment of an asset or the fulfilment of, or the onset of onerous conditions relating to, a liability. The historical cost of a financial asset or a financial liability may be referred to as amortized cost.

12. For financial assets and financial liabilities measured using amortized cost, adjustments are made to reflect changes after initial recognition such as the accrual of interest, changes in the estimates of cash flows (including the impairment of financial assets) and payments or receipts, but not to reflect subsequent changes in prices caused by other factors.

13. The monetary amounts of adjustments to historical costs measured at initial recognition will often not be directly observable and will need to be estimated. Estimating consumption and identifying impairment losses or onerous liabilities can be subjective. Hence, the historical cost of an asset or a liability can sometimes be as difficult to estimate as a current value.

*Impairment of an Asset*

14. Impairment adjustments are made when the amount recoverable from disposal or use of an asset is less than its carrying amount, after taking account of adjustments for depreciation or amortization. Impairment may be caused by a number of factors, depending on the nature of the asset, such as obsolescence, physical damage, a reduction in creditworthiness (financial assets), a reduction in market value or a reduction in the operational use of the asset. The monetary amount of the impairment, if any, of a historical cost measure of an asset at the balance sheet date is not ordinarily directly observable, and may depend on future realizations from the use or sale of the item.

15. The amount recoverable from disposal may be required to be determined based on a fair value measurement or at net realizable value, and may require estimation. Similarly, the amount recoverable from use (referred to as value in use, see paragraph 24) will ordinarily require estimation. There can also be complex considerations relating to the appropriate unit of account.

16. Even if the amount of the impairment of the asset is confirmed in transactions subsequent to the balance sheet date at a monetary amount that is then observable, that amount may not reflect the level of impairment at the balance sheet date. This is because the level of impairment at the balance sheet date may have been subject to the effects of changes in circumstances between that date and the date of such transactions.

*Depreciation or Amortization*

17. The depreciation or amortization of an asset's historical cost reflects the consumption of the underlying economic resource that constitutes the asset, during its useful life. The capacity of the economic resource (useful life of the asset), the progress of its consumption and the residual value of the asset are all uncertain. These amounts may not be known with certainty until the asset's total economic capacity and its consumption have been observed over its useful life and the asset at the residual stage has been disposed of. Ordinarily, none of these amounts would be directly observable when accounting estimates for depreciation or amortization are required to be made during the asset's useful life and would therefore require estimation.

*Current Value Measurement Bases*

18. Some measurement bases require the use of monetary amounts that reflect information about conditions at the measurement date rather than information based on historical transactions. Such measurement bases require the use of either a market-participant or an entity-specific perspective.

*Fair Value*

19. The fair value measurement basis requires measurement of the price for which an asset would have been sold, or a liability transferred, in an orderly transaction (or, if no such transaction has occurred, in an assumed transaction) between market participants in an active market at the measurement date. The objective of a fair value measurement is to estimate the price at which an orderly transaction to sell the asset or to transfer the liability would take place between market participants at the measurement date under current market conditions.

20. Financial reporting frameworks often establish a 'fair value hierarchy' that categorises the inputs used to measure fair value into three levels and gives priority to using those in the higher levels over using those in lower levels. The purpose of doing so is to increase consistency and comparability in fair value measurements and related disclosures. Quoted prices in active markets for identical assets or liabilities that the entity can access at the measurement date and that are not subject to adjustment, provide the most relevant evidence of fair value and are included in the highest level of the hierarchy (these are level 1 inputs).

21. If a level 1 input is not available or accessible, it may be possible to measure the fair value using other observable inputs, such as quoted prices for similar items in an active market or quoted prices for identical items in a non-active market or other inputs observed in or corroborated with active markets (e.g., interest rates, yield curves, implied volatilities or credit spreads) (such other observable inputs are level 2 inputs).

22. Otherwise, it may be necessary to measure the fair value, sometimes using discounted cash flow techniques, based on the best information available in the circumstances, including unobservable inputs to the extent observable inputs are not available, and taking into account all information about market participant assumptions that is reasonably available (unobservable inputs are level 3 inputs).

23. In some circumstances, fair value may be measured using inputs from more than one level of the

hierarchy, or using a level 1 input that has been adjusted. Fair value measurements are categorized in their entirety in the same level of the hierarchy as the lowest level of input that is significant for the entire measurement. If so, their categorizations are ordinarily based on the lowest level of input used that is significant to the measurement as a whole, and on categorizing a fair value measurement that uses an adjusted level 1 input into either level 2 or level 3.

*Inactive or Illiquid Markets*

23A. [Previously A36] Some financial reporting frameworks require different accounting treatments depending on the level of activity in the market. Estimation uncertainty increases and valuation is more complex when the markets in which financial instruments or their component parts are traded become inactive. Valuation techniques selected when market information was available may not provide appropriate valuations when markets are illiquid or inactive. However, even where markets are inactive, prices achieved may still provide relevant evidence about fair value. In these circumstances, valuations may be developed based on more unobservable inputs and may be more subjective. When markets are inactive, prices quoted may not represent prices at which market participants would trade or may represent forced transactions (such as when disposal of an asset is necessary to meet regulatory or legal requirements).

23B. [Previously A37] Particular difficulties may develop where there is severe curtailment or even cessation of trading in particular financial instruments. In these circumstances, financial instruments that have previously been valued using market prices may need to be valued using a model; or, where they have previously been valued using a model, the model may need to change. Reacting to changes in market conditions may be difficult and may require specialized skills or knowledge to develop an appropriate model on a timely basis, or to select the valuation technique that may be most appropriate in the circumstances

*Value in Use and Fulfilment Value*

24. Some measurement bases require the use of monetary amounts that reflect the present value of the future cash flows that the entity will obtain from using and disposing of an asset (value in use) or will incur in fulfilling its obligations inherent in a liability (fulfilment value). For example, value in use is frequently used to test for impairment (see paragraph 15). Certain types of provisions may be measured using fulfilment value, such as provisions for pension obligations, product warranties, reinstatement obligations, or legal disputes. The monetary amounts required by such measurement bases cannot be observed directly and are estimated using discounted cash flow techniques. In principle, accounting estimates measured using value in use and fulfilment value, reflect an entity-specific perspective but some valuation attributes used in making them may be required to reflect a market-participant perspective, such as market interest rates.

**Valuation Techniques Commonly Used in Making Current Value Measurements**

*Valuation Techniques*

25. Valuation techniques can be categorized within three different approaches: the market approach; the cost approach; and the income approach.

*Market Approach*

26. Valuation techniques within the market approach typically use prices and other relevant information generated by market transactions involving identical or similar assets, liabilities or groups of assets and liabilities, such as businesses. Examples include the use of valuation

techniques for measuring fair value that use level 1 and level 2 inputs and valuation techniques for measuring fair value of real estate by reference to comparable properties.

*Cost Approach*

27. Valuation techniques within the cost approach typically reflect the amount that would be required to replace the service capacity of an asset at the measurement date (often referred to as current replacement cost). For example, current replacement cost is used to measure the fair value of tangible assets used in combination with other assets or liabilities.

*Income Approach*

28. Valuation techniques within the income approach typically convert future amounts, such as cash flows, or income and expenses, to a single discounted current amount. Valuation techniques that apply this approach include, for example, present value techniques and option pricing models. For example, discounted cash flow is a valuation technique within the income approach, which applies present value techniques to cash flows that are commonly used in measuring value in use and fulfilment value and sometimes used in measuring fair value.

*Discounted Cash Flow*

29. Measurement bases that involve the use of discounted cash flow in making accounting estimates generally require valuation attributes such as the following to be addressed:

- Estimates of the amount and timing of future cash flows arising from the item;
- Possible variations in the amount and timing of those cash flows, resulting from uncertainty inherent in those cash flows;
- Time value of money;
- Price (a risk premium or discount) for bearing the uncertainty inherent in the cash flows;
- Other attributes, such as liquidity, that would be taken into account in the circumstances; and
- If used to measure fair value of a liability, the price for bearing the entity's own credit risk.

30. The assumptions reflected in the discount rate should be consistent with the assumptions inherent in the cash flows – if uncertainty about future defaults is reflected in the discount rate, then the cash flows should be the contractual flows. If the cash flows are probability-weighted and therefore already reflect assumptions about uncertainty of future default, then the discount rate should not double-count that risk.

31. Assumptions about cash flows and discount rates should also be internally consistent. For example, nominal cash flows, which include the effect of inflation, should be discounted at a rate that includes the effect of inflation and after-tax cash flows should be discounted using after-tax discount rates.

**Faithful Representation of Accounting Estimates**

32. Faithful representation of the effects of transactions, other events and conditions that give rise to, or to a change in, a financial statement item that necessitates making an accounting estimate involves not only its recognition but also the measurement, presentation and disclosure of information about it. A complete depiction of an item includes all information necessary for a user of financial statements to understand the item being depicted, including all necessary descriptions and explanations. Hence, related disclosures can help provide a faithful representation of an

accounting estimate.

33. [Previously A116] Depicting the estimation uncertainty appropriately involves the selection of an appropriate point estimate and of appropriate related disclosures in the financial statements that describe the estimation uncertainty. For this purpose, an appropriate point estimate is an amount that appropriately represents the range of reasonably possible outcomes, and appropriate related disclosures describe the nature and extent of the variability in reasonably possible measurement outcomes.

*Selecting an Appropriate Point Estimate*

34. [Previously A117] The requirements of the applicable financial reporting framework may specify the method that should be applied in selecting an amount from the reasonably possible measurement outcomes. Financial reporting frameworks may recognize that the appropriate amount is one that is representative of the range of reasonably possible measurement outcomes and, in some cases, may indicate that the most relevant amount may be in the central part of that range.

35. [Previously A118] For example, with respect to fair value estimates, IFRS[57] indicates that, if multiple valuation techniques are used to measure fair value, the results (i.e., respective indications of fair value) shall be evaluated considering the reasonableness of the range of values indicated by those results. A fair value measurement is the point within that range that is most representative of fair value in the circumstances. In other cases, the applicable financial reporting framework may specify the use of a probability-weighted average of the reasonably possible measurement outcomes, or of the measurement amount that is most likely or that is more likely than not.

*Selecting Appropriate Related Disclosures*

36. [Previously A136] The applicable financial reporting framework may prescribe disclosures or disclosure objectives related to accounting estimates, and some entities may choose to disclose additional information, which may include, for example:

- The method of estimation used, including any applicable model and the basis for its selection.
- Information that has been obtained from models, or from other calculations used to determine estimates recognized or disclosed in the financial statements, including information relating to the underlying data and assumptions used in those models, such as:
    - o Assumptions developed internally; or
    - o Data, such as interest rates, that are affected by factors outside the control of the entity.
- The effect of any changes to the method of estimation from the prior period.
- The sources and implications of estimation uncertainty.
- Fair value information.
- Information about sensitivity analyses derived from financial models that demonstrates that

management has considered alternative assumptions.

37. [Previously A137] In some cases, the applicable financial reporting framework may require specific disclosures regarding estimation uncertainty, for example:

- The disclosure of information about the assumptions made about the future and other major sources of estimation uncertainty that give rise to a significant risk of a material adjustment to the carrying amounts of assets and liabilities after the period end. Such requirements may be described using terms such as “Key Sources of Estimation Uncertainty” or “Critical Accounting Estimates.” They may relate to accounting estimates that require management’s most difficult, subjective or complex judgments. Such judgments may be more subjective and complex, and accordingly the potential for a consequential material adjustment to the carrying amounts of assets and liabilities may increase, with the number of items of data and assumptions affecting the possible future resolution of the estimation uncertainty. Information that may be disclosed includes:
  - The nature of the assumption or other source of estimation uncertainty;
  - The sensitivity of carrying amounts to the methods and assumptions used, including the reasons for the sensitivity;
  - The expected resolution of an uncertainty and the range of reasonably possible outcomes in respect of the carrying amounts of the assets and liabilities affected; and
  - An explanation of changes made to past assumptions concerning those assets and liabilities, if the uncertainty remains unresolved.
- The disclosure of the range of possible outcomes, and the assumptions used in determining the range.
- The disclosure of specific information, such as:
  - Information regarding the significance of fair value accounting estimates to the entity’s financial position and performance; and
  - Disclosures regarding market inactivity or illiquidity.
- 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.

**Appendix 2**

(Ref: Para. 2A, 3A, 9(c))

## Inherent Risk Factors

1. In identifying, assessing and responding to the risks of material misstatement related to an accounting estimate, this ISA requires the auditor to take into account the degree to which the accounting estimate is subject to estimation uncertainty, and the degree to which complexity, subjectivity and other inherent risk factors affect the process of making the accounting estimate and depicting it in the financial statements, and therefore may indicate risks of material misstatement. Inherent risk factors are characteristics of conditions and events that may indicate susceptibility to misstatement before consideration of controls.

2. Paragraphs 2 to 8 of Appendix 1 explain the nature of a measurement basis (as a measurement objective) and how it is used in estimating the required cost or price of an item and determining the related disclosures. They also explain that the measurement basis and the nature, condition and circumstances of the financial statement item give rise to the relevant valuation attributes. When the cost or price of the item cannot be directly observed, an accounting estimate is required to be made by applying an appropriate method and using appropriate data and assumptions for relevant valuation attributes. The method may be specified by the applicable financial reporting framework, or is selected by management from available options, to reflect the best available knowledge about how the relevant valuation attributes would be expected to influence the cost or price of the item on the measurement basis.

2A. Inherent risk related to an accounting estimate is the susceptibility of an assertion about the accounting estimate to misstatement that could be material, before consideration of internal control. Inherent risk results from inherent risk factors, which give rise to challenges in appropriately making the accounting estimate (see Appendix 1, paragraph 8 for key elements of the process of making an accounting estimate). This Appendix provides further explanation about the nature of the inherent risk factors of estimation uncertainty, subjectivity and complexity, and their inter-relationships, in the context of making accounting estimates and depicting them in the financial statements.

### Estimation Uncertainty

4. Susceptibility to a lack of precision in measurement is often referred to in accounting frameworks as measurement uncertainty. Estimation uncertainty is defined in this ISA as susceptibility to an inherent lack of precision in measurement (i.e., it is inherent measurement uncertainty). It arises when the required monetary amount for a financial statement item that is recognized or disclosed in the financial statements cannot be measured with precision through direct observation of the cost or price. When direct observation is not possible, the next most precise alternative measurement strategy is to apply a method that reflects the best available knowledge about cost or price for the item on the relevant measurement basis, using observable data about relevant valuation attributes, unless a particular method or information is to be applied.

4A. However, constraints on the availability of such knowledge or data may limit the verifiability of such inputs to the measurement process and therefore limit the precision of measurement outcomes in these circumstances. Furthermore, most accounting frameworks acknowledge that there are practical constraints on the information that should be taken into account, when the cost of obtaining it would exceed the benefits. The lack of precision in measurement arising from these constraints is inherent because it cannot be eliminated from the measurement process. Accordingly, they are sources of estimation uncertainty. Other sources of measurement uncertainty that may occur in the measurement process are, at least in principle, capable of elimination if the method is applied appropriately and therefore would be sources of potential misstatement rather than estimation uncertainty.

4B When estimation uncertainty relates to uncertain inflows or outflows of economic benefits that will ultimately result from the underlying asset or liability, the outcome of these flows will only be observable after the date of the financial statements. Depending on the nature of the applicable measurement basis and on the nature, condition and circumstances of the financial statement item, this outcome may be directly observable before the financial statements are finalized or may only be directly observable at a later date. For some accounting estimates, there may be no directly observable outcome at all.

**Complexity**

8. Inherent complexity (i.e., the complexity inherent in the process of making an accounting estimate, before consideration of internal control) gives rise to inherent risk. Inherent complexity may arise when:

- The estimation process is influenced by multiple valuation attributes with multiple or non-linear relationships between them.
- Determining appropriate values for one or more valuation attributes requires multiple data sets.
- More assumptions are required in making the accounting estimate, or when there are correlations between the required assumptions
- The data used is inherently difficult to identify, capture, access or understand.

9. Such inherent complexity is often reflected in the complexity of the method and of the computational process or model used to apply it. For example, complexity in the model may reflect the need to apply probability-based valuation concepts or techniques, option pricing formulae or simulation techniques to predict uncertain future outcomes or hypothetical behaviors. Similarly, the computational process may require more data sources, multiple data sets to determine an amount for a valuation attribute or to support the making of an assumption or the application of sophisticated mathematical or statistical concepts.

9A. The greater the inherent complexity, the more likely it is that management will need to apply specialized skills or knowledge in making an accounting estimate, for example in relation to:

- Available valuation concepts and techniques that could be used in the context of the measurement basis and objectives or other requirements of the applicable financial reporting framework and how to apply those concepts or techniques;
- The underlying valuation attributes that may be relevant given the nature of the measurement basis and the nature, condition and circumstances of the financial statement items for which accounting estimates are being made; or
- Identifying available appropriate sources of data from internal sources (including from sources outside the general or subsidiary ledgers) or from external information sources, determining how to address potential difficulties in obtaining data from such sources or in maintaining its integrity in applying the method, or understanding the relevance and reliability of that data.

10. Inherent complexity relating to data may arise, for example, in the following circumstances:

(a) Data may be difficult to obtain when it relates to transactions that are not generally accessible. Even when such data is accessible, for example through an external information source, it may be difficult to understand the relevance and reliability of the data, unless the external information source discloses adequate information about the underlying data sources it has used and about any data processing that has been performed.

(b) Data reflecting an external information source's views about future conditions or events, which may be relevant in developing support for an assumption, may be difficult to understand without transparency about the rationale and information taken into account in developing those views.

(c) Certain types of data may be inherently difficult to understand because they require an understanding of technically complex business or legal concepts, such as may be required to properly understand data that comprises the terms of legal agreements about transactions involving complex financial instruments or insurance products.

**Subjectivity**

11. Inherent subjectivity (i.e., the subjectivity inherent in the process of making an accounting estimate, before consideration of internal control) reflects inherent limitations in the knowledge or data available about valuation attributes and how they would affect an item's price or cost. When availability of such knowledge or data is limited, the range of reasonably possible measurement outcomes is likely to be greater than when they are not limited, because the judgments made by reasonably knowledgeable and independent individuals in selecting the point estimate would likely diverge more.

13. When such limitations exist, the applicable financial reporting framework may reduce the degree of subjectivity by providing a required basis for making certain judgments. Such requirements may, for example, set explicit or implied objectives relating to measurement, disclosure, the unit of account, or the application of a cost constraint. The applicable financial reporting framework may also highlight the importance of such judgments through requirements for disclosures about those judgments.

14. Management judgment is generally needed in determining some or all of the following matters, which often involve subjectivity:

- To the extent not specified under the requirements of the applicable financial reporting framework, the appropriate valuation approaches, concepts, techniques and factors to use in the estimation method, having regard to available knowledge;
- To the extent valuation attributes are observable but there are various potential sources of data available, the appropriate sources of data to use;
- To the extent valuation attributes are not observable, the appropriate assumptions or range of assumptions to make, having regard to the best available data, including, for example, market views;
- The range of reasonably possible outcomes from which to select management's point estimate, and the relative likelihood that certain points within that range would be consistent with the objectives of the measurement basis required by the applicable financial reporting framework; and
- The selection of management's point estimate, and the related disclosures to be made, in the financial statements.

16. Making assumptions about future events or conditions involves the use of judgment, the difficulty of which varies with the extent to which those events or conditions are uncertain. The precision

with which it is possible to predict uncertain future events or conditions depends on the extent to which those events or conditions are determinable based on available knowledge, including knowledge of past conditions, events and related outcomes. The lack of precision also contributes to estimation uncertainty, as described above.

17. With respect to future outcomes, assumptions will only need to be made for those features of the outcome that are uncertain. For example, in considering the measurement of a possible impairment of a receivable for a sale of goods at the balance sheet date, the amount of the receivable may be unequivocally established and directly observable in the related transaction documents. What may be uncertain is the amount, if any, for loss due to impairment. In this case, assumptions may only be required about the likelihood of loss and about the amount and timing of any such loss.

18. However, in other cases, the amounts of cash flows embodied in the rights relating to an asset may be uncertain (for example, the amount of compensation for loss claimed in an ongoing litigation may be highly uncertain). In those cases, assumptions may have to be made about both the amounts of the underlying rights to cash flows and about potential losses due to impairment depending on the creditworthiness of the party against whom the claim is made.

19. Some uncertain outcomes may be relatively easy to predict with a high level of precision for an individual item. For example, the useful life of a production machine may be easily predicted if sufficient technical information is available about its average useful life. When it is not possible to predict a future outcome, such as an individual's life expectancy based on actuarial assumptions, with reasonable precision, it may still be possible to predict that outcome for a group of individuals with greater precision. Measurement bases may, in some cases, indicate a portfolio level as the relevant unit of account for measurement purposes, which may reduce inherent estimation uncertainty.

20. In other cases, it may be necessary to consider information about past conditions and events, together with current trends and expectations about future developments. Past conditions and events provide historical information from which repeating historical patterns of behavior relating to uncertain valuation attributes may be discerned and extrapolated in evaluating future outcomes. Such historical information may also indicate changing patterns of such behavior over time (cycles or trends). These may suggest that the underlying historical patterns of behavior have been changing in somewhat predictable ways that may also be extrapolated in evaluating future outcomes. Other types of information may also be available that indicate possible changes in historical patterns of such behavior or in related cycles or trends. Difficult judgments may be needed about the predictive value of such information.

21. The extent and nature (including the degree of subjectivity involved) of the judgments taken in making the accounting estimates may create opportunity for management bias in making decisions about the course of action that, according to management, is appropriate in making the accounting estimate. When there is also a high level of complexity or a high level of estimation uncertainty, or both, the risk of, and opportunity for, management bias may also be increased.

**Relationship of Estimation Uncertainty to Subjectivity and Complexity**

[This section is an update of paragraphs 5-7 of Appendix 2 in ED-540]

22. Estimation uncertainty gives rise to inherent variation in the possible methods, data sources and assumptions that could be used to make an accounting estimate. This gives rise to subjectivity, and hence, the need for the use of judgment in making the accounting estimate. Such judgments

are required in selecting the appropriate methods and data sources, in making the assumptions, and in selecting management's point estimate and related disclosures for inclusion in the financial statements. These judgments are made in the context of the recognition, measurement, presentation and disclosure requirements of the applicable financial reporting framework. However, because there are constraints on the availability of knowledge or information to support these judgments, they are subjective in nature.

23. Subjectivity in such judgments creates the opportunity for unintentional or intentional management bias in making them. Many accounting frameworks require that information prepared for inclusion in the financial statements should be neutral (i.e., that it should not be biased). Given that bias can, at least in principle, be eliminated from the estimation process, sources of potential bias in the judgments made to address subjectivity are sources of potential misstatement rather than sources of estimation uncertainty. When bias in making an accounting estimate is intentional, it is fraudulent in nature.

24. The inherent variation in the possible methods, data sources and assumptions that could be used to make an accounting estimate (see paragraph 22) also gives rise to variation in the possible measurement outcomes of the estimation process. The size of the range of reasonably possible measurement outcomes results from the degree of estimation uncertainty and is often referred to as the sensitivity of the accounting estimate. In addition to determining measurement outcomes, an estimation process also involves analyzing the effect of inherent variations in the possible methods, data sources and assumptions on the range of reasonably possible measurement outcomes (referred to as sensitivity analysis).

25. Developing a depiction of an accounting estimate for inclusion in the financial statements, which achieves faithful representation (i.e., complete, neutral and free from error), includes making appropriate judgments in selecting a management point estimate that is representative of the range of reasonably possible measurement outcomes and related disclosures that appropriately describe the estimation uncertainty. These judgments may themselves involve subjectivity, depending on the nature of the requirements in the applicable financial reporting framework that address these matters. For example, the applicable financial reporting framework may require a specific basis (such as a probability weighted average or a best estimate) for the selection of the management point estimate. Similarly, it may require specific disclosures or disclosures that meet specified disclosure objectives or additional disclosures that are required to achieve fair presentation in the circumstances.

26. Although an accounting estimate that is subject to a higher degree of estimation uncertainty may be less precisely measurable than one subject to a lower degree of estimation uncertainty, the accounting estimate may still have sufficient relevance for users of the financial statements to be recognized in the financial statements if a faithful representation of the item can be achieved. In some cases, estimation uncertainty may be so great that the recognition criteria in the applicable financial reporting framework are not met and the accounting estimate cannot be recognized in the financial statements. Even in these circumstances, there may still be relevant disclosure requirements, for example to disclose the point estimate or range of reasonably possible measurement outcomes and information describing the estimation uncertainty and constraints on achieving a faithful representation of the item. The requirements of the applicable financial reporting framework that apply in these circumstances may be specified to a greater or lesser degree. Accordingly, in these circumstances, there may be additional judgments that involve subjectivity to be made.

27. When estimation uncertainty is higher, it may involve more valuation attributes and more inter-relationships between them, and therefore more inherent complexity. If so, addressing it using an

appropriate method may also involve more complexity in the data used or valuation techniques applied.

**Appendix 3**

(Ref: Para. A155)

## Communications with Those Charged with Governance

Matters specific to significant accounting estimates that the auditor may consider communicating their views about to those charged with governance include:

(a) How management identifies transactions, other events and conditions that may give rise to the need for, or changes in, accounting estimates to be recognized or disclosed in the financial statements, and related disclosures.

(b) Risks of material misstatement.

(c) The relative materiality of the accounting estimates to the financial statements as a whole;

(d) Management's understanding (or lack thereof) regarding the nature and extent of, and the risks associated with, accounting estimates;

(e) Whether management has applied appropriate specialized skills or knowledge or engaged appropriate experts.

(f) The auditor's views about differences between the auditor's point estimate or range and management's point estimate.

(g) The auditor's views about the appropriateness of the selection of accounting policies related to accounting estimates and presentation of accounting estimates in the financial statements.

(h) Indicators of possible management bias.

(i) Whether there has been or ought to have been a change from the prior period in the methods for making the accounting estimates

(j) When there has been a change from the prior period in the methods for making the accounting estimate, why, as well as the outcome of accounting estimates in prior periods.

(k) Whether management's methods for making the accounting estimates, including when management has used a model, are appropriate in the context of the measurement objectives, the nature, conditions and circumstances, and other requirements of the applicable financial reporting framework.

(l) The nature and consequences of significant assumptions used in accounting estimates and the degree of subjectivity involved in the development of the assumptions;

(m) Whether significant assumptions are consistent with each other and with those used in other accounting estimates, or with assumptions used in other areas of the entity's business activities.

(n) When relevant to the appropriateness of the significant assumptions or the appropriate application of the applicable financial reporting framework, whether management's has the intent to carry out specific courses of action and has the ability to do so.

(o) 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.

(p) Whether the significant data and significant assumptions used by management in making the accounting estimates are appropriate in the context of the requirements of the applicable financial reporting framework.

(q) The relevance and reliability of information obtained from an external information source.

(r) Significant difficulties encountered when obtaining sufficient appropriate audit evidence relating to data obtained from an external information source or valuations performed by management or a management's expert.

(s) Significant differences in judgments between the auditor and management or a management's expert regarding valuations.

(t) The potential effects on the entity's financial statements of material risks and exposures required to be disclosed in the financial statements, including the estimation uncertainty associated with accounting estimates.

(u) The reasonableness of disclosures about estimation uncertainty in the financial statements.

(v) Whether management's decisions relating to the recognition, measurement, presentation and disclosure of the accounting estimates and related disclosures in the financial statements are in accordance with the applicable financial reporting framework.