

Auditing Complex Financial Instruments—Draft International Auditing Practice Statement 1012

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CONTENTS

	Paragraph
Scope of this IAPS	1–19
Nature of Financial Instruments Addressed by this IAPS	5–9
Types of Entities to which this IAPS Applies	10–13
Purpose and Risks of Using Complex Financial Instruments	14–17
Audit Considerations Relating to Complex Financial Instruments	18–19
Responsibilities of Management and Those Charged with Governance	20–28
Management’s Responsibilities for Presentation and Disclosure about Complex Financial Instruments	20–21
Management’s Use of Third-Party Expertise	22–28
Responsibilities of the Auditor	29–51
Professional Skepticism and Professional Judgment	30–31
Involving Those with Specialized Skills and Knowledge in the Audit	32–39
Fraud Risk Factors	40–43
Indicators of Management Bias	43
Significant Risks	44–51
Substantive Procedures to Respond to Significant Risks	49–51
Understanding the Entity and Its Environment, Including Its Internal Control, and Identifying and Assessing the Risks of Material Misstatement	52–65
The Role of the Internal Audit Function	61–63
Deficiencies in Internal Control	64–65
The Auditor’s Responses to Assessed Risks	66–75
Reliance on Control Activities	69–71
Dual-Purpose Tests	72
Substantive Procedures	73–75
Completeness and Accuracy of Recording of Complex Financial Instruments	76–86

Trade Confirmations and Clearing Houses	78–79
Reconciliations with Banks and Custodians	80–85
Substantive Procedures Relating to Completeness and Accuracy of Recording of Complex Financial Instruments	86
Valuation of Complex Financial Instruments	87–124
Fair Value Hierarchy	88–89
Management’s Method for Valuing Its Complex Financial Instruments	90–112
Management’s Assumptions	92–93
Sources of Evidence to Support Management’s Assumptions	94–100
Using Models	101–102
Effects of Inactive Markets	103–107
Management’s Use of Sensitivity Analysis	108–109
Considerations Unique to Valuing Financial Liabilities	110–112
Substantive Procedures Relating to Valuation of Complex Financial Instruments	113–124
Evaluating Whether the Valuation Method, Including Models, Used Is Appropriate in the Circumstances	115–120
Evaluating Whether the Assumptions and Inputs Used by Management Are Reasonable	121–124
Presentation and Disclosure of Complex Financial Instruments	125–148
Disclosures in the Financial Statements	125–135
Categories of Disclosures	128–135
Presentation of Financial Statements	136–137
Substantive Procedures Relating to Presentation and Disclosure of Complex Financial Instruments	138–148
Evaluating the Entity’s Presentation of Financial Statements	138
Evaluating the Reasonableness and Adequacy of Disclosures	139–145
Estimation Uncertainty and Significant Risks	146–148
Evaluating Audit Evidence	149–161
Evaluating the Overall Results of Valuations	149–154
Evidence Considerations Relating to Management’s Use of Third-Party Expertise	155–157
Going Concern	158–160
Written Representations	161

Forming an Opinion and Reporting on Financial Statements	162–165
Evaluating Misstatements	162–163
Inability to Obtain Sufficient Appropriate Audit Evidence	164
Emphasis of Matter Paragraphs and Other Matter Paragraphs	165
Communicating with Those Charged with Governance and Others	166–168
Communications with Regulators and Others	168
Appendix 1: Glossary of Terms	
Appendix 2: Examples of Possible Internal Controls Relating to Complex Financial Instruments that May Exist at an Entity	
Appendix 3: Risks to which Entities May Be Exposed through Their Use of Complex Financial Instruments	
Appendix 4: Additional Information about Broker Quotes and Pricing Services	

<p>International Auditing Practice Statement (IAPS) 1012, <i>Auditing Complex Financial Instruments</i>, should be read in the context of the <i>Preface to the International Standards on Quality Control, Auditing, Review, Other Assurance and Related Services</i>, which sets out the application and authority of IAPSs.</p>
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Scope of this IAPS

1. The purpose of this International Auditing Practice Statement (IAPS) is to provide guidance to the auditor dealing with complex financial instruments, to assist the auditor in:
 - (a) Obtaining an understanding of the entity, including internal control relevant to the audit, sufficient to identify and assess the risks of material misstatement;
 - (b) Designing and performing further audit procedures responsive to those risks;
 - (c) Evaluating the audit evidence obtained from those procedures;
 - (d) Forming an opinion and reporting on financial statements in light of the audit evidence obtained; and
 - (e) Communicating relevant matters about an entity's complex financial instruments to those charged with governance and others.
2. Certain ISAs may be particularly relevant to audits of complex financial instruments. For example:
 - ISA 540¹ deals with the auditor's responsibilities relating to auditing accounting estimates, including accounting estimates related to complex financial instruments measured at fair value; and
 - ISA 315² and ISA 330³ deal with identifying and assessing risks of material misstatement and responding to those risks.

Although the requirements of these and certain other ISAs are highlighted, reading the IAPS is not a substitute for reading the ISAs themselves and there may be other requirements that are relevant.
3. Certain financial reporting frameworks require the entity to measure complex financial instruments at fair value, while other financial reporting frameworks require disclosures of fair value information in the notes to the financial statements when financial instruments are carried at amortized cost. The guidance in this IAPS applies to complex financial instruments measured or disclosed at fair value.
4. This IAPS is designed to be applicable to the audits of large and small entities, including small- and medium-sized entities (SMEs) that have complex financial instruments, and financial and non-financial entities.

¹ ISA 540, *Auditing Accounting Estimates, Including Fair Value Accounting Estimates, and Related Disclosures*

² ISA 315, *Identifying and Assessing the Risks of Material Misstatement through Understanding the Entity and Its Environment*

³ ISA 330, *The Auditor's Responses to Assessed Risks*

Nature of Financial Instruments Addressed by this IAPS

5. Different definitions of financial instruments may exist among financial reporting frameworks. International Financial Reporting Standards (IFRS) define a financial instrument as a contract that gives rise to a financial asset of one entity and a financial liability or equity instrument of another entity.⁴ Financial instruments may be cash, the equity of another entity, the right to receive or deliver cash or exchange financial assets or liabilities, and certain contracts settled in an entity's own equity instruments. This definition encompasses a wide range of financial instruments from simple loans and deposits to complex derivatives and structured products.
6. This IAPS focuses on audit considerations relating to those financial instruments, both financial assets and financial liabilities that are more complex than, for example, a simple loan, deposit or spot foreign exchange transaction. In particular, this IAPS does not deal with simple financial instruments such as cash, trade accounts receivable and trade accounts payable. Sometimes financial instruments that ordinarily are relatively easy to value become complex because of particular circumstances, for example, instruments for which the market has become inactive, necessitating the use of a model for valuation.
7. The complexity of a financial instrument is influenced by:
 - (a) The characteristics of the instrument – Whether it is actively traded, it is a compound financial instrument, or has an embedded derivative. Structured products combine a number of financial instruments to achieve a desired overall effect, thereby becoming more complex;
 - (b) The variability of the future cash flows – Whether the contractual terms specific the amount and timing of cash flows that arise from a financial instrument. Uncertainty of amount and timing often give rise to complexity of financial instruments, in terms of their risks, since the higher the variability of cash flows with a financial instrument to changes in market conditions, the more complex the fair value measurement of the financial instrument is likely to be.

The complexity of the financial instrument influence the auditor's approach to identifying and assessing the risks of material misstatement associated with complex financial instruments and to designing and implementing responses to address these risks in accordance with the ISAs. In addition, the availability of information to support valuation of a complex financial instrument, whether due to the unobservability of inputs to its valuation or the effects of inactive markets, may also have implications for the auditor's procedures.

8. Originators of complex financial instruments are continuously developing new products and as a result it is not possible to provide an exhaustive list of all such instruments. For the purposes of this IAPS, complex financial instruments include, but are not limited to:
 - Derivatives (including forward contracts, swaps, caps, floors, swaptions, credit default options, credit default swaps, and other option contracts);

⁴ International Accounting Standard (IAS) 32, *Financial Instruments: Presentation*

- Structured products (for example, Collateralized Debt Obligations (CDOs) and Mortgage Backed Securities (MBSs)); and
- Structured debt and repurchases.

Generally such instruments are required to be presented in the financial statements at fair value. Derivatives and structured products become more complex when they have characteristics that are both linear and non-linear or are comprised of a combination of individual complex financial instruments. A Glossary of Terms is included as Appendix 1 to define some of these instruments and other key terms.

9. It is important to note, however, that contracts such as agreements entered into by the entity with its major suppliers and other service providers may contain embedded derivatives. An example is a contract for the supply of electricity entered into by a utilities distribution company with its supplier, which includes an option that affects the purchase price of electricity. In such cases, the terms of the contract may make it necessary for the entity to measure or disclose a complex financial instrument associated with the contract, even though the entity may not view the transaction as creating a financial instrument. The complexities of the contract terms may make it difficult to identify such embedded derivatives.

Types of Entities to which this IAPS Applies

10. The general principles applicable to auditing complex financial instruments are applicable to all entities. The use of complex financial instruments varies by entity. For example, some entities are market makers and may take leveraged proprietary positions in complex financial instruments to earn profits. Other entities may use financial instruments to earn yield on cash or to hedge exposures, as discussed in paragraphs 14–15. The guidance in this IAPS is intended to be helpful for audits of entities with complex financial instruments ranging from:
 - Entities with high levels of trading and use of complex financial instruments (for example, banks with complex dealing rooms, non-financial sector entities with treasury departments); to
 - Entities with relatively few transactions involving complex financial instruments (for example, an entity that wishes to hedge a relatively low number of foreign currency transactions or obtains a few instruments for investment purposes).
11. In those entities with relatively few transactions involving complex financial instruments:
 - Management and those charged with governance may have only a limited understanding of complex financial instruments and how they affect the business;
 - The entity may only have a few different types of instruments with little or no interaction between them;
 - There is unlikely to be a complex control environment; and
 - Management may engage third parties to value such instruments.

In such circumstances, some aspects of the guidance will be more relevant than others.

12. For example, when an entity has relatively few transactions involving complex financial instruments, it may be relatively easy for the auditor to obtain an understanding of the entity's objectives for using the financial instruments, the characteristics of the instruments and how they are controlled. In such circumstances, much of the audit evidence is likely to be substantive in nature and third-party confirmations are likely to provide evidence in relation to both the completeness and accuracy of the recording of the transactions. However, the knowledge and experience of management and those charged with governance is an important element of the control environment. The use of complex financial instruments without relevant expertise within the entity may result in the entity unknowingly assuming a significant amount of risk (e.g., business, reputational, liquidity, etc.), and increase the risks of material misstatement in the financial statements.
13. Entities with a large volume of trading and use of complex financial instruments may have a more complex control environment and the auditor may be more likely to test controls in obtaining evidence about the completeness and accuracy of the recording of the transactions. In such circumstances, the auditor is also likely to use the work of management's experts and may need to evaluate the entity's own models for valuations of complex financial instruments at period end.

Purpose and Risks of Using Complex Financial Instruments

14. More complex financial instruments, such as those arising from derivatives contracts, generally exist to do two things:
 - Change an existing risk profile to which an entity is exposed (i.e., for hedging purposes). This includes:
 - The forward purchase or sale of currency to fix a future exchange rate;
 - Converting future interest rates to fixed or floating through the use of swaps; and
 - The purchase of option contracts to provide an entity with protection against a particular price movement, including contracts which may contain embedded derivatives; and
 - Enable an entity to take a risk position to benefit from long term investment returns or from short term market movements (i.e., for trading purposes).

In addition, a complex financial instrument arising from a derivative contract may be a financial asset or a financial liability at different times and subject to different circumstances and can move from a financial asset to a financial liability in short order. Such volatility can also dramatically affect an entity's credit risk exposure to its counterparties.

15. The use of complex financial instruments can reduce exposures to certain business risks, for example changes in exchange rates, interest rates and commodity prices, or a combination of those risks. On the other hand, the inherent complexities also may result in increased business risk, which may in turn increase risks of material misstatement and present new challenges to management and auditors.

16. The use of complex financial instruments has become more commonplace and the accounting requirements to provide fair value and other information about them in financial statement presentations and disclosures are expanding. Because of these developments, management and those charged with governance may not:
 - Fully understand the risks of using complex financial instruments;
 - Have the expertise to value them appropriately in accordance with the applicable financial reporting framework; or
 - Have sufficient controls in place over financial instrument activities.
17. Complex financial instruments are susceptible to an inherent lack of precision in their measurement, known as estimation uncertainty. The nature and reliability of information available to support the valuation of complex financial instruments varies widely, which thereby affects the degree of estimation uncertainty associated with their measurement. The degree of estimation uncertainty affects, in turn, the risks of material misstatement of complex financial instruments, including their susceptibility to unintentional or intentional management bias. The importance of disclosures regarding the basis of measurement increases as the measurement uncertainty of the financial instruments increases.

Audit Considerations Relating to Complex Financial Instruments

18. In an audit of financial statements in accordance with ISAs, risks of material misstatement are identified and assessed at the assertion level for classes of transactions, account balances and disclosures⁵ because doing so directly assists in determining the nature, timing, and extent of further audit procedures necessary to obtain sufficient appropriate audit evidence. This IAPS focuses on the assertions⁶ on which the entity is likely to focus its control objectives in order to reduce the risks of material misstatement related to complex financial instruments, which are:
 - Completeness and accuracy of recording;
 - Valuation; and
 - Presentation and disclosure, including classification in the financial statements.Guidance relating to these three assertions is addressed further in subsequent sections. Other assertions relating to existence and occurrence, rights and obligations and cut-off will affect the design of the auditor's procedures relating to complex financial instruments, but are not covered in detail in this IAPS.
19. This IAPS also highlights considerations that may be particularly relevant in audits of complex financial instruments, including:
 - Applying professional skepticism and professional judgment (see paragraphs 30–31);

⁵ ISA 315, paragraph 25

⁶ ISA 315, paragraph A111, lists assertions used by the auditor to consider the different types of potential misstatements.

- Using specialized skills or knowledge on the audit engagement (see paragraphs 32–39);
- Identifying fraud risk factors relating to complex financial instruments (see paragraphs 40–43);
- Identifying significant risks relating to complex financial instruments and designing further procedures to respond to those risks (see paragraphs 44–51);
- Identifying, assessing, and responding to risks of material misstatement (see paragraphs 52–148);
- Obtaining sufficient appropriate audit evidence relating to complex financial instruments and forming an opinion and reporting on the financial statements (see 149–165); and
- Communicating with those charged with governance and others (see paragraphs 166–168).

Responsibilities of Management and Those Charged With Governance

Management’s Responsibilities for Presentation and Disclosure about Complex Financial Instruments

20. Management’s responsibilities include the preparation of the financial statements in accordance with the applicable financial reporting framework.⁷ Most frameworks require the disclosure of quantitative and qualitative information (including accounting policies) relating to complex financial instruments. The accounting requirements to provide fair value and other information about them in financial statement presentations and disclosures are extensive in most financial reporting frameworks.
21. In representing that the financial statements are in accordance with the applicable financial reporting framework, management implicitly or explicitly makes assertions regarding the recognition, measurement, presentation and disclosure of the various elements of financial statements and related disclosures. Assertions about presentation and disclosure encompass:
 - (a) Occurrence and rights and obligations—disclosed events, transactions, and other matters have occurred and pertain to the entity.
 - (b) Completeness—all disclosures that should have been included in the financial statements have been included.
 - (c) Classification and understandability—financial information is appropriately presented and described, and disclosures are clearly expressed.
 - (d) Accuracy and valuation—financial and other information are disclosed fairly and at appropriate amounts.

⁷ See paragraphs 4 and A2 of ISA 200, *Overall Considerations of the Independent Auditor and the Conduct of an Audit in Accordance with International Standards on Auditing*.

Management's Use of Third-Party Expertise

22. The preparation of an entity's financial reporting, including the valuation of complex financial instruments and the preparation of financial statement disclosures relating to these instruments, may require expertise that management does not possess. In such cases, management often engages third-party experts to provide assistance with valuation of its complex financial instruments.
23. Where such expertise is in a field other than accounting or auditing, such as valuation, individuals or organizations possessing such expertise who are used by the entity to assist it in preparing the financial statements are referred to as management's experts.⁸ Management's experts may be employed by the entity (management's internal experts, for example, quantitative staff) or engaged by the entity (management's external experts, for example, third-party valuation specialists). The use of one or more management's experts may be fairly common, regardless of the size of the entity.
24. The use of a management's expert does not relieve management or those charged with governance of their responsibilities for the preparation of the financial statements. In measuring the entity's complex financial instruments, management may support its valuation with information from internal and external sources, the relevance and reliability of which will vary. Management's experts supplement, but do not replace, management's own process for valuation. In particular, it will be necessary for management to understand the assumptions and inputs used by the management's expert in valuing the complex financial instruments to determine whether these assumptions are appropriate, and the controls in place at a service organization. If management is unable to obtain this understanding, the auditor may not be able to obtain sufficient appropriate audit evidence to conclude about the reasonableness of the valuation of the complex financial instruments or the effectiveness of the controls at the service organization.
25. For example, individuals such as brokers and organizations such as pricing services (see paragraphs 97–99 and Appendix 4) may possess expertise in the application of models to estimate the fair value of complex financial instruments for which there is no observable market. If the broker or pricing service makes an estimate or provides an indicative price which the entity uses in valuing its complex financial instruments, the broker or pricing service would be considered a management's expert. If the third party merely provides price data regarding private transactions not otherwise available to the entity which the entity uses in its own estimation methods, such information, if used as audit evidence, is not considered to be evidence produced by an expert.
26. Entities may also use service organizations⁹ (for example asset managers) to initiate the purchase or sale of complex financial instruments or maintain records of transactions for the

⁸ ISA 500, *Audit Evidence*, establishes requirements for the auditor if information to be used as audit evidence has been prepared using the work of a management's expert.

⁹ ISA 402, *Audit Considerations Relating to an Entity Using a Service Organization*, establishes requirements for the auditor to obtain sufficient appropriate audit evidence when an entity uses the services of one or more service organizations.

entity. Some entities may be dependent on these service organizations to provide the basis of reporting for the complex financial instruments held.

27. The use of service organizations may strengthen controls over complex financial instruments. For example, a service organization's personnel may have more experience with complex financial instruments than the entity's management or may have more robust internal control over financial reporting. The use of the service organization also may allow for greater segregation of duties. On the other hand, the use of a service organization may increase risk because it may have a different control environment that is not in line with the entity's accounting policies or process transactions at some distance from the entity.
28. The use of a management's expert or service organization may have implications for the auditor, including the auditor's decision whether to involve persons with specialized skills or knowledge (see paragraphs 32–39) and the auditor's procedures to evaluate the sufficiency and appropriateness of evidence to support the complex financial instruments measured or disclosed in the financial statements (see paragraphs 155–157).

Responsibilities of the Auditor

29. The purpose of an audit, including audit work on complex financial instruments, is not to provide assurance on the adequacy of the entity's risk management related to these instruments, or the controls over related activities. To avoid any misunderstanding of the auditor's responsibility in this regard, the auditor may discuss with management and those charged with governance the nature and extent of the audit work related to complex financial instruments.

Professional Skepticism and Professional Judgment

30. ISA 200 establishes requirements and provides guidance for the auditor on planning and performing an audit with professional skepticism and exercising professional judgment throughout the audit.¹⁰ Professional skepticism is necessary to the critical assessment of audit evidence. This includes questioning contradictory audit evidence and the reliability of documents and responses to inquiries and other information obtained from management and those charged with governance. It also includes consideration of the sufficiency and appropriateness of audit evidence obtained in the light of the circumstances, for example, in the case where fraud risk factors exist and a single document, of a nature that is susceptible to fraud, is the sole supporting evidence for a material financial statement amount. Maintaining professional skepticism requires an ongoing questioning of whether the information and audit evidence obtained suggests that a material misstatement due to fraud may exist or whether there are circumstances or conditions that exist that increase the susceptibility of accounting estimates to possible management bias.
31. Professional judgment is essential to the proper conduct of an audit and informed decisions cannot be made without the application of relevant knowledge and experience to the facts and circumstances. The nature and reliability of information available to support valuation of

¹⁰ ISA 200, paragraphs 15-16 and A18-A27

complex financial instruments varies depending on the observability of inputs to its measurement, which is influenced by the nature of the market (e.g., the level of market activity and whether it is through an exchange or over-the-counter (OTC)). Application of professional judgment by the auditor increases in importance with the complexity of financial instruments, and is necessary in particular regarding decisions about:

- Materiality¹¹ relating to the financial statements as a whole and risk of material misstatement arising from the entity's complex financial instruments.
- Evaluating whether sufficient appropriate audit evidence has been obtained, which can be particularly challenging in inactive markets or when entity-developed models are used.
- Evaluating management's judgments in applying the entity's applicable financial reporting framework, in particular management's choice of models, use of assumptions in valuation models, and addressing circumstances in which the auditor's judgments and management's judgments differ.
- Drawing conclusions based on the audit evidence obtained, for example assessing the reasonableness of valuations prepared by management's experts and evaluating whether disclosures in the financial statement achieve fair presentation.

Involving Those with Specialized Skills and Knowledge in the Audit

32. In planning the audit, the auditor is required to ascertain the nature, timing and extent of resources necessary to perform the audit engagement.¹² The challenges inherent in auditing complex financial instruments mean that there may be areas of the audit that require particular skills and expertise in order for the auditor to understand the risks of material misstatement associated with the auditing of such instruments, the understanding and testing of related information technology (IT) controls (since complex financial instruments often require complex systems to control them), and to obtain sufficient appropriate audit evidence related to the valuation of complex financial instruments.
33. In particular, ISA 540¹³ requires the auditor to consider whether, in order to obtain sufficient appropriate audit evidence, specialized skills or knowledge are required to determine:
 - (a) Whether management has appropriately applied the requirements of the applicable financial reporting framework relevant to the accounting estimate;
 - (b) Whether the methods for making the accounting estimates are appropriate and have been applied consistently, and whether changes, if any, in accounting estimates or in the method for making them from the prior period are appropriate in the circumstances; and

¹¹ ISA 320, *Materiality in Planning and Performing an Audit*, requires the auditor to determine materiality for the financial statements as a whole and performance materiality for purposes of assessing the risks of material misstatement and determining the nature, timing and extent of further audit procedures.

¹² ISA 300, *Planning an Audit of Financial Statements*, paragraph 8(e)

¹³ ISA 540, paragraph 14

- (c) Which procedure(s) to undertake to appropriately respond to the assessed risks of material misstatement.
34. Specialized skills or knowledge may be needed to help plan and perform audit procedures, especially when:
- The financial instruments are complex;
 - The entity is engaged in active trading of complex financial instruments;
 - Management has used a management's expert in valuing complex financial instruments (see paragraphs 22–28);
 - The valuations of the complex financial instruments are based on pricing models; Non-financial systems are used to record and disclose the complex financial instruments, including information about risks and uncertainties associated with the entity's financial instrument activities;
 - The applicable financial reporting framework is complex, including circumstances where there are areas known to be subject to differing interpretation or practice is inconsistent or developing; or
 - The auditor's risk assessment procedures have identified significant risks relating to complex financial instruments (see paragraphs 44–48).
35. When auditing complex financial instruments, specialized skills and knowledge may be needed to obtain an understanding of:
- The operating characteristics and risk profile of the industry in which the entity operates;
 - The structure of complex financial instruments used by the entity, and their characteristics, including their level of complexity;
 - The legal, tax and accounting implications resulting from the complex financial instruments, including whether the contracts are enforceable by the entity;
 - The entity's information system for complex financial instruments, including any relevant services provided by a service organization (see paragraphs 26–27). This may include, for example, specialized skills or knowledge about computer applications when significant information about those complex financial instruments is transmitted, processed, maintained or accessed electronically;
 - The methods of valuation of the complex financial instruments, for example, when fair value is determined by a pricing model ("marked to model"), or when management has a choice of models; and
 - The requirements of relevant legislation, regulations and the applicable financial reporting framework for financial statement assertions related to complex financial instruments.
36. When such a person's expertise is in auditing and accounting, regardless of whether the person is from within or external to the firm, this person is considered to be part of the

engagement team and is subject to the requirements of ISA 220. When such a person's expertise is in a field other than accounting or auditing, such person is considered to be an auditor's expert, and the provisions of ISA 620¹⁴ apply.

37. ISA 620 explains that distinguishing between specialized areas of accounting or auditing, and expertise in another field, will be a matter of professional judgment, but notes the distinction may be made between expertise in methods of accounting for complex financial instruments (accounting and auditing expertise) and expertise in complex modeling for the purpose of valuing complex financial instruments (expertise in a field other than accounting or auditing).¹⁵ Accordingly, more than one individual or organization with specialized skills may be involved in order to assist in various stages of the audit.
38. Market conditions may also lead to the need for the auditor to make use of a person with specialized skills or knowledge where previously it was not considered necessary. For example, when markets have become inactive and market price information is unavailable, the auditor may use a person with different expertise than one who was used previously in certain circumstances, since valuation methods are changed to become more complicated, such as by switching to using pricing models rather than using observable market prices.
39. The nature and use of particular types of complex financial instruments, the complexities associated with their valuation and disclosure, and market conditions may also lead to a need for the engagement team to consult¹⁶ with other professionals, from within or outside the firm, with relevant technical accounting or auditing expertise and experience. In addition, if not otherwise required¹⁷ to do so, the auditor may consider it appropriate to appoint an engagement quality control reviewer to provide an objective evaluation of the significant judgments made by the engagement team and the conclusions reached in formulating the opinion, taking into account factors such as:
 - The capabilities and competence of the engagement team;
 - The attributes of the complex financial instruments used by the entity;
 - The identification of unusual circumstances or risks in the engagement, as well as the need for professional judgment, particularly with respect to materiality and significant risks; or
 - Market conditions.

¹⁴ ISA 620, *Using the Work of an Auditor's Expert*

¹⁵ ISA 620, paragraph A2

¹⁶ ISA 220, paragraph 18(b), requires the engagement party to be satisfied that members of the engagement team have undertaken specific consultation during the course of the engagement, both within the engagement team and between the engagement team and others at the appropriate level within or outside the firm.

¹⁷ International Standard on Quality Control (ISQC) 1, *Quality Control for Firms that Perform Audits and Reviews of Financial Statements, and Other Assurance and Related Services Engagements*, establishes requirements for firms to ensure engagement quality control reviews are conducted for audits of financial statements for listed entities. ISQC 1 also requires firms to set out criteria against which all other audits and reviews of historical financial statements are evaluated to determine whether an engagement quality control review should be performed.

Fraud Risk Factors

40. ISA 240 includes requirements for the auditor to obtain information for use in identifying the risks of material misstatement due to fraud.¹⁸ Fraudulent financial reporting often involves management override of controls that otherwise may appear to be operating effectively. This may include inappropriately adjusting assumptions and changing judgments used to estimate account balances, for example using assumptions for fair value accounting estimates, including complex financial instruments, that are inconsistent with observable marketplace assumptions. In inactive markets, the increased use of models and lack of market comparisons may present opportunities for manipulation.
41. Incentives for fraudulent financial reporting by employees may exist where incentive compensation schemes are dependent on returns made from the use of complex financial instruments and the complexity of the instruments and related transactions may make it difficult to monitor the quality of the returns.
42. When financial market conditions are difficult, this may give rise to increased incentives for management or employees to engage in fraudulent financial reporting: to protect personal bonuses, to hide management error, to avoid breaching borrowing limits or to avoid reporting catastrophic losses. For example, at times of market instability, unexpected losses may arise through failure to protect the entity from extreme fluctuations in market prices, from unanticipated weakness in asset prices, through trading misjudgments, or for other reasons. In addition, financing difficulties create pressures on management who are concerned about the solvency of the business.

Indicators of Management Bias

43. ISA 540 requires the auditor to review the judgments and decisions made by management in the making of accounting estimates to identify whether there are indicators of possible management bias and to document any indicators noted.¹⁹ The susceptibility to management bias increases with the subjectivity of the valuation. For example, management may tend to ignore observable marketplace assumptions or inputs and instead use their own internally-developed model if the model yields more favorable results. Even without fraudulent intent, there may be a natural temptation to bias judgments towards the most favorable end of what may be a wide spectrum, rather than the point in the spectrum that might be considered to be most consistent with the applicable financial reporting framework. Although some form of management bias is inherent in subjective decisions relating to the valuation of complex financial instruments, when there is intention to mislead, management bias is fraudulent in nature.

Significant Risks

44. As part of the risk assessment process, ISA 315 requires the auditor to determine whether any of the risks identified are, in the auditor's judgment, significant risks.²⁰ If the auditor has

¹⁸ ISA 240, *The Auditor's Responsibilities Relating to Fraud in an Audit of Financial Statements*

¹⁹ ISA 540, paragraphs 21 and 23

²⁰ ISA 315, paragraph 27

determined that a significant risk exists, the auditor is required to obtain an understanding of the entity's controls, including control activities, relevant to that risk.²¹ When the auditor has determined that an assessed risk of material misstatement at the assertion level is a significant risk, the auditor is required to perform substantive procedures that are specifically responsive to that risk.²² Substantive procedures to respond to significant risks are described further in paragraphs 45–51.

45. Examples of circumstances that may lead the auditor to determine that a significant risk exists relating to complex financial instruments include:
- Whether there is high estimation uncertainty related to the valuation of complex financial instruments (for example, those with unobservable inputs (see paragraphs 88–89)). Lack of proper controls over financial instrument activities. If an entity engages in a high volume of financial instrument transactions and does not have a strong control environment, this will constitute a significant risk. However, complex financial instruments could represent a significant risk even if the entity has a strong control environment. Complex requirements in the applicable financial reporting framework relating to measurement and disclosure of complex financial instruments, and the level of management judgment required to properly apply those requirements.
 - Lack of sufficient evidence to support management's valuation of its complex financial instruments.
 - Lack of management understanding of its complex financial instruments or expertise necessary to value such instruments properly, including the ability to determine whether valuation adjustments to valuations from models are needed.
 - The significance of valuation adjustments made to model outputs when the applicable financial reporting framework requires or permits such adjustments.
46. Particular difficulties may develop where there is severe curtailment or even cessation of trading in particular complex financial instruments. In these circumstances, complex financial instruments that have previously been valued using market prices may need to be valued on a mark to model basis, and changing the manner in which the complex financial instruments are valued may be a difficult process for management, in particular when management does not possess expertise in modelling.
47. Changing market conditions are likely to be challenging for those entities that are engaged in trading complex financial instruments or are highly leveraged and, in extreme circumstances, may lead to potential systemic issues raising concerns over the potential implications on management's use of the going concern assumption.²³

²¹ ISA 315, paragraph 29

²² ISA 330, paragraph 21

²³ See ISA 570, *Going Concern*. Management's assessment of the entity's ability to continue as a going concern involves making a judgment, at a particular point in time, about inherently uncertain future outcomes or events or conditions.

48. Where the auditor determines that the high estimation uncertainty related to the valuation of complex financial instruments gives rise to a significant risk, ISA 540 requires the auditor to perform substantive procedures and evaluate the adequacy of the disclosure of their estimation uncertainty.²⁴

Substantive Procedures to Respond to Significant Risks

49. ISA 540 requires the auditor to undertake additional procedures when significant risks have been identified. The auditor is required to evaluate the following:²⁵
- (a) How management has considered alternative assumptions or outcomes, and why it has rejected them, or how management has otherwise addressed estimation uncertainty in making the accounting estimate.
 - (b) Whether the significant assumptions used by management are reasonable.
 - (c) Where relevant to the reasonableness of the significant assumptions used by management or the appropriate application of the applicable financial reporting framework, management's intent and ability to do so.
50. If, in the auditor's judgment, management has not adequately addressed the effects of estimation uncertainty on the accounting estimates that give rise to significant risks, the auditor is required, if considered necessary, to develop a range with which to evaluate the reasonableness of the accounting estimate.²⁶ Additional procedures relating to the evaluation of the adequacy of disclosures are described in paragraphs 139–148.
51. An assumption may be deemed to be significant if a reasonable variation in the assumption would materially affect the measurement of the complex financial instrument. Management may have considered alternative assumptions or outcomes by performing a sensitivity analysis (see paragraphs 108–109). The auditor's considerations in evaluating assumptions made by management are described in paragraphs 121–124.

Understanding the Entity and Its Environment, Including Its Internal Control, and Identifying and Assessing the Risks of Material Misstatement

52. ISA 315 establishes requirements for the auditor to understand the entity and its environment, including its internal control. Obtaining an understanding of the entity and its environment, including the entity's internal control, is a continuous, dynamic process of gathering, updating and analyzing information throughout the audit.²⁷ The understanding establishes a frame of reference within which the auditor plans the audit and exercises professional judgment throughout the audit. Because the nature and extent of financial instrument transactions varies by entity, and depends upon whether the entity is an originator of, or investor in, complex financial instruments, the control environment at each entity will be unique. Appendix 2

²⁴ ISA 540, paragraphs 11, 15 and 20

²⁵ ISA 540, paragraph 15

²⁶ ISA 540, paragraph 16

²⁷ ISA 315, paragraph A1

describes internal controls that may exist in an entity that deals in a high volume of financial instrument transactions.

53. The process of obtaining an understanding of the entity and its environment relating to complex financial instruments, including relevant controls, assists the auditor in identifying and assessing the risks of material misstatement in the financial statements and designing audit procedures in response to those risks. The nature and extent of internal control that exists at an entity will influence the auditor's determination of the balance between tests of controls and substantive procedures, as discussed in paragraphs 66–68. As noted in paragraph 45, if an entity engages in a high volume of financial instrument transactions and does not have a strong control environment, this may constitute a significant risk, which in turn affects the extent of the auditor's procedures and the auditor's ability to obtain sufficient appropriate audit evidence. Failure of management to design an appropriate control environment may also constitute a deficiency in internal control (see paragraphs 64–65).
54. Due to the complex nature of certain financial instruments, it is important that the auditor understand the instruments in which the entity has invested or to which it is exposed, including the purpose for which financial instruments are transacted and to what risks their use exposes the entity. This understanding is important because the characteristics of complex financial instruments can be such that they obscure certain elements of risk and exposure. An understanding of the characteristics of financial instruments can help an auditor to identify whether important aspects of a transaction are missing or inaccurately recorded, whether a valuation appears appropriate and whether the risks inherent in them are fully understood and managed by the entity.
55. Examples of matters that the auditor may consider when obtaining an understanding of the entity's financial instruments may include:
 - What financial instruments the entity is exposed to;
 - What they are used for;
 - Their exact terms and characteristics so that their implications can be fully understood and, in particular where transactions are linked, the overall impact; and
 - How they fit in to the entity's overall risk management strategy.

Inquiries of the risk management function, if such a function has been established by the entity, may be particularly relevant to the auditor's understanding.

56. The auditor's risk assessment and the nature, timing and extent of audit procedures relating to financial instruments depends on a number of factors addressed throughout this IAPS, including:
 - The auditor's understanding of the entity and its environment, including the auditor's consideration of the entity's control environment, risk assessment process, information systems, control activities, and monitoring of controls (see Appendix 2);
 - Whether the auditor has identified significant risks related to financial instruments (see paragraphs 44–48); and

- The requirements in the applicable financial reporting framework for presentation and disclosure of financial instruments (see paragraphs 125–137).
57. The nature, timing and extent of the auditor’s procedures will also depend on the susceptibility to misstatement associated with complex financial instruments. Examples of considerations that might affect the auditor’s assessment of the risks of material misstatement relating to complex financial instruments include:
- Whether the entity has adequate governance structures and control processes to ensure that all complex financial instruments are measured at fair value both for risk management and financial reporting purposes that are consistently applied across the entity and integrated with risk measurement and management processes;
 - Whether management ensures that policies for categorizing complex financial instruments in financial reporting are consistent, insofar as possible, for accounting, regulatory and management purposes;
 - Whether management ensures that the entity’s policies are strictly aligned with its valuation capabilities, and adhered to by those employees responsible for the entity’s valuations;
 - Whether the entity has in place sound processes for the design and validation of methodologies used to produce valuations;
 - Whether the entity has maximized the use of relevant and reliable inputs and has incorporated all other important information so that valuations of complex financial instruments are as reliable as possible;
 - Whether the entity has a rigorous and consistent process to determine valuation adjustments for risk management, regulatory and financial reporting purposes, where appropriate;
 - Whether the entity has valuation and risk management processes that explicitly assess valuation uncertainty and that assessments of all material valuation uncertainty are included in the information communicated to those charged with governance;
 - Whether the entity has control procedures in place for making investment decisions, including whether significant decisions are communicated with those charged with governance;
 - The strength of the entity’s control environment;
 - Economics and business purpose of the entity’s financial instrument activities, including the level of due diligence associated with particular complex financial instruments and other contracts;
 - Whether the entity has adequate capacity, including during periods of stress, and ability to establish and verify valuations for the complex financial instruments in which it is engaged, including whether there is appropriate segregation of duties

- between those responsible for the complex financial instrument and those responsible for determining the valuation of the complex financial instrument;
- Management's track record for assessing the risks of particular instruments; and
 - The degree of complexity of a financial instrument's features, including whether the transaction giving rise to the complex financial instrument involved the exchange of cash; and whether the complex financial instrument is traded on national exchanges, across borders, or not at all.
58. Poor risk management processes can affect the audit in a number of indirect ways by, for example:
- Exposing an entity to levels of risk that breach legal or regulatory restrictions.²⁸
 - Increasing the risk of material misstatement due to fraud or error;
 - Making it more difficult to obtain an understanding of the impact of complex financial instruments on the entity as a whole; or
 - In extreme circumstances, increasing the risk of a going concern problem.
59. Matters to consider on recurring engagements include whether there have been changes to the design of the entity's related controls to ensure that it remains capable of effectively preventing, or detecting and correcting, material misstatements, and whether there have been changes in key personnel responsible for overseeing or performing control activities. For example, changes in the entity's activities, the way it uses complex financial instruments and the types of complex financial instruments held, or changes in the environment or market conditions in which the entity operates, may have introduced new or increased risks to be addressed.
60. Understanding how an entity's compensation policies interact with its exposure to risk and its control environment is also useful in light of increased attention from regulators to entities compensation structures relating to complex financial instruments, including rules governing incentive compensation schemes. When adequate controls surrounding the development and approval of incentive compensation schemes do not exist, this may represent a fraud risk factor to be considered by the auditor (see paragraphs 40–43).

The Role of the Internal Audit Function²⁹

61. ISA 315 requires the auditor to obtain an understanding of the entity's internal audit function (if the function exists), including the nature of the function's responsibilities, how the function fits in the entity's organizational structure, and the activities performed or to be performed, in order to determine whether the internal audit function is likely to be relevant to the overall

²⁸ The auditor may have responsibilities in respect of such breaches as set out in ISA 250, *Consideration of Laws and Regulations in an Audit of Financial Statements*.

²⁹ The IAASB has a project in progress to revise extant ISA 610, *Using the Work of Internal Auditors*. Where this Exposure Draft refers to proposed draft wording under consideration at present, the IAASB will consider the need for modification of the wording of this IAPS as part of the deliberations relating to the finalization of proposed revised ISA 610.

audit strategy and audit plan.³⁰ The knowledge and skills required of an internal audit function to understand and perform procedures to provide assurance to management or those charged with governance on the entity's use of complex financial instruments are generally quite different from those needed for other parts of the business. The extent to which the internal audit function has the knowledge and skill to cover, and has in fact covered, the entity's financial instrument activities is a relevant consideration in the external auditor's determination of whether the internal audit function is likely to be relevant to the overall audit strategy and audit plan.

62. In many large entities, the internal audit function may perform work that enables senior management and those charged with governance to review and evaluate the entity's controls relating to the use of complex financial instruments. Inquiries with the appropriate individuals within the internal audit function may provide information to assist the external auditor in obtaining an understanding of the entity and its environment, including its use of complex financial instruments, and therefore to assess the risks of material misstatement. Areas where the work of the internal audit function may be particularly relevant are:³¹
- Developing a general overview of the extent of use of complex financial instruments;
 - Evaluating the appropriateness of policies and procedures and management's compliance with them;
 - Evaluating the operating effectiveness of financial instrument control activities;
 - Evaluating systems relevant to financial instrument activities;
 - Assessing whether new risks relating to complex financial instruments are being identified, assessed and managed; and
 - Conducting regular evaluations to:
 - Provide management with assurance that financial instrument activities are being properly controlled; and
 - Ensure that new risks and the use of complex financial instruments to manage these risks are being identified, assessed and managed.
63. The external auditor's use of the work of the internal audit function will affect the nature, timing and extent of the external auditor's procedures relating to complex financial instruments. When the external auditor determines that the internal audit function is likely to be relevant to the overall audit strategy and audit plan, the external auditor evaluates whether and to what extent that work of the internal audit function can be used, and its adequacy for the purposes of the audit as required by ISA 610.

³⁰ ISA 315, paragraph 23

³¹ Work performed by an independent risk management function may also be relevant to the auditor in these areas.

Deficiencies in Internal Control

64. In some cases, management may not have appropriately responded to significant risks of material misstatement of complex financial instruments by implementing controls over these significant risks. Failure by management to implement such controls is an indicator of a significant deficiency in internal control.
65. In addition, if deficiencies in internal control were noted in prior periods, it will be important for the auditor to understand whether management has taken action to address these deficiencies, as this may influence the auditor's reliance on control activities and the extent of substantive testing.

The Auditor's Responses to Assessed Risks

66. The auditor's assessment of the identified risks at the assertion level provides a basis for considering the appropriate audit approach for designing and performing further audit procedures, including the balance between substantive procedures and tests of controls. This is influenced by the auditor's understanding of internal control relevant to the audit, including the strength of the control environment, the size and complexity of the entity's operations and whether the auditor's assessment of risks of material misstatement include an expectation that controls are operating effectively.
67. An expectation that controls are operating effectively may be more common when dealing with a financial institution with a well-developed control environment, and therefore controls testing may be an effective means of obtaining audit evidence. Conversely, when auditing an entity with just a small number of complex financial instruments or when controls are weak, a substantive testing approach may be more efficient. Tests of controls, however, will not be sufficient on their own as the auditor is required by ISA 330 to design and perform substantive procedures for each material class of transactions, account balance and disclosure.³²
68. The balance between tests of controls and substantive procedures is influenced by a number of factors including:
 - The entity's control environment, including whether any deficiencies in internal control have been identified;
 - The design of controls and their perceived implementation;
 - The ability to obtain sufficient appropriate audit evidence, including the sources and nature of the evidence;
 - The size and complexity of the entity and the volume and complexity of transactions.

Reliance on Control Activities

69. In reaching a decision on the nature, timing and extent of testing of controls, the auditor may consider factors such as:

³² ISA 330, paragraph 18

- The importance of the financial instrument activities to the entity;
 - The nature, frequency and volume of financial instrument transactions;
 - The control objectives and processes in place at the entity;
 - The potential effect of any identified deficiencies in control procedures;
 - The types of control activities being tested;
 - The frequency of performance of these control activities;
 - The level of precision the controls are intended to achieve;
 - The evidence of performance; and
 - The involvement of a service organization.³³
70. Tests of controls are performed on those controls that the auditor has determined are suitably designed to prevent, or detect and correct, a material misstatement in an assertion. In circumstances where the entity undertakes a limited number of financial instrument transactions, or that the magnitude of these instruments is especially significant to the entity as a whole, dual-purpose tests and substantive procedures may be more appropriate.
71. The population from which items are selected for detailed testing may not be limited to the accounting records. Items to be tested may be drawn from other sources, for example counterparty confirmations and trade tickets, so that the completeness assertion can be tested.

Dual-Purpose Tests

72. The auditor may design a test of controls to be performed concurrently with a test of details. Although the purpose of a test of controls is different from the purpose of a test of details, both may be accomplished concurrently by performing a test of controls and a test of details on the same transaction, also known as a dual-purpose test. This is particularly common when auditing complex financial instruments. For example, the auditor may design and evaluate the results of a test to examine the entity's written documentation for a complex financial instrument to determine whether it has been approved and to provide substantive audit evidence of the transaction. A dual-purpose test is designed and evaluated by considering each purpose of the test separately. Paragraphs 76–148 highlight the three main assertions relating to complex financial instruments (i.e., completeness and accuracy of recording, valuation, and presentation and disclosure), controls that may be in place by an entity to address those assertions, and substantive procedures that the auditor may undertake.

³³ ISA 402, paragraphs 16-17

Substantive Procedures

73. While analytical procedures³⁴ undertaken by the auditor can be effective as risk assessment procedures to provide the auditor with information about an entity's business, they are usually less effective as substantive procedures because the complex interplay of the factors from which the values of these instruments are derived often masks any unusual trends that might arise.
74. Substantive procedures related to the existence, completeness and valuation of complex financial instruments are typically performed at the balance sheet date, even if controls have been in place throughout the period. This is because:
- Individual transactions can be significant in themselves, so that the omission or misrecording of even a few can have a material impact;
 - Cash flows from such transactions can be significant and these can also affect carrying values. These have to be properly accounted for right up to the period end; and
 - Valuations can change significantly in a short period of time.
75. Designing substantive tests includes consideration of:
- Significant risks relating to complex financial instruments that have been identified (see paragraphs 44–51);
 - Appropriateness of accounting – A primary audit objective often addressed through substantive procedures is determining the appropriateness of an entity's accounting for complex financial instruments. For example, depending on the volume of transactions, the auditor may determine whether revenues and expenses related to complex financial instruments have been appropriately recognized and recorded in the correct financial reporting period by performing cut-off procedures;
 - Involvement of a service organization – Evidence concerning the relevant financial statement assertions may not be available from the entity if another organization holds, services or both holds and services the entity's complex financial instruments;³⁵
 - Interim audit procedures – Market movements in the period between the interim testing date and year-end may necessitate further audit procedures if substantive procedures were performed before the balance sheet date. The value of complex financial instruments may fluctuate greatly in a relatively short period, and evidence to support valuation may become less available if market conditions change, which may also warrant a change in valuation methodology. As the amount, relative

³⁴ ISA 315, paragraph 6(b), requires the auditor to apply analytical procedures as risk assessment procedures to assist in assessing the risks of material misstatement in order to provide a basis for designing and implementing responses to the assessed risks. ISA 520, *Analytical Procedures*, paragraph 6, requires the auditor to use analytical procedures in forming an overall conclusion on the financial statements. Analytical procedures may also be applied at other stages of the audit.

³⁵ ISA 402, paragraph 15

significance, or composition of an account balance becomes less predictable, the value of testing at an interim date becomes less valuable;

- Routine vs. non-routine transactions – Many financial transactions are negotiated contracts between an entity and its counterparty. To the extent that financial instrument transactions are not routine and outside an entity's normal activities, a substantive audit approach may be the most effective means of achieving the planned audit objectives. In instances where financial instrument transactions are not undertaken routinely, the auditor's responses to assessed risk, including the designing and performing audit procedures, have regard to the entity's possible lack of experience in this area;
- Procedures performed in other audit areas – Procedures performed in other financial statement areas may provide evidence about the completeness of financial instrument transactions. These procedures may include tests of subsequent cash receipts and payments, and the search for unrecorded liabilities.

Completeness and Accuracy of Recording of Complex Financial Instruments

76. Completeness and accuracy of recording is an essential core assertion on which many others are built. For example, without a process that completely and accurately records all complex financial instruments:
- Financial information will be incomplete or inaccurate;
 - Risks will be improperly managed, because the entity's exposures will be inaccurately recorded; and
 - The entity will be unable to settle transactions accurately.
77. High volumes of transactions and their complexity can make verifying or corroborating completeness and accuracy difficult for complex financial instruments. However, completeness and accuracy are essential if the accounting records are to provide an appropriate basis for the preparation of the financial statements.

Trade Confirmations and Clearing Houses

78. Generally, the terms of complex financial instruments are documented in confirmations exchanged between counterparties or legal agreements. Clearing houses serve to monitor the exchange of confirmations by matching trades and settling them. A central clearing house is attached to an exchange and entities typically have processes to manage the information delivered to the clearing house.
79. Not all transactions are settled through such an exchange, however, but in many other markets, there is an established practice of agreeing the terms of transactions before settlement begins. To be effective this process needs to be run independently of those who trade the complex financial instruments, to ensure that the risk of fraud is minimized. In other markets, transactions are confirmed after settlement has begun and sometimes confirmation backlogs also result in settlement beginning before all terms have been fully agreed. This

presents additional risk and the transacting entities need to rely on alternative means of agreeing trades. These can include:

- Enforcing rigorous reconciliation controls between the records of those trading the complex financial instruments and those settling them (strong segregation of duties between the two are important) combined with strong supervisory controls over traders to ensure that they take the task of recording transactions seriously;
- Reviewing summary documentation from counterparties that highlights the key terms even if the full terms have not been agreed; and
- Thorough and in depth review of traders' profits and losses to ensure that they reconcile to what the back office has calculated.

Reconciliations with Banks and Custodians

80. Some components of complex financial instruments, such as exchange traded futures and options, bonds and shares are held in independent depositories or are settled through central settlement houses. In addition, most complex financial instruments result in payments of cash at some point and often these begin early in the contract's life. These cash payments and receipts will pass through an entity's bank account. Regular and thorough reconciliation of the entity's records to external banks and custodians enables the entity to ensure transactions are properly recorded. Appropriate segregation of duties between those transacting the trades and those reconciling them is important, as is a rigorous process for reviewing reconciliations and clearing reconciling items.
81. It should be noted that not all complex financial instruments result in a cash flow in the early stages of their lives or are capable of being recorded with an exchange or custodian. Where this is the case, reconciliation processes will not identify an omitted or inaccurately recorded trade and confirmation controls are more important.
82. In addition, cash movements may be quite small in the context of the overall size of the trade or the entity's own balance sheet and may therefore be difficult to identify. The value of reconciliations is enhanced when finance or other back office staff review entries in all general ledger accounts to ensure that they are valid and supportable. This process will help identify if the other side to cash entries relating to complex financial instruments has not been properly recorded. Reviewing suspense and clearing accounts is important regardless of the account balance, as there may be offsetting reconciling items in the account.
83. In entities with a high volume of financial instrument transactions, reconciliation and confirmation controls may be automated and, if so, adequate IT controls need to be in place to support them. In particular controls are needed to ensure that data is completely and accurately picked up from external sources (such as banks and custodians) and from the entity's records and is not tampered with before or during reconciliation, and that the criteria on which entries are matched are sufficiently restrictive to prevent inaccurate clearance of reconciling items.
84. The complexity inherent in some financial instruments means that it will not always be obvious how they should be recorded in the entity's systems. In such cases, management

may set up control processes to monitor policies that prescribe how particular types of transactions are measured, recorded and accounted for. These policies are typically established and reviewed in advance by suitably qualified personnel, who are capable of understanding the full effects of the complex financial instruments being booked.

85. Some transactions may be cancelled or amended after initial execution. Application of appropriate controls relating to cancellation or amendment can mitigate the risks of material misstatement due to fraud or error.

Substantive Procedures Relating to Completeness and Accuracy of Recording of Complex Financial Instruments

86. Substantive procedures that may provide audit evidence to support the completeness and accuracy assertion include:
- External confirmation³⁶ of bank accounts, custodian statements, valuation sources and so on. This can be done by direct confirmation with the counterparty (including the use of bank letters), where a reply is sent to the auditor directly. Alternatively this information may be obtained from the counterparty's systems through a data feed. Where this is done, controls to prevent tampering with the computer systems through which the information is transmitted may be considered by the auditor in evaluating the reliability of the evidence from the confirmation. External confirmations, however, do not provide adequate audit evidence with respect to the valuation assertion.
 - Reconciliation of external data with the entity's own records. This may necessitate evaluating IT controls around and within automated reconciliation processes and ensuring that reconciling items are properly understood, followed up and dealt with.
 - Reviewing operational data and contract registers detailing the entity's contractual obligations thereby verifying existence and rights and obligations.
 - Determining whether the complexities inherent in a transaction have been fully identified and reflected in the accounts, including reading transaction documentation and confirming the accounting entries relating to it.

Valuation of Complex Financial Instruments

87. Most complex financial instruments are required to be measured at fair value either for the purposes of balance sheet presentation, calculating profit and loss or for disclosure. The objective of fair value measurement is to arrive at the price at which an orderly transaction would take place between market participants³⁷ at the measurement date; that is, it is not a forced liquidation or a distressed sale. In meeting this objective, all relevant available market information is taken into account. Fair value measurements of financial assets and financial

³⁶ ISA 505, *External Confirmations*, deals with the auditor's use of external confirmation procedures to obtain audit evidence in accordance with the requirements of ISA 330 and ISA 500.

³⁷ As a result, fair value is market-based and reflects the assumptions that market participants would use in pricing the asset or liability, rather than entity-specific.

liabilities may arise both at the initial recording of transactions and later when there are changes in value. Changes in fair value measurements that occur over time may be treated in different ways under different financial reporting frameworks.

Fair Value Hierarchy

88. Some financial reporting frameworks, for example IFRS and U.S. Generally Accepted Accounting Principles (GAAP), establish a fair value hierarchy to develop increased consistency and comparability within and between entities. Inputs represent assumptions used by management to support valuations.³⁸ The hierarchy classifies valuation technique inputs into three broad levels:

- Level 1 inputs – Quoted prices (unadjusted) in active markets for identical assets or liabilities that the entity can access at the measurement date.
- Level 2 inputs – Inputs other than quoted prices included within level 1 that are observable for the asset or liability, either directly (that is, as prices) or indirectly (that is, derived from prices). If the financial asset or financial liability has a specified (contractual) term, a level 2 input must be observable for substantially the full term of the financial asset or financial liability. Level 2 inputs include the following:
 - Quoted prices for similar financial assets or financial liabilities in active markets.
 - Quoted prices for identical or similar financial assets or financial liabilities in markets that are not active.
 - Inputs other than quoted prices that are observable for the financial asset or financial liability (for example, interest rates and yield curves observable at commonly quoted intervals, volatilities, prepayment speeds, loss severities, credit risks and default rates).
 - Inputs that are derived principally from or corroborated by observable market data by correlation or other means (market-corroborated inputs).
- Level 3 inputs – Inputs for the financial asset or financial liability that are not based on observable market data (unobservable inputs). Unobservable inputs are used to measure fair value to the extent that relevant observable inputs are not available, thereby allowing for situations in which there is little, if any, market activity for the asset or liability at the measurement date.

In practice, however, the distinction between the levels in the hierarchy is not always apparent.

89. When observable inputs are not available, an entity uses unobservable inputs that reflect the assumption that market participant assumptions would use when pricing the financial asset or the financial liability, including assumptions about risk. Unobservable inputs are developed using the best information available in the circumstances, which might include an entity's

³⁸ Paragraph A32 of ISA 540 notes that the term “inputs” may also be used to refer to the underlying data to which specific assumptions are applied.

own data. In developing unobservable inputs, an entity may begin with its own data, which is adjusted if reasonably available information indicates that (a) other market participants would use different data or (b) there is something particular to the entity that is not available to other market participants (for example, an entity-specific synergy), and the entity is able to quantify these adjustments.

Management's Method for Valuing Its Complex Financial Instruments

90. Management's responsibility for the preparation of the financial statements includes applying the requirements of the applicable financial reporting framework to the valuation of complex financial instruments. Management's approach to valuation also takes into account the selection of an appropriate valuation method and the level of the evidence expected to be available. In order for management to measure a complex financial instrument at fair value, it is important that, to the extent possible, evidence be obtained from an observable external source that supports its fair value. Positions are generally valued by management using one of two methods:
- By direct comparison to an external source, for example, quoted shares and bonds; or
 - By valuation through a model.
91. Changes in markets may require changes in valuation approaches. Consistency is generally a desirable quality in financial information, but may be inappropriate if circumstances change. As markets become inactive, the change in circumstances may lead to a move from valuation by market price to valuation by model. Reacting to changes in valuation techniques may be difficult if management does not have policies in place to consider the ramifications of changing market conditions, prior to their occurrence. Management may also not possess the expertise necessary to develop a model on an urgent basis, or select the valuation technique that may be appropriate in the circumstances. Even where models have been consistently used, there is a need for management to examine the continuing appropriateness of the models and assumptions used for determining valuation of complex financial instruments. Further, models may have been calibrated in times where reasonable market information was available, but may not provide reasonable valuations in times of unanticipated stress.

Management's Assumptions

92. Assumptions are integral components in the valuation of complex financial instruments, as they are used as inputs to valuation models. Management may support assumptions with different types of information drawn from internal and external sources, the relevance and reliability of which will vary. Assumptions may be made or identified by a management's expert to assist management in valuing its complex financial instruments. Such assumptions, when used by management, become management's assumptions. Understanding the method of measurement used by management's experts, therefore, enables management to meet its responsibilities for ensuring the complex financial instruments recorded in the financial statements are properly valued and presented and providing written representations to the

auditor about whether they believe significant assumptions used valuing the complex financial instruments are reasonable (see paragraph 161).

93. For example, understanding the bases on which brokers and pricing services have determined their quotes in the context of the particular complex financial instruments held by the entity assists management in evaluating the relevance and reliability of this evidence to support its valuations, including the objectivity of the management's expert.

Sources of Evidence to Support Management's Assumptions

94. The best indicators of fair value are contemporaneous transactions in an active market. However, in many cases complex financial instruments are not actively traded, but components of their valuations are based on observable data (such as interest rate curves, or the assets underlying options).
95. Quoted market prices for complex financial instruments that are listed on exchanges or traded in liquid over-the-counter markets may be available from sources such as financial publications, the exchanges themselves, brokers or pricing services. When using quoted prices, it is important that management understand the basis on which the quote is given to ensure that the price reflects current market conditions. Quoted prices obtained from publications or exchanges may provide sufficient evidence of value if:
 - The prices are not out of date or "stale" (for example, if the quote is based on the last traded price and the trade occurred some time ago); and
 - The quotes are prices at which dealers would actually trade in reasonable volume.
96. External prices may be available directly from markets and are likely to be used as inputs to valuation models, because many complex financial instruments are tailored for particular clients and are not therefore comparable among entities. Exchange prices can be used to derive estimates for fair value of complex financial instruments. Theoretical prices for customized products may be created by breaking down complex financial instruments into a series of listed options or futures, weighted by standard expiry dates. Many complex financial instruments are likely to be correlated to security and derivative contracts already listed and traded on exchanges. However, management may need to take into account basis differences, credit risk, and other factors in arriving at a valuation.

Broker Quotes and Pricing Services

97. Pricing information may also be obtained from brokers or pricing services. Quotes obtained from brokers are not always binding offers to trade and hence may not represent a price at which a transaction would actually take place. Brokers and pricing services may value complex financial instruments using proprietary models. Pricing services may also poll a number of market participants and brokers anonymously to obtain prices, which are then averaged in some way to produce a "consensus price." Pricing services may combine a number of approaches to arrive at a price.
98. If broker quotes or quotes obtained from pricing services are not based on current prices of actively traded instruments, these quotes on their own, without further evaluation from

management, are not sufficient evidence to support the valuation assertion. It will be necessary for management to evaluate whether the quotes were derived in a manner that is consistent with the applicable financial reporting framework. The entity's understanding of the prices includes:

- How the prices were determined – in order to assess whether they are consistent with the fair value measurement objective;
- Whether the prices are indicative prices or binding offers;
- How frequently the prices are estimated by the broker or pricing service – in order to assess whether they reflect marked conditions at the measurement date.

Additional information on broker quotes and pricing services is included in Appendix 4.

99. If a price obtained by management comes from a counterparty (for example, the broker who sold the complex financial instrument to the entity) or another entity with a close relationship with the entity being audited, the price may not be reliable. In such cases, it will be necessary for management to obtain additional quotes from counterparties or pricing services that do not have a close relationship to the entity. In these cases, the auditor may consider this in determining the nature, timing and extent of audit procedures to be performed. See paragraphs 149–154, which deal with the auditor's evaluation of the overall results of valuations.

Management's Process to Corroborate Evidence Used in Developing Its Valuation

100. It is possible that there will be disparities between price indicators from different providers. Investigation of these disparities assists management in corroborating the evidence used in developing its valuation of complex financial instruments in order to determine whether the valuation is reasonable. Simply taking the average of the quotes provided, without doing further research, may not be appropriate, because one price in the range may be the most representative of fair value and this may not be the average. To determine whether its valuations of complex financial instruments are reasonable, management may:
- Consider whether actual transactions represent forced transactions rather than transactions between willing buyers and willing sellers. This may invalidate the price as a comparison;
 - Analyze the expected future cash flows of the instrument. This could be performed as an indicator of the most relevant pricing data;
 - Depending on the nature of what is unobservable, extrapolate from observed prices to unobserved ones (for example, there may be observed prices for maturities up to ten years but not longer, but the ten year price curve may be capable of being extrapolated beyond ten years as an indicator). Care is needed to ensure that extrapolation is not carried so far beyond the observable curve that its link to observable prices becomes too tenuous to be reliable;
 - Compare prices within a portfolio of complex financial instruments to each other to make sure that they are consistent among complex similar financial instruments;

- Use more than one valuation model to corroborate the results from each one, having regard to the inputs and assumptions used in each; and
- Evaluate movements in the prices for related hedging instruments and collateral.

In coming to its judgment as to its valuation, an entity may also consider other factors that may be specific to the entity's circumstances.

Using Models

101. Models are used to value financial instruments, including complex financial instruments, where the price cannot be directly observed in the market. There can be a number of reasons for this. For example, markets might only quote for certain standard transactions such as those with one, three and five year maturities. For example, an OTC transaction with an original maturity of five years will therefore only have a directly observable quote on three days during its life, because for the remainder of the time, its terms do not match one, three or five years. In addition many transactions are not directly quoted in the market place but are constructed through combinations of more simple interest rate, foreign exchange rate and other products.
102. Depending on the circumstances, matters that the entity may address when establishing or validating a valuation model for a complex financial instrument, include whether:
 - The model is validated prior to usage, with periodic reviews to ensure it is still suitable for its intended use. The entity's validation process may include evaluation of:
 - The model's theoretical soundness and mathematical integrity, including the appropriateness of model parameters and sensitivities.
 - The consistency and completeness of the model's inputs with market practices, and whether the appropriate inputs are available for use in the model.
 - The model's output, including sensitivities, as compared to actual transactions (internal or external) or other relevant benchmarks.
 - Appropriate change control policies and procedures, and security controls over the model, exist.
 - The model is periodically calibrated, reviewed and tested for validity, particularly when inputs are subjective.
 - The model maximizes the use of relevant observable inputs and minimizes the use of unobservable inputs.
 - Adjustments are made to the output of the model, including in the case of fair value accounting estimates of complex financial instruments, whether such adjustments reflect the assumptions marketplace participants would use in similar circumstances.
 - The model is adequately documented, including the model's intended applications and limitations and its key parameters, required inputs, and results of any validation analysis performed.

Effects of Inactive Markets

103. Valuation is more complicated when the markets in which complex financial instruments or their component parts are traded are inactive or where no price is observable. There is no clear point at which an active market becomes inactive.
104. Characteristics of an inactive market include a significant decline in the volume and level of trading activity, the available prices vary significantly over time or among market participants or the prices are not current. However, these factors alone do not necessarily mean that a market is not longer active. An active market is one in which transactions are taking place regularly on an arm's length basis. "Regularly" is a matter of judgment and depends on facts and circumstances of the market for the complex financial instrument being measured at fair value.
105. When markets are inactive, measuring complex financial instruments becomes more difficult because of the lack of observable trades and other market data. Prices quoted may be stale (that is, out of date) or may not represent prices at which market participants may trade. Accordingly, valuations are based on level 2 or level 3 inputs. It will therefore be necessary for the entity to put more effort into the valuation process to ensure that prices provide evidence of fair value or to determine the adjustments to prices that are necessary to measure the fair value of the complex financial instrument. Under such circumstances it is desirable for entities generally to have:
 - A process for determining whether level 1 inputs are available;
 - An understanding of how particular prices from external sources were calculated in order to assess their reliability. For example, in an active market, a broker quote is likely to reflect actual transactions, but, as the market becomes less active, the broker may rely more on proprietary models to determine prices;
 - An understanding of how deteriorating business conditions in one or more entities similar to the counterparty may affect the counterparty's ability to meet its obligations;
 - Policies for adjusting for valuation uncertainties. Such uncertainties can include lack of liquidity, uncertainties arising from model calibration and nonperformance credit risks; and
 - The capability to calculate the range of realistic outcomes given the uncertainties involved, for example by performing a sensitivity analysis.
106. Where there is no pricing source based upon current active market trading, indicators of price will be inherently unreliable. It is therefore necessary for the entity to gather other price indicators and evaluate them to determine the most reasonable price. In general, a price based on price indicators will be based on level 2 inputs. Price indicators may include:
 - Recent transactions or transactions after the balance sheet date in the same instrument. Consideration is given to whether an adjustment needs to be made for changes in market conditions between the measurement date and the date the transaction was made, as these transactions are not necessarily indicative of the

market conditions that existed at the balance sheet date. In addition it is possible that the transaction represents a forced transaction and is therefore not indicative of a price in an orderly trade. Indicators of a forced transaction may include:

- A legal requirement to transact, for example a regulatory mandate.
 - A necessity to dispose of an asset immediately to create liquidity, resulting in insufficient time to market the asset to be sold.
 - The existence of a single potential buyer as a result of the legal or time restrictions imposed;
 - Current or recent transactions in similar instruments. Adjustments will need to be made to such prices to reflect the difference between them and the instrument being priced and to take account of differences in liquidity between the two instruments; and
 - Indices for similar instruments. As with transactions in similar instruments, adjustments will need to be made to reflect the difference between the instrument being priced and the index used.
107. It may be necessary for the entity to adjust model derived prices to reflect additional factors, for example:
- Credit spreads. Some market prices are quoted for an assumed level of credit risk. Adjustments should be made for counterparties, which do not match this assumption;
 - Bid/offer spreads. Some accounting frameworks require the bid/offer spread to be taken into account when valuing complex financial instruments. If the price quoted does not reflect this, appropriate adjustments will need to be made; and
 - Model deficiencies. For example, adjustments needed to calibrate the model to observable market information, and liquidity and credit adjustments that market participants would make. A value measured using a model that does not taken into account all factors that market participants would consider in pricing the complex financial instrument does not represent an estimate of a current transaction price on the measurement date.

However, adjustments are not appropriate if they adjust the measurement and valuation of the complex financial instrument away from fair value, for example for conservatism, which is a form of management bias.

Management's Use of Sensitivity Analysis

108. Complex financial instruments may have the associated risk that a loss might exceed the amount, if any, of the value of the complex financial instrument recognized on the balance sheet. For example, a sudden fall in the market price of a commodity may force an entity to realize losses to close a forward position in that commodity due to collateral, or margin, requirements. In some cases, the potential losses may be enough to cast significant doubt on the entity's ability to continue as a going concern. The entity may

perform sensitivity analyses or value-at-risk analyses to assess the hypothetical effects on complex financial instruments subject to market risks. However, value-at-risk analyses may not fully consider all the risks that may affect the entity and are not a substitute for the auditor's risk assessment procedures.

109. The more sensitive the valuation is to movements in a particular variable, the more precisely that variable needs to be priced, or, if it cannot be sufficiently precisely priced, the more likely it is that disclosure will be necessary to indicate the uncertainties surrounding the valuation. See paragraphs 125–148 for further guidance on disclosures, including estimation uncertainty.

Considerations Unique to Valuing Financial Liabilities

110. In some financial reporting frameworks, the measurement of a financial liability assumes that it is transferred to a market participant on the measurement date; it is not assumed to be settled with the counterparty of otherwise extinguished. Where there is not an observable market price for a financial liability, its value is typically measured using the same method as a counterparty would use to measure the value of the corresponding asset. The fair value of a financial liability reflects the non-performance risk associated with the liability, which can include the effects of the entity's own credit risk.
111. Understanding the credit risk is an important aspect of valuing both financial assets and financial liabilities. This valuation reflects the credit quality and financial strength of both the issuer and any credit support providers. Some of the more common factors considered in valuing a financial liability include:
- Collateral asset quality – the assets to which the holder of a financial instrument has recourse in the event of default should be considered, in particular if recourse is to all the assets of the issuer or only to specified assets. The greater the value and quality of the assets to which an entity has recourse in the event of default, the lower the credit risk of the financial instrument.
 - Subordination – establishing the priority of a financial instrument is critical in assessing the default risk. Other financial instruments may have priority issuers assets or the cash flows that support the instrument.
 - Default protection – Many financial instruments contain some form of protection to reduce the risk of non-payment to the holder. Protection might take the form of a guarantee of a third party, an insurance contract, a credit default swap, or an excess of assets supporting the financial instrument above what is needed to make the payments. The default risk is also reduced if subordinated instruments take the first losses on the underlying assets and therefore reduce the risk to more senior instruments. When protection is in the form of a guarantee, an insurance contract or credit default swap, it is necessary for management to identify the party providing the protection and assess that party's creditworthiness. Considering the creditworthiness of a third part involves not only their current position but also the possible effect of other guarantees or insurance contracts that it might have written.

If the provider of a guarantee has also guaranteed many correlated debt securities, the risk of its non-performance might increase significantly.

112. When valuing the interest of the issuer of an instrument that creates a financial liability, the view that market participants would take of the credit risk is an important consideration. This will include the credit risk of the issuer. There are various potential sources for reflecting their own credit in the valuation of financial liabilities. These include the yield curve for the entity's own bonds or other debt issued and credit default swap spreads. The most appropriate source of evidence of their own credit risk depends on the quality of the evidence available and the instrument being valued. For entities for which limited information is available, it might be necessary for management to look to information available for entities with similar risk characteristics; credit indices are published that may assist this process, although any deviations from similar entities or indices may also need to be considered. When adjusting for their own credit risk, it is also important for management to consider the nature of the collateral available for the financial liabilities being valued.

Substantive Procedures Relating to Valuation of Complex Financial Instruments

113. As valuation is a process of estimation and is complex and may be subjective, it often gives rise to significant risks of material misstatement of the financial statements (see paragraphs 44–48).
114. In understanding how management values the complex financial instrument and in responding to the assessed risks of material misstatement in accordance with ISA 540,³⁹ the auditor considers the evidence that the entity has gathered (see paragraphs 90–107) and the entity's conclusions on pricing and valuation and determines what audit work is required. Audit procedures to support the auditor's understanding of how management values its complex financial instruments may include:
- Considering whether there are any other relevant price indicators or factors to take into account;
 - Reconciling data to source materials, after considered the reliability, completeness and accuracy of the source materials;
 - Assessing the mathematical accuracy of the method employed;
 - Obtaining independent confirmation of price indicators; and
 - Reviewing and assessing the judgments made by the entity, for example by reviewing accounting position papers prepared by management.

This is a highly judgmental area and the auditor may consider using persons with specialized skills and knowledge to perform audit procedures, in particular when management has used an expert to value the complex financial instrument.

³⁹ ISA 540, paragraphs 12-14

Evaluating Whether the Valuation Method, Including Models, Used is Appropriate in the Circumstances

115. ISA 540 requires the auditor to undertake one or more actions to respond to the assessed risks of material misstatement relating to accounting estimates.⁴⁰ Due to the nature and complexity of financial instruments, for example because the assessed risks may be a significant risk, it is often necessary for the auditor to test how management has valued the complex financial instruments and the date on which the valuations are based. This testing includes evaluating whether:
- The method of measurement used is appropriate in the circumstances. For example, entities may use varying methodologies for regulatory and internal reporting purposes that may not be suitable for valuation in accordance with the applicable financial reporting framework; and
 - The assumptions used by management are reasonable in light of the measurement objectives of the financial reporting framework.
116. Paragraphs 88–89 discuss the establishment of a fair value hierarchy by some financial reporting frameworks. The objective of a fair value measurement is the same regardless of the level of the hierarchy. As the inputs become less observable, the degree of estimation uncertainty increases and affects the auditor’s assessment of the risks of material misstatements. In general, prices based on alternative valuation sources will contain level 2 inputs. Level 3 inputs (or inputs that have similar characteristics in financial reporting frameworks that do not establish a hierarchy) have high estimation uncertainty and may represent a significant risk, as it may be challenging for the auditor to substantiate the valuations of complex financial instruments with unobservable inputs.
117. In some cases, the applicable financial reporting framework may prescribe the method of measurement for complex financial instruments, for example, a particular model to be used. In many cases, however, the applicable financial reporting framework does not prescribe the method of measurement, or may specify alternative methods. When this is the case, matters that may be relevant to the auditor’s understanding of management’s method used to value complex financial instruments include, for example:
- How management considered the nature of the complex financial instrument to be valued when selecting a particular method;
 - Whether there is a greater risk of material misstatement because management has internally developed a model to be used to value complex financial instruments or is departing from a method commonly used to value the particular complex financial instrument; and
 - Whether there are indicators of management bias in selecting the method to be used.
118. Models can be used to value both financial assets and financial liabilities. Valuation models are used where a complex financial instrument is not quoted in the market, however, inputs to

⁴⁰ ISA 540, paragraph 13

the model may be observable (e.g., derived from complex financial instruments that are quoted) or unobservable (e.g., estimates of future cash flows). ISA 540 provides guidance about matters that the auditor may consider in testing models.⁴¹ In addition, the degree of consistency of valuation approaches and the appropriateness of changes in approach or assumptions require audit attention.⁴²

119. When evaluating whether the model used by an entity is appropriate in the circumstances, the factors considered by the auditor may include:
- The theoretical model being used. For example, there are a number of option pricing models and it is important that the uncertainty inherent in the assumptions underlying each one are understood and taken into account in the valuations;
 - Whether the model is commonly used by other market participants and has been previously demonstrated to provide a reliable estimate of prices obtained from market transactions;
 - Whether the models operate as intended and there are no flaws in their design, particularly under extreme conditions;
 - Whether the model takes account of the risks inherent in the financial instrument being valued, including own credit risk in the case of models used to measure financial liabilities;
 - Who developed the model and whether its design could have been unduly influenced by traders or others who may not be objective;
 - How the model is calibrated to the market to verify that its output is a genuine reflection of market prices, including how sensitive the model is to changes in variables and whether this reflects market behavior;
 - Whether market variables and assumptions are used consistently and whether new conditions justify a change in the model, market variables or assumptions used;
 - Whether sensitivity analyses indicates that valuations would change significantly with only small or moderate changes in assumptions; and
 - The competence of those responsible for the development and application of the models, including management's relative experience with particular models that may be newly developed.
120. When markets become inactive or dislocated, management's valuations may be more judgmental and less verifiable and, as result, may be less reliable. In such circumstances, the auditor may test the model by a combination of testing controls operated by the entity, evaluating the design and operation of the model, testing the assumptions and inputs used in

⁴¹ See paragraphs A74-A76 of ISA 540.

⁴² ISA 540, paragraph 8(c)(iii), requires the auditor to understand whether there has been or ought to have been a change from the prior period in the methods used and, if so, why. If management has changed the method, it is important that management can demonstrate that the new method is more appropriate or is being used because of change in the environment, circumstances affecting the entity, or the applicable financial reporting framework.

the model, and comparing its output to a point estimate or range developed by the auditor or to other third-party models.⁴³

Evaluating Whether the Assumptions and Inputs Used by Management are Reasonable

121. Paragraphs 92–100 describe management’s assumptions and the evidence that may be available to support them. The extent of subjectivity associated with assumptions influences the degree of estimation uncertainty and may lead the auditor to conclude there is a significant risk. When performing risk assessment procedures in accordance with ISA 540,⁴⁴ the auditor is required to understand how management makes its accounting estimates, and an understanding of the data on which they are based, including, among others, the assumptions underlying the accounting estimates. Audit procedures to test the assumptions used by management, including those used as inputs to valuation models, are based on information available to the auditor at the time of the audit and may include evaluating:
- Whether management has the intent and ability to carry out certain courses of actions that affect its assumptions (if taking these intentions or plans into account is permitted by the applicable financial reporting framework);
 - Whether and, if so, how management has incorporated market-specific inputs into the development of assumptions, as it is generally preferable to seek to maximize market-specific inputs and minimize entity-specific inputs;
 - Whether the assumptions are consistent with observable market conditions, and the characteristics of the financial asset or financial liability;
 - Whether the sources of market-participant assumptions are relevant and reliable, and how management has selected the assumptions to use when a number of different marketplace assumptions exist;
 - Whether the inputs to the models are complete and appropriate for the model, including whether sources of the inputs have changed during the period; and
 - Whether sensitivity analyses indicate that valuations would change significantly with only small or moderate changes in assumptions.
122. Where valuation of complex financial instruments is based on unobservable inputs, matters that the auditor may consider include, for example, how management supports the following:
- The identification and characteristics of marketplace participants relevant to the complex financial instrument.
 - Modifications it has made to its own assumptions to reflect its view of assumptions marketplace participants would use.
 - Whether it has incorporated the best input information available in the circumstances.

⁴³ ISA 540, paragraph 13(d) describes requirements when the auditor develops a point estimate or range to evaluate the entity’s point estimate. Models developed by third parties and used by the auditor may be considered the work of an auditor’s expert and subject to the requirements in ISA 620.

⁴⁴ ISA 540, paragraph 8(c)

- Where applicable, how its assumptions take account of comparable transactions, financial assets or financial liabilities.

If there are unobservable inputs, it is more likely that the auditor's evaluation of the assumptions will need to be combined with other responses to assessed risks⁴⁵ in order to obtain sufficient appropriate audit evidence. In such cases, it may be necessary for the auditor to perform other audit procedures, for example, examining documentation supporting the review and approval of the valuation of the complex financial instrument by appropriate levels of management and, where appropriate, by those charged with governance.

123. In evaluating the reasonableness of the assumptions supporting management's valuation of the complex financial instruments, the auditor may identify one or more significant assumptions. If so, it may indicate that there is high estimation uncertainty and may, therefore, give rise to a significant risk. Additional responses to significant risks are described in paragraphs 49–51.
124. Management of the entity may not have access to details of the model(s) used, and the key assumptions, used by brokers and pricing services to value complex financial instruments. As noted in paragraph 92, it is necessary for management to understand the assumptions and inputs used by the management's expert in valuing the complex financial instruments to determine whether these assumptions are appropriate. It is also necessary for management to understand the objectives of the valuation model to ensure it uses the measurement criteria of the applicable financial reporting framework. If management is unable to obtain this understanding, the auditor may not be able to obtain sufficient appropriate audit evidence in order to conclude about the reasonableness of the valuation of the complex financial instruments. Further evidence considerations relating to management's use of third-party expertise are discussed in paragraphs 155–157.

Presentation and Disclosure of Complex Financial Instruments

Disclosures in the Financial Statements

125. Disclosures in the financial statements are intended to enable users of the financial statements to make meaningful assessments of effects of the entity's financial instrument activities, including the risks and uncertainties associated with these complex financial instruments. Accordingly, disclosures are of equal importance to the amounts recorded in the financial statements relating to financial instrument activities. Disclosures are most effective when they:
 - Faithfully represent the underlying transactions and events, and illustrate how amounts recognized in the balance sheet, income statement, or statement of changes in equity relate to other quantitative and qualitative disclosures;
 - Provide comprehensive and meaningful information that fully describes the entity's risks and exposures from complex financial instruments and allow users to have an adequate understanding of the entity's financial instrument transactions; and

⁴⁵ See paragraph 13 of ISA 540.

- Allow for comparison over time and between entities.
126. The financial risks and exposures inherent in complex financial instruments cannot always be effectively captured in a balance sheet and profit and loss account. For example, significant derivative contracts often have zero value at initial recognition since they are priced at prevailing market rates. Financial reporting frameworks generally require additional disclosures regarding estimates and related risks and uncertainties to supplement and explain assets, liabilities, income and expense. Entities often establish processes and controls to gather the information required by the applicable financial reporting framework so that it is complete and accurate.
127. In some cases, the applicable financial reporting framework may preclude recognition of a complex financial instrument in the financial statements, or its measurement at fair value, but may require disclosure of the high estimation uncertainty associated with the complex financial instrument. Disclosures in this circumstance may include acknowledgment that their fair value cannot be measured reliably and why that is the case.

Categories of Disclosures

128. Disclosure requirements can typically be characterized in three main categories:
- (a) Quantitative disclosures that are derived from the amounts included in the financial statements – for example, categories of financial assets and liabilities;
 - (b) Quantitative disclosures that require significant judgment – for example, sensitivity analysis for each type of market risk to which the entity is exposed; and
 - (c) Qualitative disclosures – for example, those describe the entity’s objectives, policies and procedures for managing each type of risk arising from complex financial instruments and the methods used to measure the risks.
129. The applicable financial reporting framework may permit, or prescribe, disclosures related to accounting estimates, and some entities may disclose voluntarily additional information in the notes to the financial statements. These disclosures may include, for example:
- A summary of significant accounting policies.
 - The assumptions used.
 - The method of estimation used, including any applicable model.
 - The basis for the selection of the method of estimation.
 - The effect of any changes to the method of estimation from the prior period.
 - The sources and implications of estimation uncertainty.
130. Disclosures that give information about the significance of complex financial instruments to an entity’s financial position and performance and may be required by the applicable financial reporting framework may include:
- Disclosures about the carrying amounts of financial assets and liabilities;

- Disclosures about reclassifications of financial assets;
 - Disclosures about the carrying amounts of financial assets that have been pledged as collateral, including the terms and conditions;
 - Disclosures about net gains or net losses on particular categories of financial assets and financial liabilities; and
 - Disclosures about non-linear complex financial instruments and the factors that affect their valuation.
131. Entities may also be required under certain financial reporting frameworks to give quantitative disclosures such as:
- Summary data about the exposures at the reporting date; and
 - Market risk information such as a sensitivity analysis for each type of market risk to which the entity is exposed at the reporting date, showing how profit or loss and equity would have been affected by changes in the relevant risk variable that were reasonably possible at that date.

These disclosures are based on the information provided internally to key management personnel of the entity, for example those charged with governance. These types of subjective quantitative disclosure allow users to evaluate the effect of a change in future expectations if the assumptions and probabilities of the occurrence of various scenarios are made clear.

132. Some financial reporting frameworks require disclosure of information that enables users of the financial statements to evaluate the nature and extent of the risks arising from complex financial instruments to which the entity is exposed at the reporting date. The extent of disclosure depends on the extent of the entity's exposure to risks arising from complex financial instruments. This includes qualitative disclosures about:
- (a) The exposures to risk and how they arise;
 - (b) The entity's objectives, policies and processes for managing the risk and the methods used to measure the risk; and
 - (c) Any changes in (a) or (b) from the previous period.
133. Other qualitative disclosures that may be required by certain financial reporting frameworks include:
- The judgments made in applying the entity's accounting policies that have the most significant effect on the amounts recognized in the financial statements;
 - Information about the assumptions concerning the future; and
 - Other major sources of estimation uncertainty at the balance sheet date that have a significant risk of causing a material adjustment in the carrying amount of assets and liabilities within the next financial year.

Where appropriate, management may also need to consider related guidance and recommendations that may have been produced by relevant bodies, such as regulators and audit oversight bodies.

In addition, qualitative disclosure is often used to add value to quantitative disclosures by providing analysis and interpretation of tables, for example to provide more information about valuation techniques and inputs to fair value measurements.

Disclosures Required about the Fair Value Hierarchy

134. As noted in paragraphs 88–89, some financial reporting frameworks may also establish a fair value hierarchy that reflects the significance of the inputs used in making the measurements and may require quantitative disclosures about the level in the fair value hierarchy into which the fair value measurements are categorized in their entirety. They may also require the entity to disclose whether changing one or more of the inputs to reasonably possible alternative assumptions would change fair value significantly and, if so, how the effect of a change in assumptions was calculated, or the effect of correlation between unobservable inputs if such correlation is relevant when estimating the effect on the fair value measurement of using those different levels of inputs. While these disclosures may be quantitative in nature in that an amount is calculated, the selection of reasonably possible alternative assumptions can often be a subjective process.
135. For example, the additional disclosures required for complex financial instruments with fair value measurements that are in level 3 of the hierarchy are aimed at informing users of financial statements about the effects of those fair value measurements that use the most subjective inputs. Because the inputs to these fair value measurements reflect the entity's own assumptions about assumptions that market participants would use, including assumptions about risks, it is critical that disclosures are meaningful and balanced.

Presentation of Financial Statements

136. An entity that undertakes a number of financial instrument transactions with a single counterparty may enter into a master netting arrangement with that counterparty. Such an agreement provides for a single net settlement of all complex financial instruments covered by the agreement in the event of default of any one contract. These arrangements are commonly used by financial institutions to provide protection against loss in the event of bankruptcy or other circumstances that result in a counterparty being unable to meet its obligations. Financial reporting frameworks may establish requirements relating to such agreements which permit or prohibit netting for purposes of balance sheet presentation.
137. Financial reporting frameworks may also specify how particular transactions should be presented in the financial statements based on their economic substance. For example, convertible debt, preferred shares and derivatives indexed to an entity's own equity may be recorded within equity or as an asset or liability. Repurchase and resale transactions may be used by an entity to secure short-term financing, and the applicable financial reporting framework may specify how these and other sheet transactions should be reported in the financial statements or prescribe additional disclosures relating to these transactions. The

posting of collateral with a counterparty may also affect how financial instrument transactions are presented in the financial statements.

Substantive Procedures Relating to the Presentation and Disclosure of Complex Financial Instruments

Evaluating the Entity's Presentation of Financial Statements

138. In assessing whether the classification of financial statement presentation is appropriate, it is important for auditors to consider whether master netting agreements are in effect and relevant assets and liabilities that subjects to such netting contracts are identified comprehensively. In addition, if the total assets or liabilities are used to determine the incentive compensation for managements or corporate tax payments, it is also important for auditors to be alert to the fraud risk that netting is not appropriately made with a fraudulent intent.

Evaluating the Reasonableness and Adequacy of Disclosures

139. Paragraphs 125–135 discuss disclosures that may be required by the applicable financial reporting framework. Such disclosures are relevant to users in understanding the accounting estimates recognized or disclosed in the financial statements, and sufficient appropriate audit evidence needs to be obtained about whether disclosures are in accordance with the requirements of the applicable financial reporting framework.
140. Evaluating the reasonableness and adequacy of disclosures in the financial statements relating to complex financial instruments, whether required by the applicable financial reporting framework or disclosed voluntarily, involves essentially the same types of considerations applied when auditing complex financial instruments recognized in the financial statements. The auditor's evaluation of the adequacy of disclosure of estimation uncertainty increases in importance as the range of possible outcomes of the complex financial instruments increases in relation to materiality. Guidance included in paragraphs 121–124 relating to evaluating management's use of assumptions is equally applicable when evaluating disclosures of the assumptions and sensitivity analyses.
141. ISA 315 requires the auditor to identify and assess the risks of material misstatement at the assertion level for classes of transactions, account balances, and disclosures to provide a basis for designing and performing further audit procedures (see the assertions about presentation and disclosure in paragraph 21).⁴⁶ Determining the extent of audit work on disclosures is a matter of professional judgment. The auditor's primary consideration is where the work performed is sufficient to conclude that the financial statements have been prepared in accordance with the applicable financial reporting framework and achieve fair presentation. ISA 700⁴⁷ requires the auditor, to evaluate, among other things, whether:
- The financial statements adequately disclose the significant accounting policies selected and applied;

⁴⁶ ISA 315, paragraph 15(b)

⁴⁷ ISA 700, *Forming an Opinion and Reporting on Financial Statements*

- The information presented in the financial statements is relevant, reliable, comparable and understandable; and
- The financial statements provide adequate disclosures to enable the intended users to understand the effect of material transactions and events on the information conveyed in the financial statements.

Consideration of whether qualitative disclosures are presented in an understandable manner is a key component of this evaluation.

142. For example, in evaluating the information included in disclosures, the auditor may identify areas for improvement and encourage management and those charged with governance to avoid unnecessarily long disclosures that could result in additional complexity rather than clarity. Auditors may also consider whether the disclosures are coherent, for example, all relevant information may be included in the financial statements (or accompanying reports) but it may be insufficiently drawn together to enable users of the financial statements to obtain an understanding of the position.
143. Disclosures that contain subjective comments and assessments made by management, for example, general “boilerplate” statements such as “our processes are some of the most rigorous in the industry” as well as imprecise descriptions such as “our reconciliations are monitored on a regular basis” (instead of, for example, “our reconciliations are monitored monthly”), fail to convey meaningful information to users of the financial statements and are not factually supportable. If management has included such subjective statements in information that is to be audited, it may be necessary for the auditor to ask management and those charged with governance to amend them.

The Relationship between Internal Control and Disclosures

144. As part of complying with ISA 315, the auditor will have obtained information regarding the entity’s risk assessment process and control activities. It is important that narrative disclosures required by the accounting framework are consistent with this information, in particular with regard to:
 - The entity’s objectives and strategies for using complex financial instruments;
 - The entity’s control framework for managing its risks associated with complex financial instruments; and
 - The risks and uncertainties associated with the complex financial instruments;and are consistent with the amounts included for complex financial instruments in the financial statements. If disclosures are made in the financial statements with which the auditor is not familiar, supporting evidence for such disclosures will need to be obtained to support the auditor’s opinion on the financial statements. Such evidence may include supporting papers and written representations from management.
145. As disclosure requirements increase, changes may be needed to an entity’s accounting policies, processes, system and technology in order to gather the information and this may affect the entity’s internal control. For example, information included in disclosures relating

to the hierarchy of inputs to valuation, ranging from level 1 to level 3 may be derived from information systems that are not otherwise used to generate information for inclusion in the financial statements. In order to test the adequacy of disclosures, the auditor may test the operating effectiveness of the controls over the process by which management identifies the need for disclosures in the financial statements.

Estimation Uncertainty and Significant Risks

146. In addition to the auditor's determination of whether disclosures relating to complex financial instruments are in accordance with the applicable financial reporting framework, ISA 540 also requires the auditor to perform further procedures on disclosures relating to accounting estimates that give rise to significant risks to evaluate the adequacy of the disclosure of their estimation uncertainty in the financial statements in the context of the applicable financial reporting framework.⁴⁸
147. In relation to complex financial instruments having significant risk, even where the disclosures are in accordance with the applicable financial reporting framework, the auditor may conclude that the disclosure of estimation uncertainty is inadequate in light of the circumstances and facts involved. The auditor's evaluation of the adequacy of disclosure of estimation uncertainty increases in importance the greater the range of possible outcomes of the complex financial instrument is in relation to materiality.
148. In some cases, the auditor may consider it appropriate to encourage management to describe, in the notes to the financial statements, the circumstances relating to the estimation uncertainty. ISA 705⁴⁹ provides guidance on the implications for the auditor's opinion when the auditor believes that management's disclosure of estimation uncertainty in the financial statements is inadequate or misleading.

Evaluating Audit Evidence

Evaluating the Overall Results of Valuations

149. Unless management is able to support its valuations of complex financial instruments, it will be difficult for the auditor to obtain sufficient appropriate audit evidence. However, as evidence about assumptions and the validity of models is necessarily less reliable than evidence of a market price taken from an active market, it may be necessary to look at more sources of evidence to accumulate sufficient appropriate evidence. For example, the auditor, or an auditor's expert, may use an independent model to compare its results with those of the model used by management in order to evaluate whether the values determined by management's model is reasonable.
150. Evaluating audit evidence for assertions about complex financial instruments requires considerable judgment because the assertions, especially those about valuation, may be based on highly subjective assumptions or be particularly sensitive to changes in the underlying assumptions. For example, valuation assertions may be based on assumptions

⁴⁸ ISA 540, paragraph 20

⁴⁹ ISA 705, *Modifications to the Opinion in the Independent Auditor's Report*

about the occurrence of future events for which expectations are difficult to develop or about conditions expected to exist a long time. Accordingly, competent persons could reach different conclusions about valuation estimates or estimates of valuation ranges. Considerable judgment also may be required in evaluating audit evidence for assertions based on features of the complex financial instrument and applicable accounting principles, including underlying data, that are both extremely complex.

151. Valuing complex financial instruments is not a precise science. Uncertainties over the reliability of market quotes, the validity of models and the accuracy of their calibration to actual market activity will exist, particularly for highly complex financial instruments that are not actively traded. Certain financial reporting frameworks may require or permit the entity to reserve for valuation uncertainties. For example, if a portfolio of such instruments were sold, a buyer would reduce their price to reflect these uncertainties and the risks that (s)he was thereby assuming. Estimating the level of reserve required for such factors involves a high level of judgment and will be specific to each entity and its applicable financial reporting framework. Consideration of all the factors taken into account in the valuation process and the use of experience and judgment will assist the auditor in evaluating the amount of any reserve required, if any. The auditor may need to draw on an auditor's expert to assist in doing this.
152. One important factor in evaluating the overall result is to consider whether counterparty risk (the risk that a counterparty to a transaction will not perform their side of the bargain) has been properly taken into account in valuing the complex financial instrument. It is inherent in mark to market pricing that counterparty risk is taken into account in arriving at the market price and an entity's pricing process may therefore have already dealt with counterparty risk. However, the auditor's testing of the valuation of the complex financial instrument in accordance with ISA 540 considers whether there are any other aspects of counterparty risk that have not properly been addressed, such as the possible need for an impairment provision in respect of any accrual accounted items, if permitted by the applicable financial reporting framework.
153. In addition, the auditor's testing of the valuations considers whether the valuations overall appear reasonable based on the auditor's industry knowledge, market trends and the auditor's understanding of other entities' valuations (having regard to client confidentiality) and other relevant price indicators. If the valuations appear to be consistently overly aggressive or conservative, this may be evidence of management bias.
154. While multiple sources of evidence help to corroborate management's valuation of complex financial instruments, it is important to understand whether these sources of evidence may be circular, or act to reinforce a misleading trend or misconception. For example, if both management and the auditor have used the same expert (such as a pricing service) to arrive at a valuation, it will be necessary for the auditor to perform other procedures to corroborate the valuation.

Evidence Considerations Relating to Management’s Use of Third-Party Expertise

155. ISA 500 establishes requirements for the auditor when information to be used as audit evidence has been prepared using the work of a management’s expert.⁵⁰ The extent of the auditor’s procedures in relation to a management’s expert and that expert’s work depend on the significance of the expert’s work for the auditor’s purposes. Evaluating the appropriateness of management’s expert’s work assists the auditor in assessing whether the prices or valuations supplied by a management’s expert provide sufficient appropriate audit evidence to support the valuations. Examples of procedures the auditor may perform include:
- Evaluating the competence, capabilities and objectivity of the third-party bank/other financial institution, for example: their relationship with the entity; their reputation and standing in the market; their experience with the particular types of instruments; and their understanding of the relevant financial reporting framework applicable to the valuations; and
 - Evaluating the appropriateness of the valuations and sensitivities developed by management’s expert, including assessing the appropriateness of the model(s) used and the key market variables and assumptions used in the model(s).
156. ISA 402 establishes requirements for the auditor to obtain sufficient appropriate audit evidence when the entity uses a service organization. The auditor may consider obtaining a report on the service organization’s internal controls by their auditors, if available, covering control objectives applicable to the valuations and evaluating the report to determine if the report can be used as audit evidence). However, reports on internal control will not provide evidence to support the valuation assertion and formal reports on controls and processes are less likely to exist in the context of broker quotes and pricing services, in particular for valuation in inactive markets.
157. If the auditor concludes that sufficient evidence cannot be obtained from the above procedures, for example where the third party uses internally developed models and software and does not allow access to information on the models, the auditor may not be able to obtain sufficient appropriate audit evidence about the valuation if the auditor is unable to perform other procedures to respond to the risks of material misstatement as explained in paragraph 13 of ISA 540, for example by developing a point estimate or a range to evaluate management’s point estimate. Paragraph 164 describes the implications of the auditor’s inability to obtain sufficient appropriate audit evidence.

Going Concern

158. Under the going concern assumption, an entity is ordinarily viewed as continuing in business for the foreseeable future with neither the intention nor the necessity of liquidation, ceasing trading or seeking protection from creditors pursuant to law or regulation. Accordingly, assets and liabilities are recorded on the basis that the entity will be able to realize its assets and discharge its liabilities in the normal course of business.

⁵⁰ ISA 500, paragraph 8

159. When an entity is faced with deteriorating market conditions, there may be an increased risk that the entity is unable to continue as a going concern. Going concern issues may arise with respect to poor risk management processes within the entity and potential losses on complex financial instruments, in particular when an entity engages in a high volume of complex financial instruments or holds complex structured products. Even if the use of the going concern is appropriate, a material uncertainty may exist, and it may be necessary for the entity to disclose this fact in the financial statements. However, complex financial instruments are only one factor that is considered in the entity's assessment of the entity's ability to continue as a going concern, and neither the entity nor the auditor can predict future events or conditions.
160. Consistency of disclosures about the use of the going concern assumption (including the entity's ability to continue as a going concern) and disclosures about the entity's liquidity and use of complex financial instruments is important to ensure the financial statements achieve fair presentation.

Written Representations

161. ISA 540 requires the auditor to obtain written representations from management and, where appropriate, those charged with governance whether they believe significant assumptions used making accounting estimates are reasonable.⁵¹ Depending on the volume and degree of complexity of financial instrument activities, written representations to support other evidence obtained about complex financial instruments may also include:
- Management's objectives with respect to complex financial instruments, for example, whether they are used for hedging, asset/liability management or investment purposes;
 - Representations about the appropriateness of presentation of the financial statements, for example the recording of financial instrument transactions as sales or financing transactions;
 - Representations about the financial statement disclosures concerning complex financial instruments, for example that:
 - The records reflect all financial instrument transactions; and
 - All embedded derivative instruments have been identified;
 - Whether all transactions have been conducted at arm's length and at market value;
 - The terms of transactions;
 - Whether there are any side agreements associated with any complex financial instruments;
 - Whether the entity has entered into any written options;

⁵¹ ISA 540, paragraph 22. Paragraph 4 of ISA 580 states that written representations from management do not provide sufficient appropriate audit evidence on their own about any of the matters with which they deal. If the auditor is otherwise unable to obtain sufficient appropriate audit evidence, this may constitute a limitation on the scope of the audit may have implications for the auditor's report.

- Management's intent and ability to carry out certain actions;⁵²
- If applicable, the appropriateness of the basis used by management to overcome the presumption relating to the use of fair values; and
- Whether subsequent events require adjustment to the valuations and disclosures included in the financial statements.

Forming an Opinion and Reporting on Financial Statements

Evaluating Misstatements⁵³

162. Based on the audit evidence obtained, the auditor may conclude that with respect to accounting estimates the evidence points to an estimate that differs from management's estimate regarding complex financial instruments, and that the difference between the auditor's estimate or range and management's estimate constitutes a misstatement. In such cases, where the auditor has developed a range and has concluded that using the auditor's range provides sufficient appropriate audit evidence, a management point estimate that lies outside the auditor's range would not be supported by audit evidence. In such cases, the misstatement is no less than the difference between management's point estimate and the nearest point of the auditor's range.
163. Professional judgment is important in circumstances where management's valuation of a complex financial instrument differs from the auditor's when the auditor has developed a model. Differences may relate to the use of different assumptions in the model, different methods or factual errors. If the auditor uses assumptions or methods that differ from management's, an understanding of management's assumptions and methods is necessary to assist the auditor in understanding and evaluating significant differences from management's point estimate or range.

Inability to Obtain Sufficient Appropriate Audit Evidence

164. Paragraphs 149–157 deal with the auditor's evaluation of audit evidence. In some cases, however, it may not be possible for the auditor to obtain sufficient appropriate audit evidence on which to base the opinion. This may be the case for example:
 - When management does not have an understanding of the methods and assumptions used by management's experts in preparing valuations.
 - When the auditor is unable to obtain sufficient appropriate audit evidence regarding the services provide by a service organization.
 - When the auditor is unable to obtain sufficient appropriate audit evidence about whether the going concern assumption is appropriate.

⁵² Paragraph A80 of ISA 540 provides examples of procedures that may be appropriate in the circumstances.

⁵³ ISA 450, *Evaluation of Misstatements Identified during the Audit*, deals with the auditor's responsibility to evaluate the effect of identified misstatements on the audit and of uncorrected misstatements, if any, on the financial statements.

ISA 705 provides guidance on the type of modified audit opinion that would be necessary in such circumstances.

Emphasis of Matter Paragraphs and Other Matter Paragraphs

165. ISA 706⁵⁴ deals with additional communication in the auditor's report using Emphasis of Matter and Other Matter paragraphs. An Emphasis of Matter paragraph to draw users' attention to matters presented or disclosed in the financial statements is not an alternative to modification of the auditor's opinion if the auditor is not able to obtain sufficient appropriate audit evidence. However, widespread use of Emphasis of Matter paragraphs diminishes the effectiveness of the auditor's communication of such matters. Nevertheless, an auditor may consider it necessary to include an Emphasis of Matter paragraph to highlight estimation uncertainty that affects measurements of complex financial instruments at fair value or the potential effects of inactive markets on an entity's ability to continue as a going concern (see paragraphs 158–160).

Communication with Those Charged with Governance and Others

166. ISA 260⁵⁵ deals with the auditor's responsibility to communicate with those charged with governance in an audit of financial statements. With respect to complex financial instruments, matters to be communicated to those charged with governance may include:

- A lack of management understanding of the nature or extent of the financial instrument activities or the risks associated with such activities;
- Significant deficiencies in the design or operation of the systems of internal control or risk management relating to the entity's financial instrument activities that the auditor has identified during the audit;⁵⁶
- Significant difficulties encountered when obtaining sufficient appropriate audit evidence relating to valuations performed by management or a management's expert, for example, where management is unable to obtain an understanding of the valuation methods, including the assumptions, used by the management's experts and such information is not made available to the auditor by management's expert;
- Significant differences in judgments between the auditor and management or a management's expert regarding valuations;
- The potential effects on the entity's financial statements of material risks and exposures required to be disclosed in the financial statements;

⁵⁴ ISA 706, *Emphasis of Matter Paragraphs and Other Matter Paragraphs in the Independent Auditor's Report*

⁵⁵ ISA 260, *Communicating with Those Charged with Governance*

⁵⁶ ISA 265, *Communicating Deficiencies in Internal Control to Those Charged with Governance and Management*, establishes requirements and provides guidance on communicating deficiencies in internal control to management, and communicating significant deficiencies in internal control to those charged with governance. It explains that deficiencies in internal control may be identified during the auditor's risk assessment procedures in accordance with ISA 315 or at any other stage of the audit.

- The auditor's views about the appropriateness of the selection of accounting policies and presentation of financial instrument transactions in the financial statements;
- The auditor's views about the qualitative aspects of the entity's accounting practices and financial reporting for complex financial instruments;
- A lack of comprehensive and clearly stated policies for the purchase, sale and holding of complex financial instruments, including operational controls, procedures for designating complex financial instruments as hedges, and monitoring exposures; or
- Failure to comply with ethical requirements.

The appropriate timing for communications will vary with the circumstances of the engagement; however, it may be appropriate to communicate significant difficulties encountered during the audit as soon as practicable if those charged with governance are able to assist the auditor to overcome the difficulty, or if it is likely to lead to a modified opinion.

167. Because of the uncertainties associated with the valuation of complex financial instruments, the potential effect on the financial statements of any significant risks may be of governance interest. The auditor may communicate the nature of significant assumptions used in fair value measurements, the degree of subjectivity involved in the development of the assumptions, and the relative materiality of the items being measured at fair value to the financial statements as a whole. In addition, the need for appropriate controls over commitments to enter into complex financial instrument contracts and over the subsequent measurement processes are matters that may give rise to the need for communication with those charged with governance.

Communications with Regulators and Others

168. In some cases, auditors may be required,⁵⁷ or may consider it appropriate, to communicate directly with regulators or prudential supervisors, in addition to those charged with governance, regarding matters relating to complex financial instruments. For example, in some jurisdictions, banking regulators and auditors are seeking closer cooperation to share information about the operation and application of controls over financial instrument activities, challenges in valuing complex financial instruments in inactive markets, and compliance with regulations. This enhanced coordination may be helpful to the auditor in identifying risks of material misstatement.

⁵⁷ For example, ISA 250 requires auditors to determine whether there is a responsibility to report identified or suspected non-compliance with laws and regulations to parties outside the entity. In addition, requirements concerning the auditor's communication to banking supervisors and others may be established in many countries either by law, by supervisory requirement or by formal agreement or protocol.

Appendix 1

(Ref: Para. 8)

Glossary of Terms

Cap—A series of call options based on a notional amount. The strike price of these options defines an upper limit to the underlying.

Collateral—Assets pledged by a borrower to secure a loan or other transaction; these are subject to seizure in the event of default.

Commodity—A physical substance, such as food, grains and metals that is interchangeable with other product of the same type.

Correlation—The degree to which contract prices of hedging instruments reflect price movements in the cash-market position. The correlation factor represents the potential effectiveness of hedging a cash-market instrument with a contract where the deliverable financial instrument differs from the cash-market instrument. Generally, the correlation factor is determined by regression analysis or some other method of technical analysis of market behavior.

Counterparty—The other party to a derivative transaction.

Dealer (for the purposes of this IAPS)—The person who commits the entity to a derivative transaction.

Derivative—A generic term used to categorize a wide variety of financial instruments whose value “depends on” or is “derived from” an underlying rate or price, such as interest rates, exchange rates, equity prices, or commodity prices. Many national financial reporting frameworks, and the International Accounting Standards contain definitions of derivatives. For example, International Accounting Standard (IAS) 39, “Financial Instruments: Recognition and Measurement” defines a derivative as a financial instrument:

- Whose value changes in response to the change in a specified interest rate, security price, commodity price, foreign exchange rate, index of prices or rates, a credit rating or credit index, or similar variable (sometimes called the “underlying”);
- That requires no initial net investment or little initial net investment relative to other types of contracts that have a similar response to changes in market conditions; and
- That is settled at a future date.

Embedded Derivative Instruments—Implicit or explicit terms in a contract or agreement that affect some or all of the cash flows or the value of other exchanges required by the contract in a manner similar to a derivative.

End User—An entity that enters into a financial transaction, either through an organized exchange or a broker, for the purpose of hedging, asset/liability management or speculating. End users consist primarily of corporations, government entities, institutional investors and financial institutions. The derivative activities of end users are often related the production or use of a commodity by the entity.

Exchange-Traded Derivatives—Derivatives traded under uniform rules through an organized exchange (i.e., futures and options).

Fair Value—The amount for which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties in an arm's length transaction.

Floor—A series of put options based on a notional amount. The strike price of these options defines a lower limit to the underlying.

Foreign Exchange Contracts—Contracts that provide an option for, or require a future exchange of foreign currency assets or liabilities.

Forward Contracts—A contract negotiated between two parties to purchase and sell a specified quantity of a financial instrument, foreign currency, index, or commodity at a price specified at the origination of the contract, with delivery and settlement at a specified future date.

Forward Rate Agreements—An agreement between two parties to exchange an amount determined by an interest rate differential at a given future date based on the difference between an agreed interest rate and a reference rate (LIBOR, Treasury bills, *etc.*) on a notional principal amount.

Futures Contracts—Exchange-traded forward contracts.

Hedge—A strategy that seeks to protect an entity against the risk of adverse price or interest-rate movements on certain of its assets, liabilities or anticipated transactions. A hedge is used to avoid or reduce risks by creating a relationship by which losses on certain positions are expected to be counterbalanced in whole or in part by gains on separate positions in another market.

Interest Rate Swap—A contract between two parties to exchange periodic interest payments on a notional amount (referred to as the notional principal) for a specified period. In the most common instance, an interest rate swap involves the exchange of streams of variable and fixed-rate interest payments.

Linear Contracts—Contracts that involve obligatory cash flows at a future date.

Liquidity—The capability of a financial instrument to be readily convertible into cash.

Non-Linear Contracts—Contracts that have option features where one party has the right, but not the obligation to demand that another party deliver the underlying item to it.

Notional Amount—A number of currency units, shares, bushels, pounds or other units specified in a derivative instrument.

Off-Balance Sheet Instrument—A derivative financial instrument that is not recorded on the balance sheet, although it may be disclosed.

Option—A contract that gives the holder (or purchaser) the right, but not the obligation to buy (call) or sell (put) a specific or standard commodity, or financial instrument, at a specified price during a specified period (the American option) or at a specified date (the European option) or dates (the Bermudan option).

Policy—Management's dictate of what should be done to effect control. A policy serves as the basis for procedures and their implementation.

Position—The status of the net of claims and obligations in financial instruments of an entity.

Risk Management—Using derivatives and other financial instruments to increase or decrease risks associated with existing or anticipated transactions.

Sensitivity Analysis—A general class of models designed to assess the risk of loss in market-risk-sensitive instruments based upon hypothetical changes in market rates or prices.

Settlement Date—The date on which derivative transactions are to be settled by delivery or receipt of the underlying product or instrument in return for payment of cash.

Speculation—Entering into an exposed position to maximize profits, that is, assuming risk in exchange for the opportunity to profit on anticipate market movements.

Swaption—A combination of a swap and an option.

Term Structure of Interest Rates—The relationship between interest rates of different terms. When interest rates of bonds are plotted graphically according to their interest rate terms, this is called the “yield curve.” Economists and investors believe that the shape of the yield curve reflects the market’s future expectation for interest rates and thereby provide predictive information concerning the conditions for monetary policy.

Trading—The buying and selling of financial instruments for short-term profit.

Underlying—A specified interest rate, security price, commodity price, foreign exchange rate, index of prices or rates, or other variable. An underlying may be a price or rate of an asset or liability, but it is not the asset or liability itself.

Value at Risk—A general class of models that provides a probabilistic assessment of the risk of loss in market-risk-sensitive instruments over a period of time, with a selected likelihood of occurrences based upon selected confidence intervals.

Volatility—A measure of the variability of the price of an asset or index.

Written Option—The writing, or sale, of an option contract that obligates the writer to fulfill the contract should the holder choose to exercise the option.

Appendix 2

(Ref: Para. 52)

Examples of Possible Internal Controls Relating to Complex Financial Instruments that May Exist at an Entity

The extent of an entity's use of complex financial instruments and the degree of complexity of the instruments are important determinants of the necessary level of sophistication of the entity's internal control.⁵⁸ For example, smaller entities may use less structured products and simple processes and procedures to achieve their objectives. It is the role of those charged with governance to determine an appropriate attitude towards the risks. It is management's role to monitor and manage the entity's exposures to those risks.

The following guidance provides examples of internal controls that may exist in an entity that deals in a high volume of financial instrument transactions, whether for trading or investing purposes. This guidance is not meant to be exhaustive and entities may establish different control environments and processes depending on their size, the industry in which they operate, and the extent of their financial instrument transactions.

The Entity's Control Environment

1. Though it is for management to determine what internal control is necessary to enable the preparation of financial statements that are free from material misstatement, effective internal control assists management and, where appropriate, those charged with governance to fulfill their responsibilities to prepare financial statements in accordance with the applicable financial reporting framework with respect to complex financial instruments.

An entity's internal control may be effective when management and those charged with government have:

- Established an appropriate control environment, including a commitment to competence, a clear organizational structure, and assignment of authority and responsibility. In particular, clear rules are needed on the extent to which those responsible for financial instrument activities are permitted to participate in the trading markets;⁵⁹ (see paragraphs 2–5)
- Established a risk assessment process relative to the size of the entity and the complexity of its financial instruments (for example, in some entities a formal risk management function may exist); (see paragraphs 6–12)

⁵⁸ See ISA 315, paragraph 12.

⁵⁹ Such rules should have regard to any legal or regulatory restrictions on using complex financial instruments. For example, certain public sector entities may not have the power to conduct business using derivative financial instruments.

- Established information systems that provide those charged with governance with an understanding of the nature of the complex financial instrument activities and the associated risks; (see paragraphs 13–14)
- Designed and implemented a system of internal control to:
 - Monitor risk and financial control;
 - Provide reasonable assurance that the entity's use of complex financial instruments is within its risk management policies; and
 - Ensure that the entity is in compliance with applicable laws and regulations; and
- Considered the integrity of the entity's accounting and financial reporting systems to ensure the reliability of management's financial reporting of financial instrument activities.

Commitment to Competence

2. The degree of complexity of some financial instrument activities may mean that only a few individuals within the entity fully understand those activities or have the expertise necessary to value the instruments on an ongoing basis. Significant use of complex financial instruments, without relevant expertise within the entity, therefore increases the risk of material misstatement.

Organizational Structure

3. Financial instrument activities may be run on either a centralized or a decentralized basis. Such activities and related decision making depend heavily on the flow of accurate, reliable, and timely management information. The difficulty of collecting and aggregating such information increases with the number of locations and businesses in which an entity is involved. The risks of material misstatement associated with financial instrument activities may increase with greater decentralization of control activities. This may especially be true where an entity is based in different locations, some perhaps in other countries.

Assignment of Authority and Responsibility

4. Providing direction, through clearly stated policies approved by those charged with governance, for the purchase, sale and holding of complex financial instruments, enables management to establish an approach to taking and managing business risks. These policies are most clear when they state the entity's objectives with regard to its risk management activities and the investment and hedging alternatives available to meet these objectives and reflect the:
 - Level of the entity's management expertise;
 - Sophistication of the entity's internal control and monitoring systems;
 - Entity's asset/liability structure;
 - Entity's capacity to maintain liquidity and absorb losses of capital;

- Types of complex financial instruments that management believes will meet its objectives; and
- Uses of complex financial instruments that management believes will meet its objectives, for example, whether derivatives may be used for speculative purposes or only for hedging purposes.

An entity's policies for the purchase, sale and holding of complex financial instruments are aligned with its attitude toward risk and the expertise of those involved in financial instrument activities.

5. An entity may have a culture that is generally focused on maintaining a high level of internal control. Because of the complexity of some treasury activities, this culture may not pervade the group of personnel responsible for financial instrument activities. Alternatively, because of the risks associated with financial instrument activities, management may enforce a more strict control environment than it does elsewhere within the entity. In entities without a treasury function, dealing in complex financial instruments may be rare and management's knowledge and experience limited.

The Entity's Risk Assessment Process

6. An entity's risk assessment process exists to establish how management identifies business risks relevant to financial reporting that derive from its use of complex financial instruments, including how management estimates the significance of the risks, assesses the likelihood of their occurrence and decides upon actions to manage them.
7. The entity's risk assessment process forms the basis for how management determines the risks to be managed. Risk assessment processes exist to ensure that management:
 - Understands the risks inherent in a complex financial instrument before they enter into it, including the objective of entering into the transaction and its structure;
 - Monitors their outstanding positions to understand how market conditions are affecting their exposures;
 - Has procedures in place to reduce or change risk exposure if necessary and, for entities heavily engaged in trading complex financial instruments, for managing reputational risk; and
 - Subjects these processes to rigorous supervision and review.

Appendix 3 provides examples of risks related to complex financial instruments to which entities may be exposed.

8. The structure implemented to monitor and manage exposure to risks should:
 - Be appropriate and consistent with the entity's attitude toward risk as determined by those charged with governance;
 - Specify the approval levels for the authorization of different types of complex financial instruments and transactions that may be entered into and for what purposes. The permitted instruments and approval levels should reflect the expertise

- of those involved in financial instrument activities, demonstrating management's commitment to competence;
- Set appropriate limits for the maximum allowable exposure to each type of risk (including approved counterparties). Levels of allowable exposure may vary depending on the type of risk, or counterparty;
 - Provide for the independent and timely monitoring of the financial risks and control activities; and
 - Provide for the independent and timely reporting of exposures, risks and the results of financial instrument activities in managing risk.
9. The types and levels of risks present in an entity are directly related to the types of complex financial instruments with which it deals, including the complexity of these instruments, and the volume of complex financial instruments transacted. For example, smaller entities other than financial institutions may not use models to value complex financial instruments, and therefore certain components of operational risk may be less relevant to the entity in designing controls to address risks and to the auditor in assessing those risks. In addition, financial liabilities are exposed to different risks than financial assets, in particular in relation to operational risk and credit risk.

Risk Management Function

10. Some entities, for example large financial institutions with a high volume of financial instrument transactions, may be required by law or regulation, or may choose, to establish a formal risk management function. This independent function is responsible for reporting on and monitoring financial instrument activities. Examples of key responsibilities in this area may include:
- Setting and monitoring risk management policy (including analyses of the risks to which an entity may be exposed);
 - Designing risk limit structures and ensuring these risk limits are implemented in practice;
 - Developing stress scenarios and subjecting open position portfolios to sensitivity analysis, including reviews of unusual movements in positions;
 - Reviewing and analyzing new financial instrument products; and
 - Independent price verification (IPV).
11. The relationship between the financial reporting and risk management functions is particularly important, in particular the linkage between the IPV process and the subsequent fair value measurement process. The level of uncertainties in the prices of complex financial instruments should be appropriately reflected in the methods in place for determining their measurement.

12. The volume and sophistication of financial instrument activity and relevant regulatory requirements will influence the entity's consideration whether to establish a risk management function and how the function may be structured. In entities that have not established a separate risk management function, for example entities with a relatively few number of complex financial instruments or financial instruments that are less complex, reporting on and monitoring financial instrument activities may be a component of the accounting function's responsibility or management's overall responsibility (see paragraph 18).

The Entity's Information Systems

13. Certain complex financial instruments may require a large number of accounting entries. As the sophistication or level of the financial instrument activities increases, it is necessary for the sophistication of the information system to also increase. Specific issues which can arise in respect to complex financial instruments include:
 - Information systems, in particular for smaller entities, not having the capability or not being appropriately configured to process financial instrument transactions, especially when the entity does not have any prior experience in dealing with complex financial instruments;
 - The potential diversity of systems required to process more complex transactions, and the need for regular reconciliations between them, in particular when the systems are not interfaced or may be subject to manual intervention;
 - The potential that more complex transactions, if they are only traded by a small number of individuals, may be valued or risk managed on spreadsheets rather than on main processing systems, and for the physical and logical password security around those spreadsheets to be more easily compromised;
 - The reliance on recruiting, training, and retaining qualified individuals, or engaging management's experts, to represent the accounting, processing, and risk management of transactions correctly initially on systems and to validate periodically that they continue to be correctly recorded;
 - A lack of review of exception logs from systems, external confirmations and broker quotes, where available, to validate the entries generated by the systems;
 - Difficulties in controlling and evaluating the key inputs to systems for valuation of complex financial instruments, particularly where those systems are maintained by the front office and/or the transactions in question are bespoke or thinly traded;
 - Failure to evaluate the design and calibration of complex models used to process these transactions initially and on a periodic basis;
 - The potential that management has not set up a model library, with controls around access, change and maintenance of individual models, in order to maintain a strong audit trail of the accredited versions of models and in order to prevent unauthorized access or amendments to those models;

- The disproportionate investment which may be required in risk management and control systems, where an entity only undertakes a limited number of financial instrument transactions, and the potential for misunderstanding of the output by management if they are not used to these types of transactions;
 - The potential requirement for third-party systems provision, for example from a service organization, to record, process, account for or risk manage appropriately financial instrument transactions, and the need to reconcile appropriately and challenge the output from those providers; and
 - Additional security and control considerations relevant to the use of an electronic network when an entity uses electronic commerce for financial instrument transactions.
14. Information systems relevant to financial reporting serve as an important source of information for the quantitative disclosures in the financial statements. However, entities may also develop and maintain non-financial systems used for internal reporting and to generate information included in qualitative disclosures, for example regarding risks and uncertainties or sensitivity analyses.

The Entity's Control Activities

15. Control activities over financial instrument transactions are designed to prevent or detect problems that hinder an entity from achieving its objectives. These objectives may be either operational, financial reporting, or compliance in nature. Control activities over complex financial instruments are designed relative to the complexity and volume of transactions of complex financial instruments and will generally include an appropriate authorization process, adequate segregation of duties and other policies and procedures designed to ensure that the entity's control objectives are met.
16. The function of an entity's deal initiation records is to identify clearly the nature and purpose of individual transactions and the rights and obligations arising under each complex financial instrument contract, including the enforceability of the contracts. In addition to the basic financial information, such as a notional amount, complete and accurate records at a minimum typically include:
- The identity of the dealer;
 - The identity of the person recording the transaction, when the transaction was initiated (including the date and time of the transaction), and how it was recorded in the entity's information systems; and
 - The nature and purpose of the transaction, including whether or not it is intended to hedge an underlying commercial exposure.

Authorization

17. Authorization can affect the financial statement assertions both directly and indirectly. For example, even if a transaction is executed outside an entity's policies, it nonetheless may be recorded and accounted for accurately. However, unauthorized transactions could significantly increase risk to the entity, thereby significantly increasing the risk of material

misstatement. To mitigate this risk, an entity will often establish a clear policy as to what transactions can be traded by whom and adherence to this policy will then be monitored by an entity's back office. Monitoring trading activities of individuals, for example by reviewing unusually high volumes or significant losses incurred, will assist management in ensuring compliance with the entity's policies and determining whether fraud has occurred.

Segregation of Duties

18. Segregation of duties and the assignment of personnel is an important control activity. Financial instrument activities may be categorized into a number of functions, including:

- Executing the transaction (dealing);
- Initiating cash payments and accepting cash receipts (settlements);
- Sending out trade confirmations and reconciling the differences between the entity's records and replies from counterparties, if any;
- Recording of all transactions correctly in the accounting records;
- Monitoring risk limits; and
- Monitoring positions and valuing complex financial instruments.

Where an entity is too small to achieve proper segregation of duties, the role of management and those charged with governance in monitoring financial instrument activities is of particular importance.

Monitoring of Controls

19. Entities' ongoing monitoring activities are designed to detect and correct any deficiencies in the effectiveness of internal controls over transactions for complex financial instruments and their valuation. It is important that there is adequate supervision and review of financial instrument activity within the entity. This includes:
- All controls being subject to review, for example:
 - A detailed review of the application of particular controls. An example would be the review by a supervisor of bank or custodian reconciliations; or
 - The monitoring of operational statistics such as the number of reconciling items or the difference between internal pricing and external pricing sources.
 - The need for robust IT controls and monitoring and validating their application; and
 - The need to ensure that information resulting from different processes and systems is adequately reconciled. For example, there is little benefit in a valuation process if the output from it is not reconciled properly into the general ledger.
20. In larger entities, sophisticated computer information systems generally keep track of financial instrument activities, and ensure that settlements occur when due. More complex computer systems may generate automatic postings to clearing accounts to monitor cash movements, and controls over processing are put in place to ensure that financial instrument

activities are correctly reflected in the entity's records. Computer systems may be designed to produce exception reports to alert management to situations where complex financial instruments have not been used within authorized limits or where transactions undertaken were not within the limits established for the chosen counterparties. However, even a sophisticated computer system may not ensure the completeness of financial instrument transactions. Accordingly, management may put additional procedures in place to ensure completeness of all transactions (as discussed in paragraphs 76–85 of the IAPS).

Appendix 3

(Ref: Appendix 2, para. 7)

Risks to which Entities May Be Exposed through Their Use of Complex Financial Instruments

The following list illustrates the principal types of risk, related to financial instrument activities, to which entities may be exposed. This list is not meant to be exhaustive and different terminology may be used to describe these risks or classify the components of individual risks. They include:

- (a) Operational risk, which relates to the specific processing required for financial instruments and which captures:
 - (i) The risk that confirmation and reconciliation controls are inadequate resulting in incomplete or inaccurate recording of financial instruments;
 - (ii) The risks that there is inappropriate documentation of hedged transactions and insufficient monitoring of these transactions;
 - (iii) The risk that transactions from a trade entry, operational processing, financial accounting or risk management perspective are split into individual transaction legs or cash flows, which do not reflect the economics of the overall trade, and which are therefore potentially incorrectly recorded, processed or risk managed;
 - (iv) The risk that undue reliance is placed by staff on the accuracy of model valuations or processing, without adequate review, and transactions are therefore incorrectly valued or risk managed;
 - (v) The risks that there is inadequate or non-timely maintenance of models used to measure financial instruments; and
 - (vi) The risk that undue reliance is placed by staff on information derived from value at risk or stand alone models, in managing financial instrument positions, with the result that they overlook the fundamentals of risk management and control of market, counterparty and operational risk for these types of transactions;
- (b) Market risk, which is the risk that the fair value or future cash flow of a financial instrument will fluctuate because of changes in market prices. Market risk includes currency risk, interest rate risk and other price risk.
 - (i) Currency risk, which is the risk that fair value or future cash flows of a financial instrument will fluctuate because of changes in foreign exchange rates.
 - (ii) Interest rate risk, which is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in market interest rates.
 - (iii) Other price risk, which is the risk that the fair value or future cash flows of an instrument will fluctuate because of changes in market prices (other than those arising from interest rate risk or currency risk), whether those changes are caused by factors

specific to the individual financial instrument or to its issuer, or factors affecting all similar instruments traded in the market. Other price risk includes volatility risk.

- (c) Valuation (or measurement) risk, which is the risk that the value of the financial instrument and the related sensitivities are determined incorrectly. This is closely related to market risk. Components of valuation (or measurement) risk are:
 - (i) Model risk, which is the risk that imperfections and subjectivity of valuation models used to determine the value of certain types of financial instrument are not properly understood and accounted for or reserved against.
 - (ii) Parameter (or assumption) risk, which is the risk that the assumptions on which inputs to models are based, are not appropriate. Parameter risk differs from model risk in that model risk refers to the appropriateness of the model and parameter risk refers to the appropriateness of the inputs to the model.
 - (iii) Price risk, which relates to changes in the level of prices due to changes in interest rates, foreign exchange rates, or other factors related to market volatilities of the underlying rate, index, or price. Price risk includes interest rate risk and currency risk.
 - (iv) Liquidity risk, which relates to the risk that an entity will encounter difficulty in meeting obligations associated with financial liabilities, for example changes in the ability to sell or dispose of the financial instrument. Financial instrument activities bear the additional risk that a lack of available contracts or counterparties may make it difficult to close out a transaction or enter into an offsetting contract.
 - (v) Basis risk, which is the risk associated with imperfect hedging where there is a difference between the fair value (or cash flows) of the hedged item and the fair value (or cash flows) of the hedging instrument. Basis risk may, for example, be affected by a lack of liquidity in either the hedged item or the hedging instrument resulting in changes to the correlation between them while the hedging contract is open.
 - (vi) Economic losses risk, which is the risk that an entity makes inappropriate trades based on information using valuation models or based on inputs or assumptions that are no longer relevant.
- (d) Credit (or counterparty) risk, which is the risk that one party to a financial instrument will cause a financial loss to another party by failing to discharge an obligation. Generally, a financial instrument has credit exposure only when the financial instrument has positive market value. That value represents an obligation of the counterparty and, therefore, an economic benefit that can be lost if the counterparty fails to fulfill its obligation. Furthermore, the market value of a financial instrument may fluctuate quickly, alternating between positive and negative values. The potential for rapid changes in prices, coupled with the structure of certain financial instruments, also can affect credit risk exposure. For example, highly leveraged financial instruments or financial instruments with extended time periods can result in credit risk exposure increasing quickly after a transaction has been undertaken.

Many financial instruments are traded under uniform rules through an organized exchange (exchange-traded instruments). Exchange traded instruments generally remove individual counterparty risk and substitute the clearing organization as the settling counterparty. Typically, the participants in an exchange-traded instrument settle changes in the value of their positions daily, which further mitigates credit risk. Other methods for minimizing credit risk include requiring the counterparty to offer collateral, or assigning a credit limit to each counterparty based on its credit rating.

In relation to the fair value of financial liabilities, changes in the entity's credit risk that may affect its value are known as the entity's own credit risk. This is the amount of change in fair value that is not attributable to changes in market conditions, and can often be difficult to measure.

- (e) Off-balance sheet risk, which is the risk of loss to the entity in excess of the amount, if any, of the asset or liability that is recognized on the balance sheet.
- (f) High volatility (leverage) risk, which is the risk that, due to high volatility or leverage embedded in a financial instrument, the financial or economic result might change rapidly (due to volatility) and substantially (due to leverage) within a relatively short period of time.
- (g) Settlement risk, which is the risk that one side of a transaction will be settled without consideration being received from the customer or counterparty. One method for minimizing settlement risk is to enter into a master netting agreement, which allows the parties to set off all their related payable and receivable positions at settlement.
- (h) Legal (enforceability) risk, which is the risk relating to losses resulting from a legal or regulatory action that invalidates or otherwise precludes performance by the end user or its counterparty under the terms of the contract or related netting arrangements. For example, legal risk could arise from insufficient or incorrect documentation for the contract, an inability to enforce a netting arrangement in bankruptcy, adverse changes in tax laws, or statutes that prohibit entities from investing in certain types of financial instruments.
- (i) Suitability risk, which is the risk that the entity selling financial instruments may be subject to claims made by the counterparties, who are not suitable in term of their ability and business operations to buy such products.
- (j) Disclosure risk, which is the risk that the entity includes incorrect disclosures, or omits disclosures, relating to financial instruments.

Appendix 4

(Ref: Para. 25)

Additional Information about Broker Quotes and Pricing Services⁶⁰

Broker Quotes

A quote obtained from a broker is generally an indicative price and not a binding offer (unless the broker is a market maker). In a liquid market, a broker quote is likely to reflect actual transactions in the instrument. However, as the number of transactions decreases, brokers rely more on proprietary models with inputs based on the information available to the broker. For example, they might use information about observable market transactions and assumptions based on their knowledge of the current market for the instrument to arrive at the quoted price. A broker quote might be in the form of an indicative price or an indicative spread for an instrument.

Quotes are more representationally faithful if they come from brokers that have a substantial presence in the market and the experience and expertise to provide a representationally faithful quote for the instrument.

A broker quote generally is not a binding offer to buy, but the more it is based on actual market transactions the more likely it is to represent fair value.

Some broker quotes might be provided by the broker who originally brokered the instrument. In such circumstances, that broker might have the most detailed information about the instrument and hence might be best placed to arrive at a representationally faithful price.

Pricing Services

Pricing services differ from brokers in that pricing services do not transact in the instruments for which they provide pricing information. There are two main types of pricing service:

- (a) Pricing services that use a proprietary model to estimate a price.
- (b) Consensus pricing services.

Pricing Services Using Proprietary Models

Pricing services typically provide prices on a wider range of simpler instruments for which widely accepted standard pricing models are used. However, because of this, some pricing services might use general assumptions across a range of assets, potentially resulting in prices that might not accurately reflect the instrument being valued. The longer a pricing service has been in existence, the more time it has had to develop the pricing expertise to measure fair value.

⁶⁰ This material is extracted from the October 2008 IASB Expert Advisory Panel report, “Measuring and disclosing the fair value of financial instruments in markets that are no longer active.”

Consensus Pricing Services

Consensus pricing services obtain pricing information about an instrument from several participating entities (subscribers). Each subscriber submits prices to the pricing service. The pricing service treats this information confidentially. The pricing service returns to each subscriber the consensus price, which is usually an arithmetical average of the data after a data cleansing routine has been employed, and submission statistics that provide information about the quality of each subscriber's submission compared with the other subscribers. This information might include standard deviations or other data that allows the subscriber to assess whether the prices submitted to the service provider were dispersed or whether they formed a tight cluster. When consensus data are widely dispersed, the consensus price might be more subjective and need further review.

For some markets, such as for exotic derivatives, consensus pricing services might constitute the best available data. However, many factors are considered when assessing the representational faithfulness of the consensus prices, for example, whether the prices submitted by the consensus subscribers reflect actual transactions or just indicative prices based on their own models.

The number of sources from which prices have been obtained and the quality of the sources are key factors in the quality of the consensus data. A consensus price determined from a large number of high quality subscribers might provide a more representationally faithful price than a consensus of only a few subscribers. However, although a consensus price might be derived from a large number of different subscribers, if none is a leading participant in the relevant market then the consensus price might not be meaningful. For example, for some instruments in the commodities markets there are only a limited number of subscribers and those subscribers are leading market participants. However, consensus pricing services might receive submissions from many other subscribers. In such circumstances, it is possible that many of the submissions received by the pricing service will not reflect actual transactions and an entity places less reliance on these when measuring fair value.

Consensus pricing service providers might use data cleansing routines (algorithms) to eliminate outlying prices, with the aim of increasing the reliability of the consensus data. A cleansing routine that is too strict could remove valid data from the consensus price. Conversely, a cleansing routine that is not rigorous enough might include weak data in arriving at the consensus price.

Submitted prices might represent a mid-level price rather than a bid price or an offer price.

On occasion, consensus data might indicate that the distribution of prices might not be normal in the statistical sense. One example of this is when the data indicate that the distribution of prices received from consensus pricing services is bimodal, i.e., the submitted prices are clustered around two differing price points. If so, the average price is a price at which nobody will trade. In such circumstances, it is possible that participating entities are using two different types of model to arrive at prices. Consensus pricing distributions might not be normal. Consensus services might exist for only a relatively small subset of products, for example for a limited range of maturities. When the consensus data have been found to be a faithful representation of the price at which an orderly transaction would take place between market participants, the information can be used to calibrate models used to price similar instruments. However,

calibrating models to consensus data is not always straightforward. For simpler products when the industry has converged on a common modelling approach, it is possible to calibrate models with some confidence. But it is harder to do this for more complex products with more complex models, and in such cases calibration might be highly subjective.