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## Auditing derivative instruments, hedging activities, and investments in securities, new edition as of March 15, 2001; Audit and accounting guide:

American Institute of Certified Public Accountants. Financial Instruments Task Force

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**AICPA AUDIT GUIDE**

**AICPA**

AMERICAN INSTITUTE OF CERTIFIED PUBLIC ACCOUNTANTS

***AUDITING DERIVATIVE  
INSTRUMENTS,  
HEDGING ACTIVITIES,  
AND INVESTMENTS  
IN SECURITIES***

*New Edition as of March 15, 2001*

**AUDITING DERIVATIVE INSTRUMENTS, HEDGING ACTIVITIES, AND INVESTMENTS IN SECURITIES**

**AICPA**

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**AICPA AUDIT GUIDE**

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INSTRUMENTS,  
HEDGING ACTIVITIES,  
AND INVESTMENTS  
IN SECURITIES***

***New Edition as of March 15, 2001***

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## NOTICE TO READERS

This AICPA Audit Guide has been developed under the supervision of the AICPA Financial Instruments Task Force to provide practical guidance for implementing SAS No. 92, *Auditing Derivative Instruments, Hedging Activities, and Investments in Securities*. The AICPA Auditing Standards Board has found the descriptions of auditing standards, procedures, and practices in this Audit Guide to be consistent with existing standards covered by rule 202 of the AICPA Code of Professional Conduct. Descriptions of auditing standards, procedures, and practices in Audit Guides are not as authoritative as pronouncements of the Auditing Standards Board, but AICPA members should be aware that they may have to justify a departure from such descriptions if the quality of their work is questioned.

This Audit Guide also includes descriptions of accounting principles related to derivative instruments, hedging activities, and investments in securities. This Audit Guide is intended to be helpful in pointing to generally accepted accounting principles related to derivative instruments, hedging activities, and investments in securities; however, it does not have the authority of the original accounting pronouncements. Therefore, readers should not use this Guide as their source of accounting guidance for derivative instruments, hedging activities, and investments in securities, but should instead rely on the referred original accounting pronouncements in their entirety.

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## Chapter 1

### Introduction

**1.01** Deregulation, foreign exchange and interest rate volatility, and tax law changes have spawned the creation of innovative and complex derivative instruments and securities. The creation of these instruments gave rise to inconsistent accounting, and solutions developed on an ad hoc basis.

**1.02** In the mid-1980s, the Financial Accounting Standards Board (FASB) began a comprehensive project to address several separate, though related, issues, including—

- How derivative instruments and investments in debt and equity securities should be measured.
- How to account for transactions that seek to transfer market and credit risks (hedging activities) and for the assets or liabilities to which the risk-transferring items are related (hedged items).
- How to determine when derecognition is appropriate, such as whether securities should be considered sold if there is recourse or other continuing involvement with them.
- How to determine when nonrecognition and offsetting related assets and liabilities are appropriate.
- How issuers should account for instruments that have both debt and equity characteristics.

Generally beginning with the issuance in 1990 of FASB Statement No. 105, *Disclosure of Information about Financial Instruments with Off-Balance-Sheet Risk and Financial Instruments with Concentrations of Credit Risk*, the FASB, Emerging Issues Task Force (EITF), Securities and Exchange Commission (SEC) and Accounting Standards Executive Committee (AcSEC) have provided a wide variety of accounting guidance on these and other issues related to derivative instruments, hedging activities, and investments in securities.

**1.03** For auditors, the increase in the number and use of complex derivative instruments and securities, coupled with the sometimes equally complex accounting guidance, have resulted in changes in the approaches to auditing the financial statements of many entities. For example, evaluating audit evidence related to assertions about derivative instruments frequently requires the use of considerable judgment, particularly for valuation assertions, which can be particularly sensitive to changes in underlying assumptions or based on highly subjective estimates.

**1.04** SAS No. 92, *Auditing Derivative Instruments, Hedging Activities, and Investments in Securities* (AICPA, *Professional Standards*, vol. 1, AU sec. 332), provides guidance to auditors in planning and performing auditing procedures for financial statement assertions about derivative instruments, hedging activities, and investments in securities. The SAS and this Audit Guide refer to derivative instruments as *derivatives* and investments in securities as *securities*.

**1.05** Among other things, SAS No. 92—

- Cautions that the auditor may need special skill or knowledge to plan and perform auditing procedures for assertions about derivatives and securities and provides guidance for obtaining the special skill or knowledge.

- Provides guidance on inherent risk assessment for assertions about derivatives and securities.
- Provides guidance on control risk assessment for assertions about derivatives and securities, including considerations when one or more service organizations provide services for the entity's derivatives and securities.
- Provides guidance on the auditor's considerations in designing substantive procedures based on risk assessments for each of the five broad categories of financial statement assertions.
- Cautions that a service organization's services may affect the nature, timing, and extent of substantive procedures in a variety of ways, including the need to assess control risk below maximum for one or more assertions in certain circumstances.
- Provides guidance on designing substantive procedures of valuation assertions based on cost, investee's financial results, and fair value, including guidance on testing assertions about the fair value of derivatives and securities based on a model and guidance for evaluating management's consideration of the need to recognize impairment losses.
- Cautions that evaluating evidential matter for valuation assertions about derivatives and securities may require the auditor to use considerable judgment and provides guidance for those situations.
- Provides guidance on auditing assertions about hedging activities.
- Provides guidance on auditing assertions about securities based on management's intent and ability, including consideration of generally accepted accounting principles that require management to document its intentions.

The SAS is effective for audits of financial statements for fiscal years ending on or after June 30, 2001. Early application is permitted.

**1.06** This Audit Guide was issued concurrent with SAS No. 92. The purpose of this Guide is to provide practical guidance for implementing the SAS on all types of audit engagements. The suggested auditing procedures contained in this Guide do not increase or otherwise modify the auditor's responsibilities described in SAS No. 92. Rather, the suggested procedures in this Guide are intended to clarify and illustrate the application of the requirements of SAS No. 92. The first part of this Guide consists of detailed discussions and is followed by several case studies.

- The detailed discussions in chapters 2 through 6 provide an in-depth look at applying the guidance in SAS No. 92. This group of chapters begins with an overview of derivatives and securities and how they are used by various entities (chapter 2). Chapter 3 summarizes the accounting guidance for derivatives and securities. Chapters 4, 5, and 6 discuss the three elements of the audit risk model: inherent risk assessment, control risk assessment, and designing substantive procedures based on risk assessments.
- The final eight chapters (that is, chapters 7 through 14) consist of case studies. Each case study focuses on how SAS No. 92 would be applied to gather audit evidence about a specific derivative or security. Various types of derivatives are covered, such as swaps, options, forwards and futures, along with an embedded derivative and debt and equity securities.

**1.07** The case studies are intended to illustrate the application of SAS No. 92 in a variety of specific sets of facts and circumstances. This Guide was developed prior to the effective date of FASB Statement No. 133, *Accounting for Derivative Instruments and Hedging Activities*, as amended. The case studies were designed to illustrate basic considerations in auditing assertions about derivatives covered by FASB Statement No. 133, for example, by generally assuming that the hedging relationships illustrated are completely effective throughout the hedging period. Additional timely guidance will be provided through updates to this Guide to illustrate other auditing considerations that will be required as entities apply FASB Statement No. 133 and related interpretive accounting guidance. For example, updates will include expanded explanatory material and additional case studies addressing auditing considerations when the hedging relationships are more complex, have some ineffectiveness, and require more complex assessments of hedging effectiveness using the dollar-offset method and/or regression analysis, and when hedge accounting ceases to be appropriate in an existing hedging relationship. Updates will also address practice issues that arise in auditing assertions about securities. The auditor may therefore encounter assertions about derivatives and securities for which the design of procedures is not illustrated in this Guide, such as assertions about hedging relationships that have some ineffectiveness. In all audits of assertions about derivatives and securities, including those based on facts and circumstances similar to the ones assumed in case studies in this Guide, the auditor should design substantive procedures based on the assessed levels of inherent risk and control risk for the assertions.

**1.08** Chapter 3 and other parts of this Guide summarize selected accounting guidance on derivatives and securities. These summaries are intended merely to provide background information to help auditors understand and implement the auditing guidance contained in SAS No. 92 and this Guide. Auditors considering whether the measurement and disclosure of an entity's derivatives and securities are in conformity with generally accepted accounting principles should refer to the applicable standards and interpretive accounting guidance.

## Chapter 2

# *An Overview of Derivatives and Securities*

**2.01** Since the earliest of business transactions, creative techniques have been employed in the formation and conduct of business. For example, the Greek philosopher Thales of Miletus studied the weather patterns and astronomical charts and concluded that the upcoming olive crop would be one of the largest on record. Armed with that knowledge, he visited all the olive press owners in the area. In return for a payment from Thales, the press owners granted Thales the exclusive right to use their presses during the upcoming harvest. The harvest came, and, as Thales had predicted, it was truly a bumper crop. Olive presses were in high demand. With his exclusive right to all the presses, Thales was able to charge whatever he wanted for their use.

**2.02** The story of Thales illustrates two conditions that continue to help shape the creation of derivatives and securities today, a business need and innovation.

- Thales' contract helped solve a business problem faced by the owners of the olive presses. Before Thales, the owners' profits varied according to the size of the olive harvest. Thales gave them a way to guarantee a minimum level of revenue.
- Thales' contract was not just a product of his analytical skills (the ability to predict the weather), but also a function of his imagination. He used his knowledge to create something new.

**2.03** Entities enter into derivatives and securities transactions for a wide variety of business purposes, for example—

- Debt and equity securities provide a source of income through investment or resale.
- Derivatives are used for investment, risk management, or both.

**2.04** If a derivative is to be viable and useful, it must fill an economic need. Although the various participants in the derivatives markets have different goals, the fundamental purpose of derivatives is the transfer of risk; that is, the ability to transfer the risk of changes in the fair value or cash flows of an asset, liability, or future transaction. All other financial goals, uses, and activities concerning derivatives and the derivatives markets are based on this fundamental economic purpose.

**2.05** Participants in the derivatives markets are made up of—

- Financial intermediaries.
- Exchanges that maintain an orderly market.
- Traders who buy and sell derivatives.
- End users.

Financial intermediaries and exchanges generate earnings by charging commissions and related fees on the purchase and sale of derivatives. Traders seek to generate earnings from the actual purchase and sale of derivatives.

**2.06** There are two basic types of end users of derivatives—hedgers and investors.

- *Hedgers.* The essential goal of hedgers is to reduce the risk of loss, reduce the variability of future outcomes, or both. The hedger enters into a derivative to protect against changes in the fair value or cash flows of an asset, liability, or future transaction. The expected result is to build or protect earnings and cash flows. The financial impact of changes in the fair value of the derivative is expected to offset as much as possible the financial impact of changes in the fair value or cash flows of an asset, liability, or future transaction. Hedging is a business practice used by many types of entities, including manufacturers, not-for-profit organizations, banks, insurance companies, and construction-related contractors. It is the predominant business use of derivatives.
- *Investors.* Although hedgers want to reduce or eliminate the effect of changes in fair value or cash flows, investors want to profit from such changes. They take positions, either long or short, in derivatives, based on their expectation of a change in the fair value of the derivatives, in order to generate earnings and cash flows. An arbitrageur is an investor who attempts to lock in near risk-free earnings by simultaneously entering into the purchase and sale of substantially identical financial instruments. The arbitrageur's goal is to profit from price differences between the two instruments by identifying price relationships or differentials that the markets will correct within a short period of time.

**2.07** As the nature of business changes, the types and uses of derivatives and securities also change. Since the 1980s, the pace of financial innovation has accelerated sharply. Faced with rapidly changing business conditions and drawing on a large number of creative financial minds, entities have used an ever-growing variety of derivatives and securities. The dynamic nature of financial markets together with the increasing number of complex derivatives and securities pose unique challenges for auditors. The purpose of this chapter is to provide a basic understanding of derivatives and securities, which is critical if auditors are to successfully meet those challenges. This chapter defines derivatives and securities and then discusses the types, business purpose and risk characteristics of various instruments.

## Definition and Uses of Derivatives

### Definition

**2.08** Derivatives get their name because they derive their value from movements in an underlying, such as changes in the price of a security or a commodity. For example, a stock option contract derives its value from changes in the price of the underlying stock—as the price of the stock fluctuates, so too does the price of the related option. SAS No. 92 uses the definition of derivative that is in FASB Statement No. 133. Under that Statement, a derivative is a financial instrument or other contract with all three of the following characteristics.

- It has (1) one or more underlyings and (2) one or more notional amounts or payment provisions or both. Those terms determine the amount of the settlement or settlements, and, in some cases, whether or not a settlement is required.
- It requires no initial net investment or an initial net investment that is smaller than would be required for other types of contracts that would be expected to have a similar response to changes in market factors.



- Its terms require or permit net settlement, it can readily be settled net by a means outside the contract, or it provides for delivery of an asset that puts the recipient in a position not substantially different from net settlement.

**2.09** Knowledge of the following terms will be helpful in considering whether a financial instrument or other contract meets the definition of a derivative.

- *Underlying.* An underlying is 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.
- *Notional amount.* A notional amount is a number of currency units, shares, bushels, pounds, or other units specified in a derivative. The settlement of a derivative is a function of the notional amount and the underlying. For example, the settlement of an interest rate swap is determined by multiplying the interest rate (the underlying) by the notional amount. Reference of a notional amount, however, is not an essential characteristic of a derivative; a payment provision may be used instead.
- *Payment provision.* A payment provision specifies a fixed or determinable settlement to be made if the underlying behaves in a specified manner.
- *Initial net investment.* Many derivatives do not require any initial investment, but some require an initial net investment, either as compensation for the time value of money or for terms that are more or less favorable than market conditions.
- *Net settlement.* Under a net settlement agreement, neither party is required to deliver an asset that is associated with the underlying or that has a principal amount, stated amount, face value, number of shares, or other denomination that is equal to the notional amount. For example, most interest rate swaps do not require that either party deliver interest-bearing assets with a principal amount equal to the notional amount of the contract.

**2.10** Examples of common derivatives are—

- *Options,* which allow, but do not require, the holder (or purchaser) to buy (call) or sell (put) a specific or standard commodity or financial instrument, at a specified price during a specified period (an American option) or at a specified date (a European option). Examples are call options to acquire an ownership interest in an entity or put options to dispose of an ownership interest in an entity. Other examples are interest rate caps, interest rate floors, interest rate collars (which have a cap and a floor), and swaptions (which have the features of a swap and an option).
- *Forwards,* which are negotiated between two parties to purchase and sell a specific quantity of a financial instrument, foreign currency, or commodity at a price specified at origination of the contract, with delivery and settlement at a specified future date.
- *Futures,* which are forward-based standardized contracts to make or take delivery of a specified financial instrument, foreign currency, or commodity at a specified future date or during a specified period at a specified price or yield.

- *Swaps*, which are forward-based contracts in which two parties agree to swap streams of payments over a specified period of time. An example is an interest-rate swap in which one party agrees to make payments based on a fixed rate and the other party agrees to make payments based on a variable rate. Other examples are basis swaps where both rates are variable but are tied to different index rates and fixed-rate-currency swaps whereby two counterparties exchange fixed-rate interest in one currency for fixed-rate interest in another currency.

**2.11** A derivative may be a freestanding contract or it may be an embedded feature of a contract. Contracts that do not in their entirety meet the definition of a derivative (for example, bonds, insurance policies, and leases) may contain terms that affect the cash flows or the value of other exchanges in a manner similar to a derivative. The effect of these so-called “embedded derivatives” is that the cash flows or other exchanges otherwise required by the contract will be modified based on the underlying.

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*Examples and Illustrations.* The case studies included in later chapters of this Guide provide more details on how various derivatives are structured, priced, and entered into:

- Options—chapters 11 and 14
  - Futures—chapter 10
  - Embedded derivatives—chapter 12
  - Swaps—chapter 13
- 

## Hedging Activities and Managing Risk

**2.12** Entities that use derivatives to manage risk are involved in hedging activities. Hedging is a risk alteration activity that protects the entity against the risk of adverse changes in the fair values or cash flows of assets, liabilities, or future transactions. A hedge is a defensive strategy. It is used to alter risks by creating a relationship by which losses on certain positions (assets, liabilities, or future transactions) are expected to be counterbalanced in whole or in part by gains on separate positions in another market.

**2.13** FASB Statement No. 133 provides guidance on three types of hedging activities:

- A hedge of the exposure to changes in the fair value of a recognized asset or liability, or of an unrecognized firm commitment, that are attributable to a particular risk (referred to as a *fair value hedge*)
- A hedge of the exposure to variability in the cash flows of a recognized asset or liability, or of a forecasted transaction, that is attributable to a particular risk (referred to as a *cash flow hedge*)
- Foreign currency hedges:
  - A fair value hedge of an unrecognized firm commitment or a recognized asset or liability, including an available-for-sale security (a foreign currency fair value hedge)
  - A cash flow hedge of a forecasted transaction, an unrecognized firm commitment, the forecasted functional-currency-equivalent cash flows associated with a recognized asset or liability, or a forecasted intercompany transaction (a foreign currency cash flow hedge)
  - A hedge of a net investment in a foreign operation

2.14 Exhibit 2-1 describes fair value hedging strategies, and exhibit 2-2 describes cash flow hedging strategies. Foreign currency hedges are discussed in chapter 3.

<b>Exhibit 2-1 Common Fair Value Hedging Strategies *</b>	
<b>Fair Value Exposure</b>	<b>Hedging Strategy</b>
<i>Recognized assets and liabilities</i>	
Fixed-rate assets—exposure to variability in fair value	Convert the interest received to variable by entering into an interest rate swap. Terms of the swap call for receipt of interest at a variable rate and payment of interest at a fixed rate.  Lock in a minimum value by purchasing a put option to sell the asset at a specified price.
Fixed-rate liabilities—exposure to variability in fair value	Convert the interest paid to variable by entering into an interest rate swap. Terms of the swap call for receipt of interest at a fixed rate and payment of interest at a variable rate.  Lock in a maximum value by purchasing an interest rate floor option.
<i>Fixed commitments</i>	
Commitment to issue a fixed-rate debt obligation—exposure to variability in fair value due to changes in market interest rates to date of issuance	Participate in changes in market interest rates from the commitment date through the date of issuance by entering into interest rate futures contracts.
Commitment to purchase inventory—exposure to variability in fair value due to changes in market prices to date of purchase	Participate in changes in the fair value of the inventory to date of purchase by entering into a forward contract to sell inventory.
Commitment to sell inventory—exposure to variability in fair value due to changes in market prices to date of sale	Participate in changes in the fair value of the inventory to date of sale by entering into a forward contract to purchase inventory.

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*Examples and Illustrations.* Examples of fair value hedges are presented in chapters 11 and 13.

**Exhibit 2-2**  
**Common Cash Flow Hedging Strategies\***

<b>Cash Flow Exposure</b>	<b>Hedging Strategy</b>
<i>Recognized assets and liabilities</i>	
Variable-rate assets—exposure to variability in interest receipts	Convert the interest received to fixed by entering into an interest rate swap. Terms of the swap call for receipt of interest at a fixed rate and payment of interest at a variable rate.
	Lock in a minimum yield by purchasing an interest rate floor option.
Variable-rate liabilities—exposure to variability in interest payments	Convert the interest paid to fixed by entering into an interest rate swap. Terms of the swap call for receipt of interest at a variable rate and payment of interest at a fixed rate.
	Lock in a maximum cost of funds by purchasing an interest rate cap option.
<i>Forecasted transactions</i>	
Forecasted sale of a debt security—exposure to variability in market prices to date of sale	Lock in a minimum price on the forecasted sale of a debt security by purchasing a put option.
Forecasted issuance of a debt obligation—exposure to variability in market interest rates to date of issuance	Fix the contractual interest rate on the forecasted issuance of a debt obligation by entering into an interest rate agreement.
Forecasted purchase of inventory—exposure to variability in market prices to date of purchase	Lock in the cost of a forecasted purchase of inventory by entering into a forward contract to purchase inventory.
Forecasted sale of inventory—exposure to variability in market prices to date of sale	Lock in the sales price of inventory by entering into a forward contract to sell inventory.

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*Examples and Illustrations.* Examples of cash flow hedges are presented in chapters 10 and 14.

## Hedging Examples

**2.15** The following examples illustrate how derivatives can be used as a hedge to manage risk.

### *Fair Value Hedge of a Titanium Firm Commitment*

*Description:* ActionSportsCo is required by its supplier to lock in the price of titanium purchases that will occur in six months. At January 1, 20X1, ActionSportsCo enters into a firm commitment with its titanium supplier to purchase 10,000 units of titanium at June 30, 20X1, for \$310 per unit.

*Sensitivity:* ActionSportsCo has a long firm commitment, which means that the entity has been placed economically in an ownership position and is locked into a price for titanium. ActionSportsCo does not want to be locked into this price; it wants to pay the market price at June 30, 20X1, but its supplier requires this commitment.

*Transaction:* To unlock this commitment and be able to pay the market price for titanium at June 30, 20X1, ActionSportsCo takes a short position in titanium by entering into a forward contract on January 1, 20X1. The entity agrees to sell 10,000 units of titanium at the forward price of \$310 per unit at June 30, 20X1, to offset the January 1, 20X1, firm commitment to purchase from its supplier. Thus, if prices decrease below \$310 per unit, the short position in the forward contract will gain in value, offsetting the above-market cost of the titanium ActionSportsCo is committed to pay at June 30, 20X1.

*Settlement:* On June 30, 20X1, the spot rate for titanium is \$285 per unit. On the forward contract, ActionSportsCo has a gain of \$250,000 ( $\$25 [\$310 \text{ less } \$285] \text{ per unit times } 10,000 \text{ units}$ ). This gain offsets the \$250,000 loss on the firm commitment, which is the amount above the then current market price the entity was obligated to pay its supplier.

#### *Cash Flow Hedge of a Forecasted Transaction*

*Description:* On January 1, 20X1, XYZ Company forecasts borrowing \$100 million at December 31, 20X1. The debt will be fixed-rate and noncallable, with a 5-year term.

*Sensitivity:* XYZ wants to lock in the risk-free rate component of its total interest rate in effect at January 1, 20X1.

*Transaction:* XYZ hedges the variability of the debt proceeds by entering into a 1-year futures contract to sell 5-year Treasury notes at December 31, 20X1, at the forward rate of 6 percent. If rates increase, the short position in the futures contract will gain in value, offsetting the higher borrowing cost at December 31, 20X1.

*Settlement:* On December 31, 20X1, the interest rate on 5-year Treasury notes was 7 percent. This rise in interest rates increased the value of XYZ's futures contract. XYZ closed its futures position (for example, by entering into an offsetting futures contract). The realized gain is included in other comprehensive income and reclassified into earnings over the 5-year term of the debt, resulting in a 6 percent risk-free rate component, which was the risk-free rate at January 1, 20X1.

#### *Cash Flow Hedge of a Variable-Rate Debt*

*Description:* On January 1, 20X1, XYZ issued a \$100 million note based on the London Interbank Offered Rate (LIBOR), with semiannual payments and semiannual variable-rate reset. The debt is noncallable, with a 5-year term. The current LIBOR rate is 5.7 percent.

*Sensitivity:* XYZ is exposed to changes in interest rates and wants to lock in an 8 percent fixed rate. (Note: XYZ did not issue fixed-rate debt in the first place because it has a low credit rating and found it more cost-effective to issue a variable-rate debt and then enter into a swap to create a fixed-rate liability.)

*Transaction:* XYZ enters into an interest rate swap to pay 8 percent fixed and receive LIBOR plus 2 percent. The swap terms include a \$100 million notional principal, a 5-year term, and semiannual variable-rate reset. At the hedge inception, the swap is at-the-money. The swap fixes the semi-annual net interest expense at \$4 million.

*Settlement:* At each interest payment date, XYZ receives from (or pays to) the counterparty the difference between \$4 million (semi-annual fixed-rate interest) and the amount due on the variable-rate debt, achieving fixed 8 percent debt.

## Definitions and Examples of Securities

**2.16** SAS No. 92 uses the definitions of debt and equity securities that are in FASB Statement No. 115, *Accounting for Certain Investments in Debt and Equity Securities*. However, although SAS No. 92 uses those definitions, its scope includes securities that meet the definitions but are excluded from the scope of FASB Statement No. 115. For example, investments accounted for by the equity method meet the definition of an equity security and are included in the scope of SAS No. 92, despite the fact they are excluded from the provisions of FASB Statement No. 115.

### Debt Securities

**2.17** A debt security represents a creditor relationship with the issuer of the security. Under the guidance contained in FASB Statement No. 115, a debt security may also be—

- Preferred stock that by its terms either must be redeemed by the issuing enterprise or is redeemable at the option of the investor.
- A collateralized mortgage obligation (CMO) or other instrument that is issued in equity form but is required to be accounted for as a nonequity instrument, regardless of how that instrument is classified (that is, whether equity or debt) in the issuer's statement of financial position.

**2.18** The most common types of debt securities include—

- U.S. government or municipal securities.
- Corporate bonds and commercial paper.
- Convertible debt.

**2.19** It is not uncommon for entities to invest in securitized debt instruments, which also meet the definition of debt security contained in FASB Statement No. 115. The most common of these instruments are CMOs, which are collateralized by a pool of mortgages. The cash flows of the collateral are used to fund the return on the investment to investors. CMOs are issued in segments, or tranches, which allows the issuer to tailor the risks associated with holding the CMOs to meet the needs of particular groups of investors. CMOs are priced based on their own maturity and rate of return rather than that of the underlying mortgages.

**2.20** Interest-only and principal-only strips are similar to CMOs in that they are collateralized by a pool of mortgages. However, investors in interest-only securities have rights only to the interest portion of the cash flows from the underlying mortgages, while principal-only investors have the rights to the principal cash flows. Interest-only and principal-only strips meet the definition of a debt security.

## Equity Securities

**2.21** An equity security represents an ownership interest in an entity, such as common or preferred stock. Included in the FASB Statement No. 115 definition of equity securities are rights to acquire or dispose of an ownership interest in an entity at a fixed or determinable price. The definition also encompasses stock warrants and rights and options.

## Risks Associated With Derivatives and Securities

**2.22** Derivatives and securities may be subject to a variety of risks related to external factors, such as—

- Credit risk, which exposes the entity to the risk of loss as a result of the issuer of a debt security or the counterparty to a derivative failing to meet its obligation.
- Market risk, which exposes the entity to the risk of loss from adverse changes in market factors that affect the fair value of a derivative or security, such as interest rates, foreign exchange rates, and market indexes for equity securities.
- Basis risk, which exposes the entity to the risk of loss from ineffective hedging activities. Basis risk is the difference between the fair value (or cash flows) of the hedged item and the fair value (or cash flows) of the hedging derivative. The entity is subject to the risk that fair values (or cash flows) will change so that the hedge will no longer be effective.
- Legal risk, which exposes the entity to the risk of loss from a legal or regulatory action that invalidates or otherwise precludes performance by one or both parties to the derivative or security.

## The Need for Special Skill or Knowledge

**2.23** The unique characteristics of derivatives and securities, coupled with the relative complexity of some of the related accounting guidance, may require auditors to obtain special skill or knowledge to plan and perform auditing procedures. SAS No. 92 (AU sec. 332.05) is intended to alert auditors to the possible need for such skill or knowledge, for example in considering—

- Information systems.
- Service organization controls.
- Application of generally accepted accounting principles.
- Estimates of fair value.
- Inherent and control risks for hedging activities.

### Summary: Audit Implications

- The pace of financial innovation has accelerated sharply. The added variety of derivatives and securities and their increasing complexity pose unique challenges for auditors.
- The nature of derivatives or securities transactions an entity enters into may vary, depending on the business objective of the entity. The auditor should identify, understand, and differentiate the ways the entity uses derivatives and tailor auditing procedures for each type of use.
- Special skill or knowledge may be necessary to plan and perform auditing procedures for derivatives and securities.

## Chapter 3

# General Accounting Considerations for Derivatives and Securities

**3.01** This chapter summarizes selected accounting guidance on derivatives and securities and is intended merely to provide background information to help auditors understand and implement the auditing guidance contained in SAS No. 92 and this Guide. Auditors considering whether the measurement and disclosure of an entity's derivatives and securities are in conformity with generally accepted accounting principles should refer to the applicable standards and interpretive accounting guidance.

**3.02** Guidance on the accounting for derivatives is provided in FASB Statement No. 133. In addition, the Derivatives Implementation Group (DIG), a task force of the FASB, has provided guidance to the FASB staff on specific implementation issues related to FASB Statement No. 133. The DIG does not formally vote on issues. Instead, the Chair of the DIG identifies an agreed-upon resolution that has emerged from the group's debate. In instances when no clear resolution emerges, the issue may be further discussed at a future meeting or handled by the FASB staff. After each meeting of the DIG, the FASB staff documents the tentative conclusions reached. Approximately three weeks after each DIG meeting, the tentative conclusions are posted to the FASB Web site at [www.fasb.org](http://www.fasb.org). The conclusions remain tentative until they are formally cleared by the FASB and become a part of a FASB staff implementation guide (Q and A). In evaluating whether the measurement and disclosure of an entity's derivatives and hedging activities conform with the requirements of FASB Statement No. 133, auditors should determine whether the DIG has provided guidance that affects those measurement and disclosure considerations.

**3.03** In general, FASB Statement No. 133 requires an entity to report all derivatives as assets and liabilities in the statement of financial position, measured at fair value. Unrealized gains and losses attributed to changes in a derivative's fair value are accounted for differently, generally depending on whether the derivative is designated as a hedge and if so, the type of hedge and the degree to which the hedge is effective.

**3.04** Paragraphs 2.08 and 2.09 discuss the definition of derivative provided by FASB Statement No. 133. Not all contracts that meet the definition of a derivative are subject to the provisions of FASB Statement No. 133. FASB Statement No. 133 specifically excludes certain contracts from its provisions. These excluded contracts are listed in exhibit 3-1 and are not covered by SAS No. 92 or this Guide.

### Exhibit 3-1

#### Derivatives Excluded From FASB Statement No. 133

- "Regular-way" security trades
- Normal purchases and normal sales
- Certain insurance contracts, generally those within the scope of FASB Statement No. 60, *Accounting and Reporting by Insurance Enterprises*; No. 97, *Accounting and Reporting by Insurance Enterprises for Certain Long-Duration Contracts and for Realized Gains and Losses from the Sale of Investments*; and No. 113, *Accounting and Reporting for Reinsurance of Short-Duration and Long-Duration Contracts*



- Certain financial guarantee contracts, generally those that provide for payments to the guaranteed party in the event of default by the debtor
- Certain contracts that are not traded on an exchange, generally those that are based on nonfinancial assets that are not readily convertible to cash
- Derivatives that serve as impediments to sales accounting
- Contracts issued or held by the entity that are both indexed to its own stock and classified as equity
- Contracts issued by the entity in connection with stock-based compensation arrangements within the scope of FASB Statement No. 123, *Accounting for Stock-Based Compensation*
- Contracts issued by the entity as contingent consideration from a business combination

**3.05** As discussed in chapter 2, a derivative may be an embedded feature of a contract that does not in its entirety meet the definition of a derivative (for example, bonds, insurance policies, and leases). An embedded derivative modifies the cash flows or other exchanges otherwise required by the contract. An entity cannot circumvent the accounting requirements of FASB Statement No. 133 by simply embedding a derivative in a nonderivative contract (referred to as the *host contract*). FASB Statement No. 133 provides guidance on when an embedded derivative should be separated from its host contract and accounted for separately. An embedded derivative should be separated from the host contract and accounted for separately as a derivative if and only if all the following criteria are met.

- The economic characteristics and risks of the embedded derivative are not clearly and closely related to the economic characteristics and risks of the host contract.
- The contract that embodies both the embedded derivative and the host contract is not remeasured at fair value under otherwise applicable generally accepted accounting principles, with changes in fair value reported in earnings as they occur.
- A separate instrument with the same terms as the embedded derivative would be subject to FASB Statement No. 133.

A put or call option in a note receivable for the holder or the issuer of the note to convert principal outstanding to equity is an example of an embedded derivative that should be accounted for separately as a derivative. (However, the issuer of the bond would not separately account for the option as an embedded derivative.)

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*Examples and Illustrations.* Chapter 6 provides guidance on evaluating completeness assertions about embedded derivatives, and chapter 12 provides a case study on embedded derivatives.

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## Measurement of Derivatives

**3.06** FASB Statement No. 133 requires all derivatives reported in the statement of financial position to be measured at fair value. *Fair value* is defined as the amount at which an asset (liability) could be bought (incurred) or sold (settled) in a current transaction between willing parties, that is, other than in a forced or liquidation sale. In addition, FASB Statement No. 133 states that—

- Quoted market prices in active markets are the best evidence of fair value and should be used as the basis for the measurement, if available. If a quoted market price is available, the fair value is the product of the number of trading units times that market price.
- If a quoted market price is not available, the estimate of fair value should be based on the best information available in the circumstances. The estimate of fair value should consider prices for similar assets or similar liabilities and the results of valuation techniques to the extent available in the circumstances. Examples of valuation techniques include the present value of estimated expected future cash flows using discount rates commensurate with the risks involved, option-pricing models, matrix pricing, option-adjusted spread models, and fundamental analysis. Valuation techniques for measuring assets and liabilities should be consistent with the objective of measuring fair value. Those techniques should incorporate assumptions that market participants would use in their estimates of values, future revenues, and future expenses, including assumptions about interest rates, default, prepayment, and volatility.

**3.07** FASB Statement No. 133 provides additional guidance on certain fair value measurement issues, including—

- *Fair value of liabilities.* In measuring derivatives that are liabilities at fair value by discounting estimated cash flows (or equivalent outflows of other assets), the discount rates should be the rates at which those liabilities could be settled in an arm's-length transaction.
- *Forward contracts.* In measuring forward contracts at fair value by discounting estimated future cash flows, an entity should estimate future cash flows based on the forward rate rather than the spot rate. For example, the fair value of a foreign currency forward contract would be based on estimated future cash flows using the forward rate, discounted to reflect the time value of money until the settlement date.
- *Consideration of a discount or premium in the valuation of a large position.* The definition of fair value requires that fair value be determined as the product of the number of trading units of an asset times its quoted price. Any premium or discount based on the relative size of the position held, such as a large proportion of the total trading units of an instrument (the "blockage" factor) is precluded.
- *Practicability.* FASB Statement No. 107, *Disclosures about Fair Value of Financial Instruments*, and relevant amendments to that Statement (hereinafter referred to as FASB Statement No. 107) require the disclosure of the fair value of financial instruments only when it is practicable to do so. FASB Statement No. 133 does not provide a similar exemption. Thus, entities are required to determine the fair value of derivatives in all circumstances.

## Hedge Accounting<sup>1</sup>

**3.08** As described in chapter 2, derivatives often are used in hedging activities as a way to manage risk. A hedge involves two separate items—generally

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<sup>1</sup> FASB Statement No. 133 provides extensive detailed guidance on the application of hedge accounting, including the circumstances in which hedge accounting is and is not permitted.

the derivative<sup>2</sup> and the hedged item. For example, an entity that uses an interest rate swap as a hedge enters into an interest rate swap agreement (the derivative) to protect against interest rate risk associated with its debt (the hedged item).

**3.09** FASB Statement No. 133 states that a primary purpose of hedge accounting is to link items or transactions whose changes in fair values or cash flows are expected to offset each other. The details of applying hedge accounting will vary depending on the type of risk hedged, for example—

- *Fair value hedge.* The change in the fair value of a derivative designated and qualifying as a fair value hedge is recognized in earnings and is offset by the portion of the change in the fair value of the hedged asset or liability that is attributable to the risk being hedged. That accounting results in adjusting the carrying amount of the hedged asset or liability for changes in fair value. The adjusted carrying amount is then subject to consideration of the need to provide for impairment losses.

If the hedge is perfectly matched (that is, completely effective), the change in the derivative's fair value will equal the change in the hedged item's fair value. Therefore, there will be no effect on earnings. However, if the hedge is not completely effective (that is, there is some degree of ineffectiveness), earnings will be increased or decreased for the difference between the changes in the fair values of the derivative and the hedged item. The increase or decrease in earnings represents the ineffective portion of the change in the derivative's fair value.

- *Cash flow hedge.* The effective portion of the change in the fair value of a derivative designated and qualifying as a cash flow hedge is reported in other comprehensive income, and the ineffective portion is reported in earnings.<sup>3</sup> If the hedge meets the requirements for hedge accounting but the change in the derivative's fair value is less than the change in expected cash flows on the hedged transaction, an under-hedge situation results. Under FASB Statement No. 133, in this situation all of the change in the derivative's fair value is reported in other comprehensive income. In the opposite, over-hedge situation, however, the excess of the change in the derivative's fair value over the change in expected cash flows on the hedged transaction is reported in earnings as the ineffective portion of the change in the derivative's fair value. The remainder of the change in the derivative's fair value is reported in other comprehensive income.

There are two basic types of cash flow hedges. In some instances, the entity may hedge its exposure to variability in expected cash flow associated with a recognized asset or liability. For example, the entity may elect to hedge the risk associated with future interest payments on variable-rate debt. In other instances, an entity may hedge its risks associated with a forecasted transaction, such as a forecasted purchase or sale. Amounts in accumulated other comprehensive income generally are reclassified into earnings during the period the hedged asset, liability, or forecasted transaction affects earnings. However, FASB Statement No. 133 requires reclassifying amounts sooner in certain

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<sup>2</sup> Hedge accounting may also be used for a hedge with a nonderivative financial instrument in very limited situations, as discussed in paragraphs 3.18 through 3.20.

<sup>3</sup> FASB Statement No. 133 provides detailed guidance on the amounts to be reported in earnings and other comprehensive income.

circumstances. For example, reclassification is required if a cash flow hedge is discontinued because it is probable that the forecasted transaction will not occur.

**3.10** FASB Statement No. 133 also provides guidance on accounting for hedges of an entity's foreign currency exposure under—

- A fair value hedge of an unrecognized firm commitment or a recognized asset or liability (including an available-for-sale security).
- A cash flow hedge of a forecasted transaction, an unrecognized firm commitment, the forecasted functional-currency-equivalent cash flows associated with a recognized asset or liability, or a forecasted intercompany transaction.
- A hedge of a net investment in a foreign operation.

In addition, FASB Statement No. 133 generally allows using hedge accounting for a foreign-currency denominated nonderivative financial instrument to be used to hedge changes in the fair value of an unrecognized firm commitment, or a specific portion thereof, attributable to foreign currency exchange rates or a net investment in a foreign operation. The change in the financial instrument's fair value is accounted for in the same manner as a derivative used as a fair value hedge.

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*Examples and Illustrations.* Exhibits 2-1 and 2-2 provide examples of common fair value and cash flow hedging strategies.

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**3.11** The specific criteria for qualifying for hedge accounting vary depending on the type of hedge, but in general, FASB Statement No. 133 prescribes requirements for designation and documentation of the hedge and the expectation and assessment of hedge effectiveness. To meet those requirements, management should at the inception of the hedge designate the derivative as a hedge and contemporaneously formally document the hedging relationship, the entity's risk management objective and strategy for undertaking the hedge, and the method of assessing the effectiveness of the hedge. The documentation should also identify the hedging instrument, the hedged item, and the nature of the risk being hedged. Without such documentation requirements, an entity could freely manipulate its financial statement results by retroactively identifying a hedged item, a hedged transaction, or a method of assessing effectiveness. Thus, the contemporaneous designation and documentation of the hedging relationship is necessary (and required) in order to add verifiability to the hedge accounting model.

**3.12** To qualify for hedge accounting, FASB Statement No. 133 also requires that an entity, both at inception of the hedge and on an ongoing basis, must expect that the hedging relationship will be highly effective in achieving offsetting changes in fair value or cash flows attributable to the hedged risk during the period the hedge is designated. FASB Statement No. 133 requires that an entity define at the time it designates a hedging relationship the method it will use to assess the hedge's effectiveness. It does not specify how effectiveness should be assessed other than that it should be consistent with the risk management strategy documented for that particular hedging relationship and it should be reasonable. Additionally, FASB Statement No. 133 requires an entity to use the defined method consistently during the hedge period to assess at inception and on an ongoing basis whether it expects the hedging relationship to be highly effective in achieving offset and to measure

the ineffective portion of the hedge. Finally, FASB Statement No. 133 provides that an entity should assess effectiveness for similar hedges in a similar manner and should justify the use of different methods for assessing effectiveness for similar hedges.

**Hedged Items for Which Hedge Accounting Is Not Permitted**

3.13 Under the provisions of FASB Statement No. 133, an entity is prohibited from designating certain items as the hedged item. Thus, entering into a derivative for the stated purpose of “hedging” one of these prohibited items would not qualify for hedge accounting. The derivative would be carried at fair value with the changes reported in earnings, and the related item would be accounted for in accordance with generally accepted accounting principles. Exhibit 3-2 summarizes the items that cannot be considered a hedged item under FASB Statement No. 133.

<b>Exhibit 3-2 Items That Cannot Be Considered the Hedged Item</b>	
<b>Fair Value Hedge</b>	<b>Cash Flow Hedge</b>
<p>An asset or liability that is remeasured with the changes in fair value attributable to the hedged risk reported currently in earnings</p> <p>An investment accounted for by the equity method</p> <p>A minority interest in one or more consolidated subsidiaries</p> <p>An equity investment in a consolidated subsidiary</p> <p>A firm commitment either to enter into a business combination or to acquire or dispose of a subsidiary, a minority interest, or an equity method investee</p> <p>An equity instrument issued by the entity and classified in stockholders' equity in the statement of financial position</p>	<p>A forecasted acquisition of an asset or incurrence of a liability that is remeasured with the changes in fair value attributable to the hedged risk reported currently in earnings</p> <p>A forecasted business combination</p> <p>A forecasted transaction involving—</p> <ul style="list-style-type: none"> <li>● A parent company's interests in consolidated subsidiaries</li> <li>● A minority interest in a consolidated subsidiary</li> <li>● An equity method investment</li> <li>● An entity's own equity instruments</li> </ul>

**Determining Whether Hedge Accounting Is Permitted for the Hedged Risk**

3.14 An entity enters into a fair value or cash flow hedge in order to mitigate the risks associated with the hedged item. For example, an entity may plan to issue debt in the future. In an attempt to eliminate the risk of interest rates rising in the future, the entity could enter into a derivative to hedge that risk.

3.15 FASB Statement No. 133 requires entities that enter into a fair value or cash flow hedge to be quite specific in designating the risks being hedged. Under the provisions of FASB Statement No. 133, hedge accounting may be used for hedges of some risks but not others. These are summarized in exhibits 3-3 and 3-4.

**Exhibit 3-3  
Summary of the Availability of Hedge Accounting  
for Various Hedged Risks Fair Value Hedges**

<b>Hedged Item</b>	<b>Can Hedge</b>	<b>Cannot Hedge</b>
Held-to-maturity debt security	The risk of changes in the security's fair value attributable to credit risk, foreign exchange risk, or both	Risk of changes in the security's fair value attributable to interest rate risk
Prepayment option component of a held-to-maturity debt security	The risk of changes in the entire fair value of the option component	Risk of changes in the security's overall fair value
Nonfinancial asset or liability*	Risk of changes in the fair value of the entire hedged asset or liability (reflecting its actual location, if a physical asset)	Risk of changes in the price of— <ul style="list-style-type: none"> <li>● A similar asset in a different location</li> <li>● A major ingredient of the asset</li> </ul>
Financial asset or liability**	Risk of changes in the overall fair value of the entire hedged item, or risks attributable to changes in— <ul style="list-style-type: none"> <li>● The designated benchmark interest rate</li> <li>● The related foreign currency exchange rates</li> <li>● Both changes in the obligor's credit-worthiness and changes in the spread over the benchmark interest rate with respect to the hedged item's credit sector at inception of the hedge</li> </ul> If the risk designated as being hedged is not the risk of changes in the overall fair value of the hedged item, two or more of the other risks above may simultaneously be designated as being hedged.	Prepayment risk

\* This does not apply to a recognized loan servicing right or a nonfinancial firm commitment with financial components.

\*\* This also applies to a recognized loan servicing right or a nonfinancial firm commitment with financial components.

**Exhibit 3-4**  
**Summary of the Availability of Hedge Accounting**  
**for Various Hedged Risks Cash Flow Hedges**

<b>Hedged Item</b>	<b>Can Hedge</b>	<b>Cannot Hedge</b>
Forecasted transaction related to a held-to-maturity debt security	Risks of changes in cash flows attributable to credit risk, foreign exchange risk, or both	Risk of changes in cash flows attributable to interest rate risk
Forecasted purchase or sale of a nonfinancial asset or liability	Risk of changes in— <ul style="list-style-type: none"> <li>● The cash flows relating to all changes in the purchase price or sales price of the asset, reflecting its actual location if a physical asset</li> <li>● The functional-currency-equivalent cash flows attributable to changes in the related foreign currency exchange rate</li> </ul>	Risk of changes in the cash flows relating to the— <ul style="list-style-type: none"> <li>● Purchase or sale of a similar asset in a different location</li> <li>● Major ingredient</li> </ul>
Forecasted purchase or sale of a financial asset or liability, or the variable cash inflow or outflow of an existing financial asset or liability	One or more of the risks attributable to changes in— <ul style="list-style-type: none"> <li>● Hedged cash flows related to the asset or liability</li> <li>● Cash flows attributable to changes in the designated benchmark interest rate</li> <li>● Functional-currency-equivalent cash flows attributable to changes in the related foreign currency exchange rates</li> <li>● Cash flows attributable to default, changes in the obligor's credit-worthiness, and changes in the spread over the benchmark interest rate with respect to the hedged item's credit sector at inception of the hedge</li> </ul>	Prepayment risk

## Forecasted Transactions

**3.16** FASB Statement No. 133 provides guidance on determining whether hedge accounting may be used for a hedge of a forecasted transaction.

- *Determining specific information about the forecasted transaction.* FASB Statement No. 133 states that—

Documentation [of the hedging relationship] shall include all relevant details, including the date on or period within which the forecasted transaction is expected to occur, the specific nature of asset or liability involved (if any), and the expected currency amount or quantity of the forecasted transaction.

The Statement goes on to clarify that *expected currency* refers to hedges of foreign currency risk and requires specification of the exact amount of foreign currency being hedged. *Expected quantity* requires specification of the physical quantity (that is, the number of items or units of measure) encompassed by the hedged forecasted transaction. If a forecasted sale or purchase is being hedged for price risk, the hedged transaction cannot be specified solely in terms of expected currency amounts, nor can it be specified as a percentage of sales or purchases during a period. Additionally, the hedged forecasted transaction should be described with sufficient specificity so that when a transaction occurs, it is clear whether that transaction is or is not the hedged transaction.

For example, suppose an entity wishes to hedge the 15,000 units of a product it expects to sell during a 3-month period. The entity can designate these sales as the first 15,000 units to be sold during the period, or the first portion of a specific number of sales to be recognized in each month during the period, totaling 15,000 units. The entity cannot designate the 15,000 units to be the last to be recorded in the period because it cannot identify such sales when they occur.

- *Assessing probability.* In order to qualify for hedge accounting, the occurrence of the forecasted transaction must be probable. FASB Statement No. 133 requires that the likelihood that the transaction will take place not be based solely on management's intent. Instead, the transaction's probability should be supported by observable facts and the attendant circumstances, such as—
  - The frequency of similar past transactions.
  - The financial and operational ability of the entity to carry out the transaction.
  - The extent of loss that could result if the transaction does not occur.
  - The likelihood that transactions with substantially different characteristics might be used to achieve the same business purpose.

If it becomes no longer probable that the forecasted transaction will occur by the end of the originally specified time period or within an additional two-month period of time thereafter, the entity should discontinue hedge accounting. The accounting for the net derivative gain or loss related to a discontinued cash flow hedge of a forecasted transaction is described in FASB Statement No. 133. A pattern of determining that hedged forecasted transactions are probable of not occurring by the end of the originally specified time period or within an additional two-month period of time thereafter will call into ques-



tion the entity's ability to accurately predict forecasted transactions and the propriety of applying hedge accounting for similar forecasted transactions in the future.

## Foreign Currency Hedges

**3.17** As discussed in paragraph 3.10, FASB Statement No. 133 permits using hedge accounting for certain fair value and cash flow hedges of foreign currency exposure and for the hedge of a net investment in a foreign operation.

**3.18** *Foreign currency fair value hedges.* FASB Statement No. 133 provides guidance on fair value hedges of three items.

- a. *Unrecognized firm commitment.* A derivative instrument or a non-derivative financial instrument that may give rise to a foreign currency transaction gain or loss under FASB Statement No. 52, *Foreign Currency Translation*, can be designated as hedging changes in the fair value of an unrecognized firm commitment, or a specific portion thereof, attributable to foreign currency exchange rates.
- b. *Recognized asset or liability.* A nonderivative financial instrument should not be designated as the hedging instrument in a fair value hedge of the foreign currency exposure of a recognized asset or liability. A derivative instrument can be designated as hedging the changes in the fair value of a recognized asset or liability, or a specific portion thereof, for which a foreign currency transaction gain or loss is recognized in earnings under the provisions of FASB Statement No. 52.
- c. *Available-for-sale security.* A nonderivative financial instrument should not be designated as the hedging instrument in a fair value hedge of the foreign currency exposure of an available-for-sale security. A derivative instrument can be designated as hedging the changes in the fair value of an available-for-sale debt security, or a specific portion thereof, attributable to changes in foreign currency exchange rates. An available-for-sale equity security can be hedged for changes in the fair value attributable to changes in foreign currency exchange rates and qualify for hedge accounting if certain conditions are met.

**3.19** *Foreign currency cash flow hedges.* Under FASB Statement No. 133, a nonderivative financial instrument should not be designated as a hedging instrument in a foreign currency cash flow hedge. However, if certain criteria are met,<sup>4</sup> hedge accounting may be applied for a derivative instrument designated as hedging the foreign currency exposure to variability in the functional-currency-equivalent cash flows associated with a—

- a. Recognized foreign-currency-denominated asset or liability.
- b. Foreign-currency-denominated firm commitment.
- c. Forecasted foreign-currency-denominated transaction (for example, a forecasted export sale to an unaffiliated entity with the price to be denominated in a foreign currency).

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<sup>4</sup> FASB Statement No. 133 provides detailed guidance on the criteria that must be met in order to qualify for foreign currency cash flow hedge accounting. Additionally, FASB Statement No. 133 provides guidance for foreign currency cash flow hedge accounting for internal derivatives and offsetting net exposures in foreign currency cash flow hedging situations.

- d. Forecasted intercompany foreign-currency-denominated transaction (for example, a forecasted sale to a foreign subsidiary or a forecasted royalty from a foreign subsidiary).

**3.20** *Hedge of a net investment in a foreign operation.* A derivative or a nonderivative financial instrument that may give rise to a foreign currency transaction gain or loss under FASB Statement No. 52 can be designated as hedging the foreign currency exposure of a net investment in a foreign operation provided certain conditions are met. The unrealized gain or loss on a hedging derivative (or the foreign currency transaction gain or loss on the nonderivative hedging instrument) that is designated as, and is effective as, an economic hedge of the net investment in a foreign operation should be reported in the same manner as a translation adjustment to the extent it is effective as a hedge. The hedged net investment should be accounted for consistent with FASB Statement No. 52; the provisions of FASB Statement No. 133 for recognizing the gain or loss on assets designated as being hedged in a fair value hedge do not apply to the hedge of a net investment in a foreign operation.

## Assessing Hedge Effectiveness

**3.21** FASB Statement No. 133 establishes the general requirement that in order to use hedge accounting, the entity should assess a hedge's effectiveness at the time it enters into a hedge and at least every three months thereafter. However, it provides an exception for an interest rate swap used to hedge interest rate risk of a recognized interest-bearing asset or liability, provided certain criteria are met. In that situation, the entity may assume that the hedge is completely effective and elect to use the shortcut method, thereby avoiding the need to formally assess hedging effectiveness at inception and on a continuing basis.<sup>5</sup> Since the hedge is assumed to be completely effective, no hedging ineffectiveness is measured.

**3.22** Under the shortcut method, changes in the fair value of the swap are assumed to equal the changes in the carrying amount of the instrument (for fair value hedges) or are accumulated in other comprehensive income (for cash flow hedges). This greatly simplifies the accounting for the hedging relationship. The entity reports interest based on the effective rate resulting from the swap agreement. For example, if an entity with debt bearing interest at 9 percent enters into a swap to receive interest at 7 percent and pay interest at LIBOR, interest expense should be reported at LIBOR plus 2 percent. That is the effective rate resulting from paying LIBOR under the swap and receiving interest at a rate that is 2 percent less than the fixed rate on the debt.

**3.23** Exhibit 3-5 summarizes the conditions that must be met in order to use the shortcut method.

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<sup>5</sup> Statement 133 Implementation Issue No. G9, "Cash Flow Hedges: Assuming No Ineffectiveness When Critical Terms of Hedging Instruments and Hedged Transaction Match in a Cash Flow Hedge," notes that the shortcut method may not be used for other hedging relationships, even if the critical terms of the hedging instrument and the hedged forecasted transaction are the same.

**Exhibit 3-5  
Summary of the Conditions That Must Be  
Met for Use of the Shortcut Method**

Type of Hedge	Hedging Activity	Conditions
Fair value	Interest rate swap hedging interest rate risk	<p>All of the following are met.</p> <ul style="list-style-type: none"> <li>● The notional amount of the swap matches the principal amount of the interest-bearing asset or liability.</li> <li>● The fair value of the swap at the inception of the hedging relationship is zero.</li> <li>● The fixed rate is the same throughout the term, and the variable rate is based on the same index and includes the same constant adjustment or no adjustment.</li> <li>● The interest-bearing asset or liability is not prepayable, except under certain conditions.</li> <li>● The index on which the variable leg of the swap is based matches the benchmark interest rate designated as the interest rate risk being hedged for that hedging relationship.</li> <li>● Any other terms in the interest-bearing financial instruments or interest rate swaps are typical of those instruments and do not invalidate the assumption of no ineffectiveness.</li> <li>● The expiration date of the swap matches the maturity date of the interest-bearing asset or liability.</li> <li>● There is no floor or ceiling on the variable interest rate of the swap.</li> <li>● The interval between repricings of the variable interest rate in the swap is frequent enough to justify an assumption that the variable payment or receipt is at market rate (generally three to six months or less).</li> </ul>
Cash flow	Interest rate swap hedging interest rate risk	<p>All of the following are met.</p> <ul style="list-style-type: none"> <li>● The notional amount of the swap matches the principal amount of the interest-bearing asset or liability.</li> <li>● The fair value of the swap at the inception of the hedging relationship is zero.</li> <li>● The fixed rate is the same throughout the term, and the variable rate is based on the same index and includes the same constant adjustment or no adjustment.</li> </ul>

<b>Exhibit 3-5—continued</b> <b>Summary of the Conditions That Must Be Met for Use of the Shortcut Method</b>		
<b>Type of Hedge</b>	<b>Hedging Activity</b>	<b>Conditions</b>
		<ul style="list-style-type: none"> <li>● The interest-bearing asset or liability is not prepayable, except under certain conditions.</li> <li>● The index on which the variable leg of the swap is based matches the benchmark interest rate designated as the interest rate risk being hedged for that hedging relationship.</li> <li>● Any other terms in the interest-bearing financial instruments or interest rate swaps are typical of those instruments and do not invalidate the assumption of no ineffectiveness.</li> <li>● All interest receipts or payments on the variable-rate asset or liability during the term of the swap are designated as hedged, and no interest payments beyond the term of the swap are designated as hedged.</li> <li>● There is no floor or cap on the variable interest rate of the swap unless the variable-rate asset or liability has a floor or cap. In that case, the swap must have a floor or cap on the variable interest rate that is comparable to the floors or caps on the variable-rate asset or liability.</li> <li>● The repricing dates match those of the variable-rate asset or liability.</li> </ul>

**3.24** In all other hedging activities, the entity must assess the hedge’s effectiveness at the inception of the hedge and at least every three months thereafter. In addition, FASB Statement No. 133 requires the entity to designate at the inception of the hedge the method it will use to assess hedge effectiveness.<sup>6</sup> To comply with this requirement the entity should decide—

- The changes in the derivative’s fair value that it will consider in assessing the effectiveness of the hedge.
- The method it will use to assess hedge effectiveness.

### **Deciding Which Changes in the Derivative’s Fair Value Will Be Considered in Assessing Hedge Effectiveness**

**3.25** The fair value of some derivatives has two components—intrinsic value<sup>7</sup> and time value. For example—

<sup>6</sup> The shortcut method assumes there is no ineffectiveness in the hedge. While that assumption is not permitted for hedges other than the use of an interest rate swap to hedge interest rate risk, other hedges may also be completely effective. Accordingly, the use of methods other than the shortcut method may still result in measuring no ineffectiveness.

<sup>7</sup> Although there are other definitions of the term *intrinsic value*, its use here is consistent with its use in the examples in FASB Statement No. 133.

- *Option contracts.* The intrinsic value of a call option is the excess, if any, of the market price of the item underlying the option contract over the price specified in the option contract (known as the strike price or exercise price.) The intrinsic value of a put option is the excess, if any, of the option contract's strike price over the market price of the item underlying the option contract. The intrinsic value of an option cannot be less than zero. For example, suppose an entity owned a call option that granted it the right to purchase a given stock at \$50 per share. If the price of the underlying stock is \$50, then the intrinsic value of the option is \$0. If the price of the stock rises to \$55 per share, then the intrinsic value is \$5 because the entity can purchase for \$50 an asset that has a market value of \$55. If the market value of the shares drops to \$45 per share, then the option will not be exercised; it has an intrinsic value of \$0.

The time value of an option contract recognizes that the price of the underlying item may move above the strike price (for a call) or below the strike price (for a put) during the exercise period. Again, assume that an entity holds a call option, the strike price is \$50, and the price of the underlying stock also is \$50. The intrinsic value of the option is \$0. But the market may assign a value to the option of \$1, indicating that investors believe the stock price will rise during the exercise period. The fair value of the option is equal to the intrinsic value plus the time value—in this case \$1.

- *Forward and futures contracts.* The market assigns a value to forward and futures contracts in a manner similar to that applied to options contracts. The intrinsic value of the contract depends on the relationship between the price specified in the contract and the current spot price. The time value of the forward contract is a market assessment of whether the spot price will rise or fall during the period covered in the agreement. As with an option contract, the time value of a forward or futures contract approaches zero with the passage of time.

**3.26** When an entity uses an option, futures, or forward contract as a hedging instrument, FASB Statement No. 133 permits—but does not require—the entity to exclude all or a part of the contract's time value from the assessment of hedge effectiveness.

- *Options.* If the effectiveness of a hedge with an option contract is assessed based on changes in the option's intrinsic value, the change in the time value of the contract would be excluded from the assessment of hedge effectiveness.
- *Options.* If the effectiveness of a hedge with an option contract is assessed based on changes in the option's minimum value, that is, its intrinsic value plus the effect of discounting, the change in the volatility value of the contract would be excluded from the assessment of hedge effectiveness.
- *Forwards and futures.* If the effectiveness of a hedge with a forward or futures contract is assessed based on changes in fair value attributable to changes in spot prices, the change in the fair value of the contract related to the changes in the difference between the spot price and the forward or futures price would be excluded from the assessment of hedge effectiveness.

**3.27** No other components of the change in the fair value of the designated hedging instrument may be excluded from the assessment of hedge effectiveness.

## Methods to Assess Hedge Effectiveness

**3.28** Statement 133 Implementation Issue No. E7, “Hedging—General: Methodologies to Assess Effectiveness of Fair Value and Cash Flow Hedges,” provides that an entity is required to assess hedge effectiveness in two different ways—in prospective considerations and in retrospective evaluations. FASB Statement No. 133 provides the entity with flexibility in selecting the method it will use in assessing hedge effectiveness. However, it also states that ordinarily an entity should assess effectiveness for similar hedges in a similar manner and that the use of different methods for similar hedges should be justified.

**3.29** Under prospective considerations, an entity, both at inception of the hedging relationship and on an ongoing basis, must be able to justify an expectation that the relationship will be highly effective over future periods in achieving offsetting changes in fair value or cash flows. That expectation, which is forward-looking, can be based upon regression or other statistical analysis of past changes in fair values or cash flows as well as on other relevant information.<sup>8</sup>

**3.30** Under retrospective evaluations, an entity, at least quarterly, must determine whether the hedging relationship has been highly effective in having achieved offsetting changes in fair value or cash flows through the date of periodic assessment. That assessment can be based upon regression or other statistical analysis of past changes in fair values or cash flows as well as on other relevant information. If an entity elects at the inception of a hedging relationship to use the same regression analysis approach for both prospective and retrospective evaluations of assessing effectiveness, then during the term of that hedging relationship those regression analysis calculations should generally incorporate the same number of data points. As an alternative to using regression or other statistical analysis, an entity could use the dollar-offset method to perform the retrospective evaluations of assessing hedge effectiveness.

**3.31** *Regression analysis.* Regression analysis analyzes the correlation between two variables, for example, how the movement in LIBOR interest rates affects U.S. Treasury rates. The result of a regression analysis is a measurement that compares the expected sensitivity of the movement in one variable with the movement in another variable (referred to as the *correlation coefficient*), which can be useful in an assessment of whether a hedging relationship is likely to be highly effective. For auditors assessing hedge effectiveness, the key measurement in a regression analysis is the coefficient of determination, or “R-squared,” which measures the strength or degree of the correlation coefficient.

**3.32** If there is significant correlation between two variables, movements of one variable can be reasonably expected to trigger similar movements in the other variable. The value of R-squared will be between 0 and 1.0. An R-squared value of 0 means that the changes in one variable are unrelated to changes in the other variable; a value of one implies perfect correlation.

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<sup>8</sup> If the critical terms of the hedging instrument and of the entire hedged asset or liability or hedged forecasted transaction are the same, the entity could conclude that changes in the fair value or cash flows attributable to the risk being hedged are expected to completely offset at inception and on an ongoing basis. In that situation, the entity is still required to perform and document an assessment of hedge effectiveness at the inception of the hedging relationship and on an ongoing basis throughout the hedge period. However, Statement 133 Implementation Issue No. G9 notes that subsequent assessments can be performed by verifying and documenting whether the critical terms of the hedging instrument and the forecasted transaction have changed during the period in review.

**3.33** For example, if a 1 percent change in the fair value or cash flows of item A were to trigger a 0.5 percent change in the value of item B, and there were an R-squared statistic of 0.90, there would be a 90 percent level of assurance that if the fair value of item A were to move 1 percent, the value of item B would move 0.5 percent. The price movements would then be said to be highly correlated. In this situation, an entity would need to sell futures contracts on item B in an amount equal to approximately two times the value of the hedged item A in order for the hedge to be highly effective in offsetting the effects of fair value or cash flow changes on item A.

**3.34** FASB Statement No. 133 does not specify a value for R-squared that must be achieved in order to determine that a hedge is highly effective. Some accountants believe that an R-squared value of 0.80 or higher is required to support management's conclusion that a hedge is expected to be highly effective. Additionally, other results of the regression analysis may need to be considered by management when assessing whether a hedge is expected to be highly effective. The use of regression analysis or other statistical methods is complex and requires appropriate interpretation and understanding of the statistical inferences. The auditor should consider the need to obtain specialized expertise to assist in gathering the necessary audit evidence when regression analysis or other statistical methods are used to assess hedge effectiveness.

**3.35** *Dollar-offset method.* The dollar-offset method essentially compares historical changes in fair value or cash flows of the hedging instrument with changes in fair value or cash flows of the hedged item attributable to the risk being hedged during a specified period or periods. The result is expressed as a percentage. The dollar-offset method may be applied either on a period-to-period basis or on a cumulative basis. If the hedge is completely effective (that is, there is no ineffectiveness), the ratio is 100 percent—for every \$1 change in the fair value or cash flows of the hedged item, there is an equal and opposite change in the fair value or cash flows of the hedging instrument. In practice, it is generally assumed that any result between 80 percent and 125 percent would be considered to be highly effective.

## Actual Accounting Measurement of Hedge Effectiveness

**3.36** As previously discussed in paragraphs 3.28 through 3.30, an entity must have an expectation that the hedging relationship will be highly effective at inception and on an ongoing basis in order to qualify for hedge accounting. Subsequent to the inception of the hedge, an entity using hedge accounting is required to measure the actual hedge results for the current reporting period and recognize in earnings any hedge ineffectiveness resulting from the hedging relationship. The hedge ineffectiveness recognized in earnings in each reporting period is based on the extent to which exact offset is not achieved for the fair value or cash flow hedging relationship as specified in FASB Statement No. 133. This requirement applies even if a regression or other statistical analysis approach for both prospective considerations and retrospective evaluations of assessing effectiveness supports an expectation that the hedging relationship will be highly effective and demonstrates that it has been highly effective, respectively.

## General Disclosure Considerations for Derivatives

**3.37** FASB Statement No. 133 prescribes disclosure requirements for derivatives. Exhibit 3-6 provides a checklist of the general disclosure considerations. However, auditors should refer to FASB Statement No. 133 and interpretive accounting guidance in evaluating the adequacy of disclosure.

*Examples and Illustrations.* Chapters 10 and 14 present case studies on hedging forecasted transactions, including the audit considerations necessary to assess the probability of the forecasted transaction.

<b>Exhibit 3-6</b> <b>Derivatives</b> <b>Checklist of General Disclosure Considerations</b>	
Type of Derivative	Required Disclosures
Derivatives used in a hedging activity, other derivatives, and nonderivative instruments that are denominated in a foreign currency and used in a hedging activity*	<ul style="list-style-type: none"> <li>● Disclose the objectives for entering into or issuing the instruments, the context needed to understand those objectives, and the strategies for achieving those objectives. Distinguish between—                             <ul style="list-style-type: none"> <li>a. Derivative and nonderivative instruments designated as fair value hedging instruments.</li> <li>b. Derivatives designated as cash flow hedging instruments.</li> <li>c. Derivatives and nonderivative instruments designated as hedging instruments for hedges of the foreign currency exposure of a net investment in a foreign operation.</li> <li>d. All other derivatives.</li> </ul>                             The description also should indicate the entity's risk management policy for each of those types of hedges.                         </li> </ul>
Nonhedging derivatives	<ul style="list-style-type: none"> <li>● Describe the purpose of the derivative activity.</li> </ul>
Fair value hedges	<ul style="list-style-type: none"> <li>● Disclose the net gain or loss recognized in earnings during the reporting period representing (a) the amount of the hedges' ineffectiveness and (b) the component of the derivatives' gain or loss, if any, excluded from the assessment of hedge effectiveness.</li> <li>● Describe where the net gain or loss is reported in the statement of income or other statement of financial performance.</li> <li>● Disclose the amount of net gain or loss recognized in earnings when a hedged firm commitment no longer qualifies as a fair value hedge.</li> </ul>
Cash flow hedges	<ul style="list-style-type: none"> <li>● Disclose the net gain or loss recognized in earnings during the reporting period representing (a) the amount of the hedges' ineffectiveness and (b) the component of the derivatives' gain or loss, if any, excluded from the assessment of hedge effectiveness.</li> <li>● Describe where the net gain or loss is reported in the statement of income or other statement of financial performance.</li> </ul>



**Exhibit 3-6—continued**  
**Derivatives**  
**Checklist of General Disclosure Considerations**

Type of Derivative	Required Disclosures
Foreign Currency Hedges of Net Investments in Foreign Operations	<ul style="list-style-type: none"> <li>● Describe the transactions or other events that will result in the reclassification into earnings of gains and losses that are reported in accumulated other comprehensive income.</li> <li>● Disclose the estimated net amount of the existing gains or losses at the reporting date that is expected to be reclassified into earnings within the next 12 months.</li> <li>● Disclose the maximum length of time over which the entity is hedging its exposure to the variability in future cash flows for forecasted transactions, excluding those forecasted transactions related to the payment of variable interest on existing financial instruments.</li> <li>● Disclose the amount of gains and losses reclassified into earnings as a result of the discontinuance of cash flow hedges because it is probable that the original forecasted transactions will not occur by the end of the originally specified time period or within a certain additional period of time.</li> <li>● Display as a separate classification within other comprehensive income the net gain or loss on derivatives designated and qualifying as cash flow hedging instruments.</li> <li>● Disclose as a separate component of accumulated other comprehensive income, the beginning and ending accumulated derivatives gain or loss, the related net change associated with current period hedging transactions, and the net amount of any reclassification into earnings.</li> <li>● For derivatives, and nonderivative instruments that may give rise to foreign currency transaction gains or losses under FASB Statement No. 52 that have been designated and have qualified as hedging instruments, disclose the net amount of gains or losses included in the cumulative translation adjustment during the period.</li> </ul>

\* Certain nonderivative instruments, because of their hedging instrument designation, are within the scope of FASB Statement No. 133. Under FASB Statement No. 133, a foreign-currency-denominated nonderivative financial instrument can be designated as a hedging instrument of either (1) the foreign currency exposure of an unrecognized firm commitment denominated in a foreign currency, or (2) the foreign currency exposure of a net investment in a foreign operation. In either case, the foreign-currency-denominated nonderivative hedging instrument is subject to the disclosure requirements of FASB Statement No. 133. However, it prohibits applying hedge accounting for other nonderivative instruments.

## Investments in Certain Debt and Equity Securities

**3.38** The following summarizes the accounting considerations of FASB Statement No. 115 (as amended by FASB Statement No. 133) for investments in equity securities that have readily determinable fair values and for all investments in debt securities.

- Investments in these securities are classified into one of three categories and accounted for as follows.
  - *Held-to-maturity.* Debt securities that the entity has the positive intent and ability to hold to maturity are classified as held-to-maturity and reported at amortized cost.
  - *Trading.* Debt and equity securities that are bought and held principally for the purpose of selling them in the near term are classified as trading securities and reported at fair value, with unrealized gains and losses included in earnings.
  - *Available-for-sale.* Debt and equity securities not classified as either held-to-maturity or trading are classified as available-for-sale and reported at fair value, with unrealized gains and losses excluded from earnings and reported in other comprehensive income.
- When the fair value of an available-for-sale or held-to-maturity security is less than its amortized cost and the decline is other than temporary, the cost basis of the security should be written down to fair value. This amount becomes the new cost basis of the asset, and the amount of the write-down should be included in earnings as a realized loss.
- Exhibit 3-7 summarizes general disclosure considerations.

**Exhibit 3-7**  
**Investments in Certain Securities**  
**General Disclosure Considerations**

For securities classified as available-for-sale, disclose by major security type as of the date of each statement of financial position presented—

- Aggregate fair value.
- Total gains for securities with net gains in accumulated other comprehensive income.
- Total losses for securities with net losses in accumulated other comprehensive income.

For securities classified as held-to-maturity, disclose by major security type as of the date of each statement of financial position presented—

- Aggregate fair value.
- Gross unrecognized holding gains.
- Gross unrecognized holding losses.
- The net carrying amount.
- The gross gains and losses in accumulated other comprehensive income for any derivatives that hedged the forecasted acquisition of the held-to-maturity securities.

For debt securities classified as available-for-sale and separately for securities classified as held-to-maturity, disclose information about the contractual maturities of the securities as of the date of the most recent statement of financial position presented.

**Exhibit 3-7—continued**  
**Investments in Certain Securities**  
**General Disclosure Considerations**

For each period for which the results of operations are presented disclose—

- The proceeds from sales of available-for-sale securities and the gross realized gains and gross realized losses that have been included in earnings as a result of those sales.
- The basis on which the cost of a security sold or the amount reclassified out of accumulated other comprehensive income into earnings was determined.
- The gross gains and gross losses included in earnings from transfers of securities from the available-for-sale category into the trading category.
- The amount of the net unrealized holding gain or loss on available-for-sale securities for the period that has been included in accumulated other comprehensive income for the period and the amount reclassified out of accumulated other comprehensive income for the period.
- The portion of trading gains and losses for the period that relates to trading securities still held at the reporting date.

For any sales of or transfers from securities classified as held-to-maturity, disclose the net carrying amount of the sold or transferred security, the net gain or loss in accumulated other comprehensive income for any derivative that hedged the forecasted acquisition of the held-to-maturity security, the related realized or unrealized gain or loss, and the circumstances leading to the decision to sell or transfer the security for each period for which results of operations are presented.

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*Examples and Illustrations.* Chapter 7 provides an example of the accounting for the reclassification of an available-for-sale security as held-to-maturity. The example also illustrates the application of the audit guidance contained in SAS No. 92, such as the procedures that might be applied to obtain audit evidence supporting management's intent and ability.

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## Investments in Other Securities

**3.39** The requirements for accounting for investments in other securities generally are prescribed by Accounting Principles Board Opinion No. 18, *The Equity Method of Accounting for Investments in Common Stock*.<sup>9</sup> The Opinion generally requires accounting for those investments using either the cost or the equity method of accounting.

### The Cost Method

**3.40** Under the cost method of accounting, investments generally are recorded at the amount paid for them, and the carrying amount is not adjusted for subsequent changes in value unless there is a decline in value below the carrying amount that is considered to be other than temporary. In that situation, the investment should be written down to its fair value, with an offsetting charge to earnings. That amount becomes the new cost basis, and subsequent unrealized gains above that amount should not be recognized.

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<sup>9</sup> Certain investments in securities require consolidating the financial information of the investee with that of the investor. For example, FASB Statement No. 94, *Consolidation of All Majority-Owned Subsidiaries*, generally requires consolidation for investments in majority-owned subsidiaries. This Guide does not address investments that require consolidation.

## The Equity Method of Accounting

**3.41** Under the equity method of accounting, the investment is initially recorded at cost but is subsequently adjusted for the investor's proportionate share of the investee's earnings and losses, and for dividends from the investee. However, certain conditions must exist before the basis of the investment is reduced below zero.

**3.42** If there is a difference between the cost of the investment and the investor's proportionate share of the equity at the date the investment is acquired, the difference generally should be amortized to future earnings based on its underlying character. A decline in the value of the investment below its financial basis that is other than temporary should be recognized through a charge to earnings. That becomes the new carrying amount, and subsequent unrealized gains above that amount should not be recognized.

**3.43** The equity method of accounting is sometimes referred to as a one-line consolidation because the investor's equity and net income are the same as if the investee's financial results were consolidated with those of the investor. For example, transactions between the investee and the investor generally are eliminated the same as if consolidated financial statements were prepared.

## Selecting Between the Two Methods

**3.44** Generally, the investor should use the equity method of accounting if it has the ability to exercise significant influence over the operating and financial policies of the investee. There is a rebuttable presumption that an equity interest of 20 percent to 50 percent gives the investor that ability. Disclosures are required when the method of accounting for the investment differs from the method that would be expected based on the rebuttable presumption.

## Fair Value Disclosure Considerations

**3.45** Securities are financial instruments. FASB Statement No. 107 applies to investments that are accounted for using the cost method, but it specifically exempts those accounted for using the equity method. (However, FASB Statement No. 107 also exempts from its requirements nonpublic entities that have total assets of less than \$100 million and that have no derivatives.)

## Summary: Audit Implications

- Generally accepted accounting principles require that all derivatives and certain debt and equity securities be measured at fair value. The auditor should determine whether generally accepted accounting principles specify the method to be used to determine fair value and evaluate whether the determination of fair value is consistent with the specified valuation method. If the determination of fair value requires the use of estimates, the auditor should consider the guidance in SAS No. 57, *Auditing Accounting Estimates* (AICPA, *Professional Standards*, vol. 1, AU sec. 342).
- Generally accepted accounting principles prescribe the manner in which unrealized gains and losses should be reported. The auditor should gather evidential matter to support the amount of unrealized gains and losses that are recognized in earnings or other comprehensive income or that are disclosed because of the ineffectiveness of a hedge.

- Generally accepted accounting principles prescribe the conditions that must be met in order for hedge accounting to be applied, including the requirement for management to document certain considerations. The auditor should gather evidential matter to determine whether management complied with these requirements and to support management's expectation at the inception of the hedge that the hedging relationship will be highly effective and its periodic assessment of the ongoing effectiveness of the hedging relationship.
- Generally accepted accounting principles sometimes require different accounting depending on management's intent and ability. For example, whether a debt security is classified as held-to-maturity and reported at its amortized cost depends on management's intent and ability to hold the security to its maturity. Auditing assertions based on management's intent and ability requires a variety of special considerations. Ordinarily the auditor should obtain written representations from management confirming aspects of management's intent and ability that affect assertions about derivatives and securities.
- Generally accepted accounting principles prescribe a variety of presentation and disclosure considerations for derivatives and securities. The auditor should compare the presentation and disclosure with the requirements of generally accepted accounting principles and should also follow the guidance in SAS No. 32, *Adequacy of Disclosure in Financial Statements* (AICPA, *Professional Standards*, vol. 1, AU sec. 431), in evaluating the adequacy of disclosure that is not specifically required by generally accepted accounting principles.

## Chapter 4

# Inherent Risk Assessment

### Assessing Inherent Risk

**4.01** The inherent risk for an assertion about a derivative or security is its susceptibility to a material misstatement, assuming that there are no related controls. To assess inherent risk, an auditor should start by understanding the nature of the entity's business and the economics and business purpose of its finance activities, all of which may influence the entity's decision to enter into derivatives and securities transactions. For example, when concerns exist about increases in interest rates, an entity may seek to fix the effective interest rate levels of its variable-rate debt by entering into swap agreements.

**4.02** It may be helpful for the auditor to consider whether the entity's derivatives and securities transactions are initiated primarily in response to risk management or profit initiatives. Derivatives and securities transactions initiated primarily in response to cost control initiatives involve risk management activities, such as hedging. On the other hand, derivatives and securities transactions initiated in response to profit initiatives include the use of derivatives and securities as investments. The inherent risks associated with risk management differ from those associated with investing.

**4.03** For derivatives, assessing inherent risk can be difficult because of the combination of certain of their characteristics, including—

- *Interaction with other activities.* The impact of derivatives on the entity and the related risks usually cannot be considered in isolation because derivatives usually interact (sometimes in complex ways) with other transactions and activities of the entity.
- *Asymmetrical risks.* The risks of some derivatives may not be symmetrical. For example, the writer of an option has the potential to incur an unlimited loss, while the gain on the transaction is limited to the amount of the premium received.
- *Volatility.* The value of a derivative can be volatile.

### Sources of Information About Inherent Risk

**4.04** Auditors may use a variety of sources to gather the information necessary to assess inherent risk, including—

- Inquiries of management, particularly those responsible for derivatives and securities activities.
- Other information, such as minutes of meetings of the board of directors or finance, asset/liability, investment, or other committees.
- Reports prepared by internal auditors that address the entity's finance function.
- Activity reports of typical transaction accounts, for example securities.
- Actual contracts, such as interest rate swap agreements.

- Interim financial information that may include derivatives and securities transactions.
- Prior experience with the entity or with similar derivatives and securities.

## Inherent Risk Factors

**4.05** SAS No. 92 gives examples of considerations that might affect the auditor's assessment of the inherent risk for assertions about derivatives and securities.

- Management's objectives.
- The complexities of the features of the derivative or security.
- Whether the transaction that gave rise to the derivative or security involved the exchange of cash.
- The entity's experience with the derivative or security.
- Whether a derivative is freestanding or an embedded feature of an agreement.
- Whether external factors affect the assertion.
- The evolving nature of derivatives and the applicable generally accepted accounting principles.
- Significant reliance on outside parties.
- Generally accepted accounting principles may require developing assumptions about future conditions.

This section provides additional discussion of some of those examples.

## Management's Objectives

**4.06** The accounting for securities may depend on management's intent and its ability to realize those intentions; for example, whether—

- Debt securities are reported at their cost may depend on management's intent and ability to hold them to their maturity.
- Equity securities are reported using the equity method may depend on management's ability to significantly influence the investee.

Circumstances where the accounting treatment depends on subjective criteria, such as management's intent and ability tend to increase inherent risk.

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*Examples and Illustrations.* Chapter 6 describes procedures auditors may perform to gather evidence relating to management's intent and ability.

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**4.07** The accounting for derivatives depends on management's objectives in entering into those instruments. As described in chapter 3, derivatives can be held for hedging or investment purposes, which in turn determines how changes in the fair value of those derivatives are reported. Derivatives used as hedges are subject to the risk that market conditions will change so that the hedge is no longer effective and continuing to apply hedge accounting is not in conformity with generally accepted accounting principles.

## Complexity of the Features of the Derivative or Security

**4.08** The more complex a derivative or security, the more difficult it is to determine its fair value. The fair values of derivatives and securities that are exchange-traded are available from independent pricing sources, such as financial publications. The fair values of other derivatives and securities may be

available through broker-dealers not affiliated with the entity. Determining fair value can be particularly difficult, however, if a transaction has been customized to meet individual user needs. For example, determining the value of customized interest rate swaps requires various quantitative assumptions and modeling. Valuation risk exists whenever models (as opposed to quoted market prices) are used to determine the fair value of a derivative or security. Valuation risk is the risk associated with the imperfections and subjectivity of these models and their related assumptions.

**Transactions Not Involving an Exchange of Cash**

4.09 Many derivatives and securities transactions do not involve an exchange of cash when they are initiated. For example, parties to a foreign exchange forward contract may agree to exchange cash at a later date based upon movements in currency rates over the life of the contract. Contracts that do not involve an initial exchange of cash are subject to an increased inherent risk that they will not be identified and recorded in the financial statements.

*Examples and Illustrations.* Chapter 6 provides example procedures auditors may perform to gather evidence supporting completeness assertions about derivatives that do not involve an exchange of cash.

**The Entity’s Experience With the Derivative or Security**

4.10 Auditors should assess the experience senior management has with finance activities. Significant use of derivatives and securities, particularly complex derivatives, without relevant expertise within the entity increases inherent risk. In addition, infrequent transactions are more likely to be overlooked by management for consideration of relevant measurement and disclosure issues.

**Freestanding Versus Embedded Features**

4.11 As described in chapter 3, certain derivatives may be embedded in other contracts. Embedded derivatives are less likely to be identified by management than derivatives that are freestanding contracts, which increases the inherent risk. In making inquiries of management, auditors should be alert for agreements that may contain embedded derivatives that should be evaluated for valuation and disclosure purposes. Exhibit 4-1 provides some examples of agreements that may contain embedded derivatives.

<b>Exhibit 4-1*</b> <b>Examples of Hybrid Instruments That May Contain Embedded Derivatives</b>	
<b>Name</b>	<b>Description</b>
Inverse floater	A bond with a coupon rate of interest that varies inversely with changes in specified general interest rate levels or indexes (for example, LIBOR)
Levered inverse floater	A bond with a coupon that varies indirectly with changes in general interest rate levels and applies a multiplier (greater than 1.00) to the specified index in its calculation of interest
Delevered floater	A bond with a coupon that depends on the number of days that a reference rate stays within a preestablished collar; otherwise, the bond pays either zero percent interest or a below-market rate.

*(continued)*



**Exhibit 4-1\*—continued**  
**Examples of Hybrid Instruments That May Contain**  
**Embedded Derivatives**

Name	Description
Ratchet floater	A bond that pays a floating rate of interest and has an adjustable cap, adjustable floor, or both that move in sync with each new reset rate.
Equity-indexed note	A bond for which the return of interest, principal, or both is tied to a specified equity security or index (for example, the Standard and Poor's 500 index). This instrument may contain a fixed or varying coupon rate and may place all or a portion of principal at risk.
Variable principal redemption bond	A bond whose principal redemption value at maturity depends on the change in an underlying index over a predetermined observation period.
Crude Oil Knock-in Note	A bond that has a 1 percent coupon and guarantees repayment of principal with upside potential based on the strength of the oil market.
Gold-linked bull note	A bond that has a fixed 3 percent coupon and guarantees repayment of principal with upside potential if the price of gold increases
Disaster bond	A bond that pays a coupon above that of an otherwise comparable traditional bond; however, all or a substantial portion of the principal amount is subject to loss if a specified disaster experience occurs.
Specific equity-linked bond	A bond that pays a coupon slightly below that of traditional bonds of similar maturity; however, the principal amount is linked to the stock market performance of an equity investee of the issuer. The issuer may settle the obligation by delivering the shares of the equity investee or may deliver the equivalent fair value in cash.
Short-term loan with a foreign currency option	A U.S. lender issues a loan at an above-market interest rate. The loan is made in U.S. dollars, the borrower's functional currency, and the borrower has the option to repay the loan in U.S. dollars or in a fixed amount of a specified foreign currency
Certain purchases in a foreign currency	A U.S. company enters into a contract to purchase corn from a local American supplier in six months for yen; the yen is the functional currency of neither party to the transaction. The corn is expected to be delivered and used over a reasonable period in the normal course of business.
Convertible debt	An investor receives a below-market interest rate and receives the option to convert its debt instrument into the equity of the issuer at an established conversion rate. The terms of the conversion require that the issuer deliver shares of stock to the investee.

\* This table was derived from section 2 of appendix B of FASB Statement No. 133, which has additional descriptions of the agreements and provides examples and accounting guidance.

## Risks Related to External Factors

4.12 Derivatives and securities may be affected by a variety of risks related to external factors, such as—

- *Credit risk.* Credit risk relates to the economic losses the end user of the derivative or security would suffer if the counterparty failed to meet its obligation. The accounting loss related to credit risk is defined by the carrying amount of the derivative or security in the entity's statement of financial position, which generally is fair value. For certain derivatives, fair values are volatile, so the credit risk exposure also is volatile. Generally, a derivative has credit risk only when it has positive fair 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 fair value of a derivative may fluctuate quickly, alternating between positive and negative values.

Many derivatives are traded under uniform rules through an organized exchange (referred to as *exchange-traded derivatives*). Exchange-traded derivatives generally remove individual counterparty risk and substitute the clearing organization as the settling counterparty. Typically, the participants in an exchange-traded derivative settle changes in the value of their positions daily, which further mitigates credit risk.

Settlement risk is the related exposure that a counterparty may fail to perform under a contract after the end user has delivered funds or assets according to its obligations. Settlement risk relates almost solely to over-the-counter contracts (that is, non-exchange-traded.) 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.

- *Market risk.* Market risk relates broadly to economic losses due to adverse changes in market factors that affect the fair value of the derivative or security. Related risks include—
  - *Price risk*, which relates to changes in the level of prices due to changes in interest rates, foreign exchange rates, or, in the case of derivatives, other factors that relate to market volatility of the underlying rate, index, or price.
  - *Liquidity risk*, which relates to changes in the ability to sell or dispose of the security or derivative. Derivatives bear the additional risk that a lack of sufficient contracts or willing counterparties may make it difficult to close out the derivative or enter into an offsetting contract.
- *Basis risk.* Derivatives used in hedging transactions bear additional risk for the risk of loss from ineffective hedging activities, referred to as *basis risk*. This risk is the difference between the fair value (or cash flows) of the hedged item and the fair value (or cash flows) of the hedging derivative. The entity is subject to the risk that fair values (or cash flows) will change so that the hedge will no longer be effective.
- *Legal risk.* Legal risk relates to losses due to 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 documentation for the contract, an inability to enforce a netting

arrangement in bankruptcy, adverse changes in tax laws, or statutes that prohibit entities (such as certain state and local governmental entities) from using certain types of derivatives and securities.

### **Evolving Nature of Generally Accepted Accounting Principles**

**4.13** As indicated in the first two chapters, the nature and use of derivatives and securities continue to evolve, particularly for derivatives. In addition, as new derivatives come into use, significant issues can arise about the application of existing accounting principles. In some cases, new accounting guidance may have to be developed to address them.

**4.14** Auditors should be cognizant of the changes to generally accepted accounting principles that are required by the evolving nature of derivatives and look to the DIG and EITF guidance that is most applicable to emerging practice problems in the accounting for derivatives.

### **Summary of Considerations**

**4.15** Exhibit 4-2 summarizes the considerations that might affect the auditor's assessment of the inherent risk for assertions about derivatives and securities. Exhibit 4-3 is a questionnaire for assessing inherent risk.

<b>Exhibit 4-2 Characteristics That Might Affect Inherent Risk</b>			
<b>Characteristic</b>	<b>Indications of</b>		
	<b>Higher Risk</b>	<b>Lower Risk</b>	<b>Related Assertion</b>
Management's objective	Derivatives used as hedges	Derivatives held as investments	Rights and obligations, valuation, and presentation and disclosure
Management's intent and ability	Accounting treatment based on management's intent and ability	Accounting treatment based on objective criteria	Valuation and presentation and disclosure
Complexity of derivative or security	Customized instrument	Less complex instrument traded on an exchange	Rights and obligations, valuation, and presentation and disclosure
Relationship of the derivative to the hedged item	Low degree of correlation	High degree of correlation	Valuation and presentation and disclosure
Entity's experience with the derivative or security	Little experience	Highly experienced	All
Exchange of cash at inception	No exchange of cash at inception	Cash exchanged at inception	Completeness and presentation and disclosure
Freestanding versus embedded	Embedded derivative	Freestanding derivative	Completeness
Credit risk	High counterparty credit risk	Low counterparty credit risk	Valuation
Market risk	Volatile values	Stable values	Valuation
Nature of derivative or security and related accounting principles	Rapidly evolving	Relatively stable	All
Reliance on external expertise	Significant	Minimal	All
Assumptions about future conditions	Significant subjective assumptions	Relatively few, objective and verifiable assumptions	All

**Exhibit 4-3**  
**Questionnaire for Assessing Inherent Risk**

- How do general economic conditions and the nature of the entity's industry affect its derivatives and securities transactions?
- What derivatives and securities are held by the entity and what is the nature of its main derivatives and securities activities? What is the business purpose of these activities?
- What are the major financing risks facing the entity and how are these managed, for example the—
  - Macroeconomic risks faced by the entity.
  - Maturity profile of its cash/debt and committed credit lines.
  - Amount of net debt and cash in each major currency, analyzed between fixed and floating rates.
  - Foreign exchange and interest rate risks.
  - Translational risk due to net assets being held overseas.
- Are derivatives used in hedging activities or as investments?
- Are quoted market prices from an independent source available to establish the fair value of derivatives and securities?
- Has the entity entered into derivatives transactions that do not involve an initial exchange of cash?
- What is management's level of experience with regard to its derivatives and securities activities?
- Has the entity entered into agreements that might contain embedded derivatives?
- What steps has the entity taken to mitigate the credit risk associated with its derivatives and securities?
- Has management identified the market risks associated with its derivatives and securities? How are these risks managed?

### Summary: Audit Implications

- Assessing inherent risk for derivatives and securities, particularly complex derivatives, can be difficult.
- Auditors should refer to the examples contained in SAS No. 92 and the guidance in this Guide to assess the characteristics of the entity and its derivatives and securities transactions that impact inherent risk.

## Chapter 5

# Control Risk Assessment

## The Auditor's Assessment of Control Risk for Assertions<sup>1</sup> About Derivatives and Securities

5.01 Control risk for assertions about derivatives and securities is the risk that a material misstatement of those assertions could occur and not be detected and corrected on a timely basis by the entity's internal control. In assessing control risk for assertions about derivatives and securities, the auditor may consider the five components of internal control:

- a. *Control environment*, which sets the tone of the entity, influencing the control consciousness of its people, and is the foundation for all other components of internal control, providing discipline and structure
- b. *Risk assessment*, which is the entity's identification and analysis of relevant risks to achievement of its objectives, forming a basis for determining how the risks should be managed
- c. *Control activities*, which are the policies and procedures that help ensure that management directives are carried out
- d. *Information and communication*, which are the identification, capture, and exchange of information in a form and time frame that enable people to carry out their responsibilities
- e. *Monitoring*, which is a process that assesses the quality of internal control performance over time

However, these components do not necessarily reflect how an entity considers and implements controls for derivatives and securities transactions, and the auditor's primary consideration is whether a control affects assertions about derivatives and securities rather than its classification into a particular component.

5.02 An entity's controls address objectives in each of three categories—reliability of financial reporting, effectiveness and efficiency of operations, and compliance with applicable laws and regulations—but some of the controls are not relevant to the auditor in designing procedures for assertions about derivatives and securities. For example, controls related to operations and compliance objectives may not be relevant to the auditor in designing procedures for assertions about derivatives and securities because the auditor does not use the data for which those objectives relate in auditing assertions about derivatives and securities. The auditor need not consider controls that are not relevant to the audit.

5.03 The auditor should obtain an understanding of internal control sufficient to plan the audit of assertions about derivatives and securities. The understanding should encompass the design of controls relevant to those assertions and whether the controls have been placed in operation. After obtaining this understanding, the auditor should assess control risk for the

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<sup>1</sup> Throughout SAS No. 92 and this Guide, the word *assertion* refers to an assertion made in an entity's financial statements.

assertions. Assessments of control risk below the maximum require the auditor to obtain evidential matter about the operating effectiveness of one or more controls relevant to the assertions. The auditor should use the knowledge provided by the understanding of internal control and the assessed level of control risk in determining the nature, timing, and extent of substantive tests for the assertions about derivatives and securities.

## Obtaining an Understanding of Internal Control to Plan the Audit

**5.04** SAS No. 55, *Consideration of Internal Control in a Financial Statement Audit*, as amended (AICPA, *Professional Standards*, vol. 1, AU sec. 319), requires the auditor to obtain an understanding of internal control sufficient to plan the audit and determine the nature, timing, and extent of tests to be performed.

**5.05** Controls should be related to management's objectives for financial reporting, operations, and compliance. For example, to achieve its financial reporting control objectives, management of an entity with extensive derivatives transactions may implement controls that call for—

- a. Monitoring by a control staff that is fully independent of derivatives activities.
- b. Derivatives traders, risk managers, and senior management to define constraints on derivatives activities, justify identified excesses, and obtain, prior to exceeding limits, at least oral approval from members of senior management who are independent of derivatives.
- c. Senior management to properly address limit excesses and divergences from approved derivatives strategies.
- d. The accurate transmittal of derivatives positions and the appropriate use of derivatives positions to the risk measurement systems.
- e. The performance of appropriate reconciliations to ensure data integrity across the full range of derivatives, including any new or existing derivatives that may be monitored apart from the main processing networks.
- f. Senior management, an independent group, or an individual who management designates to perform a regular review of the identified controls and financial results of the derivatives activities to determine whether controls are being effectively implemented and the entity's business objectives and strategies are being achieved.
- g. A review of limits in the context of changes in strategy, risk tolerance of the entity, and market conditions.

**5.06** Exhibit 5-2 provides examples of control objectives and related controls for securities, and Exhibit 5-4 provides examples of control objectives and related controls for derivatives and hedging activities.

**5.07** The extent of the understanding of internal control over derivatives, hedging activities, and securities obtained by the auditor depends on how much information the auditor needs to—

- a. Identify the types of potential misstatements.
- b. Consider factors that affect the risk of material misstatement.
- c. Design tests of controls where appropriate.
- d. Design substantive tests.

The understanding obtained may include controls over derivatives and securities transactions from their initiation to their inclusion in the financial statements. It may encompass controls placed in operation by the entity and by service organizations whose services are part of the entity's information system. SAS No. 55 (AU sec. 319.34) defines the information system as the methods and records established by an entity to record, process, summarize, and report entity transactions and to maintain accountability for the related assets, liabilities, and equity. Chapter 9 provides a case study using three scenarios to illustrate how the entity's use of service organizations affects the auditor's considerations in planning and performing auditing procedures for assertions about securities and securities transactions.

## **The Effect of the Use of Service Organizations on the Auditor's Understanding of Internal Control**

**5.08** An entity may use a service organization to perform a wide variety of services related to its derivatives and securities. Entities generally use service organizations because they do not have the internal expertise or skills to perform the service or because it is cost-effective to outsource the service. The requirement to obtain an understanding of internal control over derivatives and securities may therefore extend beyond the controls in place at the entity's facilities and extend to service organizations that perform services for the entity's derivatives and securities.

**5.09** SAS No. 70, *Service Organizations* (AICPA, *Professional Standards*, vol. 1, AU sec. 324), provides guidance on the effect of the use of service organizations on the auditor's understanding of internal control. It notes that the understanding of controls the auditor needs to plan the audit may encompass controls placed in operation by the entity and by service organizations whose services are part of the entity's information system.

## **Determining Whether the Service Organization's Services Are Part of the Entity's Information System**

**5.10** A service organization's services are part of an entity's information system for derivatives and securities if they affect any of the following:

- a. How the entity's derivatives and securities transactions are initiated
- b. The accounting records, supporting information, and specific accounts in the financial statements involved in the processing and reporting of the entity's derivatives and securities transactions
- c. The accounting processing involved from the initiation of those transactions to their inclusion in the financial statements, including electronic means (such as computers and electronic data interchange) used to transmit, process, maintain, and access information
- d. The process the entity uses to report information about derivatives and securities transactions in its financial statements, including significant accounting estimates and disclosures

**5.11** Examples of a service organization's services for derivatives and securities that would be part of an entity's information system include—

- The initiation of the purchase or sale of equity securities by a service organization acting as investment adviser or manager.



- Services that are ancillary to holding<sup>2</sup> an entity's securities such as—
  - Collecting dividend and interest income and distributing that income to the entity.
  - Receiving notification of corporate actions.
  - Receiving notification of security purchase and sale transactions.
  - Receiving payments from purchasers and disbursing proceeds to sellers for security purchase and sale transactions.
  - Maintaining records of securities transactions for the entity.
- A pricing service providing fair values of derivatives and securities through paper documents or electronic downloads that the entity uses to value its derivatives and securities for financial statement reporting.

5.12 Examples of a service organization's services for securities that would not be part of an entity's information system are the following:

- The execution by a securities broker of trades that are initiated by either the entity or its investment adviser
- The holding of an entity's securities

### Considering the Significance of the Service Organization's Controls

5.13 Once the auditor has determined that the service organization's services are part of the entity's information system, the auditor should consider the significance of the service organization's controls. That depends primarily on the—

- Nature and materiality of the transactions the service organization processes for the entity.
- Degree of interaction between the activities of the service organization and the entity.

5.14 *Nature and materiality of the transactions.* The more material the transactions processed by the service organization are to the entity's financial statements, the more likely the service organization's controls are to be significant to the entity's controls.

5.15 *Degree of interaction between the activities of the service organization and those of the entity.* The degree of interaction relates to the extent to which the entity implements effective controls over the services provided by the service organization. For example—

- If the entity implements effective controls over the services, the auditor may not need to gain an understanding of the controls at the service organization in order to plan the audit.
- If the entity has not placed into operation effective controls over the service organization's services, the auditor most likely will need to gain an understanding of the service organization's controls.

### Obtaining Information About a Service Organization's Controls

5.16 An auditor who needs information about the nature of a service organization's services that are part of an entity's information system for derivatives and securities transactions, or its controls over those services, to plan

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<sup>2</sup> In SAS No. 92 and this Guide, maintaining custody of securities, either in physical or electronic form, is referred to as *holding* securities, and performing ancillary services is referred to as *servicing* securities.

the audit may be able to gather the information from a variety of sources, such as the following:

- User manuals
- System overviews
- Technical manuals
- The contract between the entity and the service organization
- Reports by auditors,<sup>3</sup> internal auditors, or regulatory authorities on the information system and other controls placed in operation by a service organization
- Inquiry or observation of personnel at the entity or at the service organization

In addition, if the services and the service organization's controls over those services are highly standardized, information about the service organization's services, or its controls over those services, obtained through the auditor's prior experience with the service organization may be helpful in planning the audit.

## Using the Report of a Service Auditor

**5.17** A service organization may engage an auditor (the service auditor) to perform procedures relating to its controls for the benefit of auditors of entities who use the service organization's services. There are two types of reports a service auditor might issue, which are referred to as a type 1 report and a type 2 report and are summarized in Exhibit 5-1. The Audit Guide *Service Organizations: Applying SAS No. 70* provides detailed discussions on the content of those reports and guidance to auditors in using them. As a practical matter, whenever an entity uses a service organization to provide services that are part of the entity's information system, the auditor should ask if the entity has received a SAS No. 70 report. If it has, the auditor should read the report, looking for information that will be useful in planning the audit.

<b>Exhibit 5-1 Summary of Service Auditor Reports</b>		
<b>Title</b>	<b>Contents</b>	<b>Relevance to Auditors</b>
<p>Reports on controls placed in operation (type 1 report)</p>	<ul style="list-style-type: none"> <li>● Describes controls and whether they are suitably designed to achieve specified control objectives</li> <li>● States whether controls had been placed in operation by a specified date</li> </ul>	<ul style="list-style-type: none"> <li>● Helps the auditor gain an understanding of controls necessary to plan the audit</li> <li>● Does not provide a basis for reducing the assessment of control risk below the maximum</li> </ul>
<p>Report on controls placed in operation and tests of operating effectiveness (type 2 report)</p>	<p>Includes all elements of the type 1 report and—</p> <ul style="list-style-type: none"> <li>● Expresses an opinion as to whether the controls that were tested were operating effectively</li> </ul>	<p>Has the same utility as a type 1 report and—</p> <ul style="list-style-type: none"> <li>● Provides a basis for reducing the assessment of control risk below the maximum</li> </ul>

<sup>3</sup> SAS No. 70 provides guidance on auditors' reports on controls placed in operation by a service organization and the operating effectiveness of those controls.

## When the Necessary Information Is Not Available

**5.18** In the rare circumstance when necessary information about a service organization's controls is not available, the auditor will have to either—

- Perform, or engage another auditor to perform, procedures at the service organization necessary to gather the information necessary to plan the audit.
- Disclaim an opinion or issue a qualified opinion.

## Assessing Control Risk

**5.19** After obtaining the understanding of internal control over derivatives, hedging activities, and securities, the auditor should assess control risk for the related assertions. Guidance on that assessment is found in SAS No. 55.

**5.20** If the auditor plans to assess control risk below the maximum for one or more assertions about derivatives and securities, the auditor should identify specific controls relevant to the assertions that are likely to prevent or detect material misstatements and that have been placed in operation by either the entity or the service organization, and gather evidential matter about their operating effectiveness. Evidential matter about the operating effectiveness of a service organization's controls may be gathered through tests performed by the auditor or by an auditor engaged by either the auditor or the service organization—

- As part of an engagement in which a service auditor reports on the controls placed in operation by the service organization and the operating effectiveness of those controls, as described in SAS No. 70.
- As part of an agreed-upon procedures engagement.<sup>4</sup>
- To work under the direction of the auditor of the entity's financial statements.

Confirmations of balances or transactions from a service organization do not provide evidential matter about its controls. Examples of tests of controls the auditor may perform to gather evidential matter about the operating effectiveness of controls are in paragraph 5.32 for tests of controls over securities and paragraph 5.38 for tests of controls over derivatives and hedging activities.

**5.21** The auditor should consider the size of the entity, the entity's organizational structure, the nature of its operations, the types, frequency, and complexity of its derivatives and securities transactions, and its controls over those transactions in designing auditing procedures for assertions about derivatives and securities. For example, if the entity has a variety or high volume of derivatives and securities that are reported at fair value estimated using valuation models, the auditor may be able to reduce the substantive procedures for valuation assertions by gathering evidential matter about the controls over the design and use of the models (including the significant assumptions) and evaluating their operating effectiveness.

**5.22** In some circumstances, it may not be practicable or possible for the auditor to reduce audit risk to an acceptable level without identifying controls placed in operation by the entity or a service organization and gathering evidential matter about the operating effectiveness of those controls. For example, if the

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<sup>4</sup> Statement on Standards for Attestation Engagements (SSAE) No. 4, *Agreed-Upon Procedures Engagements* (AICPA, *Professional Standards*, vol. 1, AT sec. 600), provides guidance on applying agreed-upon procedures.

entity has a large number of derivatives or securities transactions, the auditor likely would be unable to reduce audit risk to an acceptable level for assertions about the occurrence of earnings on those securities, including gains and losses from sales, without identifying controls over the authorization, recording, custody, and segregation of duties for those transactions and gathering evidential matter about their operating effectiveness.

**5.23** One of the characteristics of derivatives is that they may involve only a commitment to perform under a contract and not an initial exchange of tangible consideration. If one or more service organizations provide services that are part of the entity's information system for derivatives, the auditor may be unable to sufficiently limit audit risk for assertions about the completeness of derivatives without obtaining evidential matter about the operating effectiveness of controls at one or more service organizations. Since the auditor's concern is that derivatives that do not require an initial exchange of tangible consideration may not have been recorded, testing reconciliations of information provided by two or more service organizations may not sufficiently limit audit risk for assertions about the completeness of derivatives.

**5.24** *Using the report of a service auditor.* A type 1 report is not intended to provide an auditor with a basis for reducing the auditor's assessment of control risk below the maximum. In a type 2 engagement, the service auditor performs the procedures required for a type 1 engagement and also performs tests of specific controls to evaluate their operating effectiveness in achieving specified control objectives. Tests of operating effectiveness address how controls are applied, how consistently they are applied, and who applies them.

**5.25** The Audit Guide *Service Organizations: Applying SAS No. 70* provides guidance on using a type 2 report in assessing control risk below the maximum. The service auditor's opinion should not be the only basis for reducing the assessed level of control risk below the maximum. The auditor should read and consider both the opinion and the evidence provided by the tests of operating effectiveness and relate them to the assertions in the entity's financial statements. Although a type 2 report may be used to reduce substantive tests, it is not designed to provide a basis for assessing control risk sufficiently low to eliminate the need for performing any substantive tests for all the assertions about derivatives, hedging activities, and securities.

## Considering Procedures Performed by Internal Auditors

**5.26** The auditor may consider the work performed by the entity's internal auditors in obtaining an understanding of the entity's controls over derivatives and securities and gathering evidential matter about the effectiveness of those controls. Guidance on considering the work performed by internal auditors is found in SAS No. 65, *The Auditor's Consideration of the Internal Audit Function in an Audit of Financial Statements* (AICPA, *Professional Standards*, vol. 1, AU sec. 322).

**5.27** Examples of reports of internal auditors that may be helpful to the auditor in assessing control risk for assertions about the entity's derivatives and securities are those that—

- Review the appropriateness of policies and procedures related to derivatives and securities transactions and the entity's compliance with them.
- Assess the effectiveness of relevant controls.
- Review the information systems used to process derivatives and securities transactions.

- Determine that established policies are communicated and understood throughout the entity.
- Assess whether new risks relating to derivatives and securities transactions are being identified, assessed, and managed.
- Evaluate whether the accounting for derivatives and securities is in accordance with generally accepted accounting principles.
- Review trader (front office) to operations (back office) reconciliations for open positions and profit and loss.
- Review valuation processes and sources for data inputs.

### Examples of Control Objectives, Controls, and Tests of Controls for Assertions About Securities

5.28 Examples of control objectives for the financial reporting of securities include—

- Securities transactions are initiated in accordance with management’s established policies.
- Information relating to securities and securities transactions is complete and accurate.
- Securities are on hand or held in custody or for safekeeping by others.
- The carrying amount of debt and equity securities covered by FASB Statement No. 115 is adjusted to fair value, and changes in the fair value of those securities are accounted for in conformity with generally accepted accounting principles.
- Securities are monitored on an ongoing basis to recognize and measure events affecting related financial statement assertions.

5.29 Exhibit 5-2 gives examples of controls that may be designed to ensure that these examples of control objectives are met.

<b>Exhibit 5-2</b> <b>Examples of Control Objectives and Related Controls for Securities</b>	
<b>Control Objective</b>	<b>Related Controls</b>
<p>Securities transactions are initiated in accordance with management’s established policies.</p>	<ul style="list-style-type: none"> <li>● Guidelines have been prescribed for acceptable risk and rate of return levels for the entity’s securities. Securities personnel must obtain approval to purchase securities that do not conform with the prescribed guidelines. Supervisory personnel monitor securities purchases to determine whether approval was obtained to purchase securities that do not conform with the prescribed guidelines.</li> <li>● Lists of authorized securities dealers are maintained and updated periodically, and supervisory personnel periodically review documentation of securities transactions to determine whether only authorized dealers were used.</li> <li>● The board of directors, generally through its finance, asset/liability, investment, or other committee, reviews reports of securities transactions to determine whether the entity’s guidelines for securities transactions are being complied with.</li> </ul>

<b>Exhibit 5-2—continued</b>	
<b>Examples of Control Objectives and Related Controls for Securities</b>	
<b>Control Objective</b>	<b>Related Controls</b>
<p>Information relating to securities and securities transactions is complete and accurate.</p> <p>Securities are on hand or held in custody or for safekeeping by others.</p> <p>The carrying amount of debt and equity securities covered by FASB Statement No. 115 is adjusted to fair value, and changes in the fair value of those securities are accounted for in conformity with generally accepted accounting principles.</p> <p>Securities are monitored on an ongoing basis to recognize and measure events affecting related financial statement assertions.</p>	<ul style="list-style-type: none"> <li>● The board of directors, generally through its finance, asset/liability, investment, or other committee, must approve changes in securities policies, and approval must be documented.</li> <li>● Duties among those who initiate securities transactions, have access to securities, and post or reconcile related accounting records are appropriately segregated, and supervisory personnel regularly review reconciliations of information provided by individuals performing these functions.</li> <li>● Supervisory personnel periodically review documentation supporting the acquisition and transfer of securities to ensure that classification of the securities was made and documented at acquisition (and date of transfer, if applicable) and is in accordance with the entity's securities policies, management's intent, and generally accepted accounting principles.</li> <li>● Supervisory personnel periodically review accounting entries supporting securities transactions.</li> <li>● Supervisory personnel periodically review reconciliations of subsidiary ledgers with general ledger accounts.</li> <li>● Supervisory personnel periodically analyze recorded interest and dividend income, including comparing actual yields during the period with expected yields based on previous results and current market trends, and investigate significant differences from the expected results.</li> <li>● Supervisory personnel periodically review recorded securities, compare them with safekeeping ledgers and timely custodial confirmations, and investigate significant differences.</li> <li>● Supervisory personnel periodically review the recorded fair values of securities and investigate significant differences from the amounts expected.</li> <li>● Supervisory personnel monitor realized gains and losses to determine that appropriate amounts have been reclassified from accumulated other comprehensive income.</li> <li>● Supervisory personnel regularly review recorded securities to determine that events affecting their presentation and disclosure are considered, such as factors indicating impairment, loans of the securities to other entities, or pledging securities as collateral.</li> </ul>

**5.30** Many of the controls for securities may be performed directly by senior management. While management's close attention to securities transactions can be an effective control, the auditor should be alert to potential abuses and overrides of policies and procedures.

**5.31** As discussed in paragraph 5.21, the auditor should consider the size of the entity, the entity's organizational structure, the nature of its operations, the types, frequency, and complexity of its securities transactions, and its controls over those transactions in designing auditing procedures for assertions about securities. Gathering evidential matter about the operating effectiveness of controls placed in operation by the entity or a service organization may enable the auditor to vary the nature, timing, or extent of substantive tests. In addition, as discussed in paragraphs 5.22 and .23, in some circumstances, it may not be practicable or possible for the auditor to reduce audit risk to an acceptable level without identifying controls placed in operation by the entity or a service organization and gathering evidential matter about their operating effectiveness.

**5.32** Illustrations of the tests an auditor may perform to gather evidential matter about the operating effectiveness of controls over securities follow.

- Tests of controls that the entity has implemented to ensure that securities transactions are initiated in accordance with management's established policies may include—
  - Inspecting documentation of the monitoring by supervisory personnel to determine whether approval was obtained to purchase securities that do not conform with the prescribed guidelines and testing some of the purchases the supervisory personnel reviewed.
  - Inspecting documentation of the review by supervisory personnel of documentation of securities transactions to determine whether only authorized dealers were used and testing some of the transactions the supervisory personnel reviewed.
  - Inspecting minutes of meetings of the board of directors, or its finance, asset/liability, investment, or other committee, for evidence of review of reports of securities transactions and for evidence of approval of changes in securities policies.
- Tests of controls that the entity has implemented to ensure that information relating to securities and securities transactions is complete and accurate may include—
  - Inspecting documentation of the review by supervisory personnel of reconciliations of information about securities transactions provided by the segregated functions and testing some of the reconciliations they reviewed.
  - Inspecting documentation of the review by supervisory personnel of the documentation supporting the acquisition and transfer of securities and inspecting some of the documentation they reviewed.
  - Inspecting documentation of the review by supervisory personnel of accounting entries and testing some of the entries they reviewed.
  - Inspecting documentation of the review by supervisory personnel of reconciliations of subsidiary ledgers with general ledger accounts and testing some of the reconciliations they reviewed.
  - Inspecting documentation of the analysis by supervisory personnel of recorded interest and dividend income and testing the resolution of significant differences from their expectations.

- Tests of controls that the entity has implemented to ensure that securities are on hand or held in custody or for safekeeping by others may include—
  - Inspecting documentation of the review by supervisory personnel.
  - Inspecting some of the confirmations they reviewed.
  - Testing their investigation of significant differences.
- Tests of controls that the entity has implemented to determine that the carrying amount of debt and equity securities covered by FASB Statement No. 115 is adjusted to fair value and changes in the fair value of those securities are accounted for in conformity with generally accepted accounting principles may include—
  - Inspecting documentation of the review by supervisory personnel of recorded fair values and testing some of the significant differences investigated during those reviews.
  - Inspecting documentation of the monitoring by supervisory personnel of realized gains and losses and testing some of the gains and losses they reviewed to determine whether appropriate amounts were reclassified from accumulated other comprehensive income.
- Tests of controls that the entity has implemented to ensure that securities are monitored on an ongoing basis to recognize and measure events affecting related financial statement assertions may include—
  - Inquiring of supervisory personnel about whether securities portfolios and related transactions, including impairments, are being monitored on a timely basis.
  - Inspecting documentation of the review of recorded securities and testing some of the securities they reviewed.

## Examples of Control Objectives, Controls, and Tests of Controls for Assertions About Derivatives and Hedging Activities

5.33 Exhibit 5-3 has questions that may be helpful to the auditor in obtaining an understanding of controls to plan the audit of assertions about derivatives and hedging activities. These questions were derived from a document that was released in a press briefing on June 15, 1994, originally published in the *CPA Letter* in July/August 1994, and included in the Appendix to the 1994 report prepared by the AICPA *Derivatives—Current Accounting and Auditing Literature*. The questions may also be helpful to top management and boards of directors in gaining a better understanding of their entity's derivatives and hedging activities.

### Exhibit 5-3

#### Questions That May Be Helpful to the Auditor in Obtaining an Understanding of an Entity's Controls Over Its Derivatives and Hedging Activities

*Has the entity's board of directors, or its finance, asset/liability, investment, or other committee, established a clear and internally consistent risk management policy, including appropriate risk limits?*

- Are the entity's objectives and goals for derivatives clearly stated and communicated?
- To what extent are the entity's operational objectives for derivatives being achieved?



**Exhibit 5-3—continued**  
**Questions That May Be Helpful to the Auditor in Obtaining an Understanding of an Entity's Controls Over Its Derivatives and Hedging Activities**

- Are derivatives used to mitigate risk or do they create additional risk?
- If the risk is being assumed, are trading limits established?
- Is the entity's strategy for derivatives use designed to further its economic, regulatory, industry, and/or operating objectives?

*Are management's strategies and implementation policies consistent with its board's authorization?*

Management's philosophy and operating style create an environment that influences the actions of treasury and other personnel involved in derivatives activities. The assignment of authority and responsibility for derivatives transactions sends an important message.

- Is that message clear?
- Is compliance with these or related policies and procedures evaluated regularly?
- Does the treasury function view itself, or is it evaluated, as a profit center? This might cause members of the treasury department to attempt to enhance earnings through derivatives use.

*Do key controls exist to ensure that only authorized transactions take place and that unauthorized transactions are quickly detected and appropriate action is taken?*

Are controls over derivatives transactions monitored on an ongoing basis and subject to separate evaluations? If so—

- Who is evaluating controls over derivatives transactions?
- Do they possess the appropriate technical expertise?
- Are deficiencies being identified and reported upstream?
- Are duties involving initiation of derivatives transactions segregated from other duties (for example, the accounting and internal audit functions)?

*Are the magnitude, complexity, and risks of the entity's derivatives commensurate with the entity's objectives?*

Internal analyses should include quantitative and qualitative information about the entity's derivatives transactions and should address the risks associated with derivatives, such as—

- Credit risk, which exposes the entity to the risk of loss as a result of the counterparty to a derivative failing to meet its obligation.
- Market risk, which exposes the entity to the risk of loss from adverse changes in market factors that affect the fair value of a derivative, such as interest rates and foreign exchange rates.
- Basis risk, which exposes the entity to the risk of loss from ineffective hedging activities. Basis risk is the difference between the fair value (or cash flows) of the hedged item and the fair value (or cash flows) of the hedging derivative. The entity is subject to the risk that fair values (or cash flows) will change so that the hedge will no longer be effective.
- Legal risk, which exposes the entity to the risk of loss from a legal or regulatory action that invalidates or otherwise precludes performance by one or both parties to the derivative.

**Exhibit 5-3—continued****Questions That May Be Helpful to the Auditor in Obtaining an Understanding of an Entity's Controls Over Its Derivatives and Hedging Activities**

The entity's risk assessment should result in a determination about how to manage identified risks of derivative activities.

- What are the entity's risk exposures, including derivatives?
- Are the entity's derivatives transactions standard for their class (such as simple derivatives like exchange-traded futures contracts) or are they complex (such as non-exchange-traded derivatives based on relationships between diverse markets)?
- Is the complexity of derivatives inconsistent with the risks being managed?
- Has management anticipated how it will manage potential derivatives risks before assuming them?

*Are personnel with authority to engage in and monitor derivatives transactions well qualified and appropriately trained?*

- Who are the key derivatives players within the entity?
- Is the knowledge vested only in one individual or a small group?
- Are other employees being appropriately educated before they become involved with derivatives transactions?
- Does the entity have personnel that have been cross-trained in case of the absence or departure of key personnel involved with derivatives transactions?
- How can the entity ensure the integrity, ethical values, and competence of personnel involved with derivatives transactions?

*Do the right people have the right information to make decisions?*

The information should address both external and internal events, activities, and conditions.

- What information about derivatives transactions is the entity identifying and capturing?
- Is the entity capturing and communicating information about market changes affecting the derivatives?
- Is the entity capturing and communicating changes in the entity's strategy for the mix of assets and liabilities that are the focus of risk management activities involving derivatives?
- How is this information being communicated and is this information being communicated to all affected parties?

The entity's analysis and internal reporting should include how well the entity is achieving its strategy of using derivatives.

- Are the analysis and internal reporting of risks the entity is managing and the effectiveness of its strategies comprehensive, reliable and well designed to facilitate oversight?

The entity's board of directors, or its finance, asset/liability, investment, or other committee, should consider derivatives transactions in the context of how related risks affect the achievement of the entity's objectives (for example, economic, regulatory, industry, and/or operating).

- Do derivatives transactions increase the entity's exposure to risks that might frustrate, rather than further, achievement of the entity's objectives?

**Exhibit 5-3—continued**  
**Questions That May Be Helpful to the Auditor in Obtaining an Understanding of an Entity's Controls Over Its Derivatives and Hedging Activities**

In assessing "if the right people have the right information," there are transactional questions that should be asked and answered.

- Does the entity have good systems for marking transactions to market?
- Have these mark-to-market systems been tested by persons independent of the derivatives function?
- Does the entity know how the value of its derivatives will change under extreme market conditions?
- Is the entity's published financial information being prepared reliably and in conformity with generally accepted accounting principles?

**5.34** In 1996, the Committee of Sponsoring Organizations of the Treadway Commission (COSO) published *Internal Control Issues in Derivatives Usage: An Information Tool for Considering the COSO Internal Control—Integrated Framework in Derivatives Applications*. COSO noted that the document was not intended to be an authoritative pronouncement and therefore was not subjected to due process procedures. Instead, COSO intended that the purpose of the document be to serve as a reference document, illustrating how the COSO Framework can be employed by end users to evaluate the effectiveness of internal controls surrounding use of derivatives. The document is presented in three parts:

- a. The Executive Summary
- b. Statement 1—Formulating Policies Governing Derivatives Used for Risk Management
- c. Statement 2—Illustrative Control Procedures Reference Tool

Although the document precedes FASB Statement No. 133, its guidance may still be useful to entities in developing controls over derivatives transactions and to auditors in assessing control risk for assertions about those transactions.

**5.35** Examples of control objectives for the financial reporting of derivatives and hedging activities include—

- a. Derivatives transactions are initiated in accordance with management's established policies.
- b. Information relating to derivatives and derivatives transactions is complete and accurate.
- c. Derivatives accounted for as hedges meet the designation, documentation, and assessment requirements of generally accepted accounting principles.
- d. The carrying amount of derivatives is adjusted to fair value, and changes in the fair value of derivatives are accounted for in conformity with generally accepted accounting principles.
- e. Derivatives are monitored on an ongoing basis to recognize and measure events affecting related financial statement assertions.

Exhibit 5-4 gives examples of controls that may be designed to ensure that these examples of control objectives are met.

**Exhibit 5-4**  
**Examples of Control Objectives and Related Controls**  
**for Derivatives and Hedging Activities**

Control Objective	Related Controls
<p>Derivatives transactions are initiated in accordance with management's established policies.</p> <p>Information relating to derivatives and derivatives transactions is complete and accurate.</p>	<ul style="list-style-type: none"> <li>● Guidelines have been prescribed for acceptable risk levels for the entity's derivatives, such as credit risk and prepayment and extension risk, and derivatives personnel must analyze the sensitivity of derivatives before they are entered into. Computer controls prohibit the entering into of transactions beyond established limits.</li> <li>● Lists of authorized derivatives brokers and counterparties are maintained and updated periodically, and supervisory personnel periodically review documentation of derivatives transactions to determine whether only authorized brokers and counterparties were used.</li> <li>● The board of directors, generally through its finance, asset/liability, investment, or other committee, reviews reports of derivatives transactions to determine that the entity's guidelines for derivatives transactions are being complied with.</li> <li>● The board of directors, generally through its finance, asset/liability, investment, or other committee, must approve changes in derivatives policies, and approval must be documented.</li> <li>● Duties among those who initiate derivatives transactions, have access to the underlying instruments, and post or reconcile related accounting records are appropriately segregated, and supervisory personnel regularly review reconciliations of information provided by individuals performing these functions.</li> <li>● Deal initiation records are sufficient to identify the nature and purpose of individual transactions.</li> <li>● Supervisory personnel obtain counterparty confirmations, match them against the entity's records, and investigate significant differences.</li> <li>● Supervisory personnel monitor agreements to determine that embedded derivatives have been identified and properly accounted for.</li> <li>● Supervisory personnel periodically review accounting entries supporting derivatives transactions.</li> <li>● Supervisory personnel periodically review reconciliations of subsidiary ledgers with general ledger accounts.</li> </ul>

**Exhibit 5-4—continued**  
**Examples of Control Objectives and Related Controls**  
**for Derivatives and Hedging Activities**

Control Objective	Related Controls
<p>Derivatives accounted for as hedges meet the designation, documentation, and assessment requirements of generally accepted accounting principles.</p> <p>The carrying amount of derivatives is adjusted to fair value, and changes in the fair value of derivatives are accounted for in conformity with generally accepted accounting principles.</p> <p>Derivatives are monitored on an ongoing basis to recognize and measure events affecting related financial statement assertions.</p>	<ul style="list-style-type: none"> <li>● The board of directors, generally through its finance, asset/liability, investment, or other committee, monitors activities that present risks that may be hedged through derivatives to determine whether derivatives were entered into and recorded.</li> <li>● Documentation, designation, and review are dated.</li> <li>● Supervisory personnel review documentation and designation at the time a derivative is entered into to determine that it conforms with generally accepted accounting principles.</li> <li>● Supervisory personnel review the periodic assessments to determine that they conform with generally accepted accounting principles.</li> <li>● The board of directors, generally through its finance, asset/liability, investment, or other committee, monitors the documentation, designation, and assessment.</li> <li>● Supervisory personnel periodically review the recorded fair values of derivatives and investigate significant differences from the amounts expected.</li> <li>● Supervisory personnel periodically review the accounting for unrealized appreciation and depreciation in the fair value of derivatives to determine that it is in conformity with generally accepted accounting principles.</li> <li>● Supervisory personnel regularly review recorded derivatives and amounts included in accumulated other comprehensive income to determine that events affecting their presentation and disclosure are considered, such as hedged transactions that are no longer probable.</li> </ul>

\* The entity may have procedures to analyze alternative derivatives and extensions according to the entity's intent. For example, analyses prepared for derivatives the entity is considering entering into may include sensitivity analyses that show the effect on the carrying amount and net interest income of various interest-rate and prepayment scenarios. Such analyses may also evaluate the effect of derivatives on the entity's overall exposure to interest-rate risk. An analysis might also be performed to evaluate the reasonableness of interest-rate and prepayment assumptions provided by the counterparty or selling broker. Relevant controls may also include a review by management of contractual documents to ascertain the rights and obligations of all parties to the transaction, as well as the recourse available to each party.

**5.36** Many of the controls for derivatives may be performed directly by senior management. While management's close attention to derivatives transactions can be an effective control, the auditor should be alert to potential abuses and overrides of policies and procedures.

**5.37** As discussed in paragraph 5.21, the auditor should consider the size of the entity, the entity's organizational structure, the nature of its operations, the types, frequency, and complexity of its derivatives transactions, and its controls over those transactions in designing auditing procedures for assertions about derivatives. Gathering evidential matter about the operating effectiveness of controls placed in operation by the entity or a service organization may enable the auditor to vary the nature, timing, or extent of substantive tests. In addition, as discussed in paragraphs 5.22 and 5.23, in some circumstances, it may not be practicable or possible for the auditor to reduce audit risk to an acceptable level without identifying controls placed in operation by the entity or a service organization and gathering evidential matter about their operating effectiveness.

**5.38** Illustrations of the tests an auditor may perform to gather evidential matter about the operating effectiveness of controls over derivatives and hedging activities follow.

- Tests of controls that the entity has implemented to ensure that derivatives transactions are initiated in accordance with management's established policies may include—
  - Testing the computer controls that prohibit the entering into of transactions beyond established limits.
  - Inspecting documentation of the review by supervisory personnel of documentation of derivatives transactions to determine whether only authorized brokers and counterparties were used and testing some of the transactions the supervisory personnel reviewed.
  - Inspecting minutes of meetings of the board of directors, or its finance, asset/liability, investment, or other committee, for evidence of review of reports of derivatives transactions and for evidence of approval of changes in derivatives policies.
- Tests of controls that the entity has implemented to ensure that information relating to derivatives and derivatives transactions is complete and accurate may include—
  - Inspecting documentation of the review by supervisory personnel of reconciliations of information about derivatives transactions provided by the segregated functions and testing some of the reconciliations they reviewed.
  - Inspecting documentation of the confirmation procedures performed by supervisory personnel and testing some of their reconciliations of recorded derivatives to counterparty confirmations noting the timeliness of the confirmations.
  - Inspecting documentation of the monitoring by supervisory personnel of agreements for embedded derivatives and testing some of the conclusions they reached.
  - Inspecting documentation of the review by supervisory personnel of accounting entries and testing some of the entries they reviewed.
  - Inspecting documentation of the review by supervisory personnel of reconciliations of subsidiary ledgers with general ledger accounts and testing some of the reconciliations they reviewed.
  - Inspecting minutes of meetings of the board of directors, or its finance, asset/liability, investment, or other committee, for evidence of monitoring activities that present risks that may be hedged through derivatives and testing some of the conclusions they reached.

## Auditing Derivative Instruments

- Tests of controls that the entity has implemented to ensure that derivatives accounted for as hedges meet the designation, documentation, and assessment requirements of generally accepted accounting principles may include—
  - Inspecting documentation of the review by supervisory personnel of the documentation, designation, and initial and continuing assessments and for some of the hedges reviewed examining the documentation and testing the assessments.
  - Inspecting minutes of meetings of the board of directors, or its finance, asset/liability, investment, or other committee, for evidence of review of hedging activities.
- Tests of controls that the entity has implemented to ensure that the carrying amount of derivatives is adjusted to fair value and changes in the fair value of derivatives are accounted for in conformity with generally accepted accounting principles may include—
  - Inspecting documentation of the review by supervisory personnel of recorded fair values and testing some of the significant differences investigated during those reviews.
  - Inspecting documentation of the review by supervisory personnel of the accounting for unrealized appreciation and depreciation in the value of derivatives and testing some of the reclassifications they reviewed.
- Tests of controls that the entity has implemented to ensure that derivatives are monitored on an ongoing basis to recognize and measure events affecting related financial statement assertions may include—
  - Inquiring of supervisory personnel about whether derivatives transactions are being monitored on a timely basis.
  - Inspecting documentation of the review by supervisory personnel of recorded derivatives and amounts included in accumulated other comprehensive income and testing some of the derivatives and amounts in accumulated other comprehensive income they reviewed.

### Summary: Audit Implications

- The auditor should gain an understanding of internal control sufficient to plan the audit. If a service organization provides services that are part of the entity's information system, the auditor should consider whether information about the service organization's controls will be needed to plan the audit.
- To assess control risk below the maximum, the auditor should perform procedures to gather evidential matter about the operating effectiveness of controls over derivatives and securities transactions. Those controls may include controls implemented by one or more service organizations that provide services that are part of the entity's information system, as well as those implemented by the entity.

## Chapter 6

# Designing Substantive Procedures Based on Risk Assessments

**6.01** The auditor assesses inherent and control risk for assertions about derivatives and securities to enable him or her to determine the nature, timing, and extent of the substantive procedures to be performed. A single procedure may address more than one assertion, or the auditor may need to perform a number of procedures to address a single assertion. The number and types of procedures to be performed depend on the auditor's assessment of inherent and control risk as well as the auditor's judgment about the effectiveness of the procedures.

## Financial Statement Assertions About Derivatives and Securities

**6.02** Substantive procedures for derivatives and securities should address the five broad categories of assertions presented in SAS No. 31, *Evidential Matter* (AICPA, *Professional Standards*, vol. 1, AU sec. 326.03). Those categories are:

- a. Existence or occurrence
- b. Completeness
- c. Rights and obligations
- d. Valuation or allocation
- e. Presentation and disclosure

This chapter describes the categories of assertions and presents examples of procedures the auditor might perform to address these assertions.

## Assertions About Existence or Occurrence

**6.03** Existence assertions address whether the derivatives and securities reported in the financial statements exist at the balance sheet date. Occurrence assertions address whether derivatives and securities transactions reported in the financial statements as a part of earnings, other comprehensive income, or cash flows occurred. Examples of substantive procedures that address existence or occurrence assertions about derivatives and securities are—

- Confirmation with the issuer of the security.
- Confirmation with the holder of the security, including securities in electronic form, or with the counterparty to the derivative.<sup>1</sup>

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<sup>1</sup> SAS No. 67, *The Confirmation Process* (AICPA, *Professional Standards*, vol. 1, AU sec. 330), provides guidance to auditors in using confirmations as substantive tests of financial statement assertions. Confirmations may be used as a substantive test of various financial statement assertions about derivatives and securities in addition to assertions about existence and occurrence. For example, a confirmation may be designed to—

- Obtain information about valuation assertions or assumptions underlying valuations.
- Determine whether there are any side agreements that affect assertions about the entity's rights and obligations associated with a transaction, such as an agreement to repurchase securities sold or an agreement to pledge securities as collateral for a loan.
- Determine whether the holder of the entity's securities agrees to deliver the securities reported or their value when required by the entity.



- Confirmation of settled and unsettled transactions with the broker-dealer or counterparty.
- Physical inspection of the security or derivative contract.
- Reading executed partnership or similar agreements.
- Inspecting underlying agreements and other forms of supporting documentation (in paper or electronic form) for—
  - Amounts reported.
  - Evidence that would preclude the sales treatment of a transfer.
  - Unrecorded repurchase agreements.
- Inspecting supporting documentation for subsequent realization or settlement after the end of the reporting period.
- Performing analytical procedures.<sup>2</sup> For example, the absence of a material difference from an expectation that interest income will be a fixed percentage of a debt security based on the effective interest rate when the security was purchased provides evidence about the existence of the security.

## Assertions About Completeness

**6.04** Assertions about completeness address whether all of the entity's derivatives and securities are reported in the financial statements and whether all derivatives and securities transactions are reported in the financial statements as a part of earnings, other comprehensive income, or cash flows. Because derivatives may not involve an initial exchange of tangible consideration, it may be difficult to limit audit risk for completeness assertions to an acceptable level by performing only substantive procedures and not performing tests of controls. The following are examples of substantive procedures that address completeness assertions about derivatives and securities:

- Requesting the counterparty to a derivative or the holder of a security to provide information about it, such as whether there are any side agreements or agreements to repurchase securities that have been sold
- Requesting counterparties or holders who were frequently used in the past, but with whom the accounting records indicate there are presently no derivatives or securities, to state whether they are counterparties to derivatives with the entity or holders of its securities<sup>3</sup>
- Inspecting financial instruments and other agreements to identify embedded derivatives
- Inspecting documentation in paper or electronic form for activity subsequent to the end of the reporting period
- Performing analytical procedures. For example, a difference from the expectation that interest expense will be a fixed percentage of a note based on the interest provisions of the underlying agreement may indicate the existence of an interest rate swap agreement
- Comparing previous and current account detail to identify assets that have been removed from the accounts and further testing of those items to determine whether the criteria for sales treatment have been met

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<sup>2</sup> SAS No. 56, *Analytical Procedures* (AICPA, *Professional Standards*, vol. 1, AU sec. 329), provides guidance to auditors in using analytical procedures as substantive tests.

<sup>3</sup> SAS No. 67 (AU sec. 330.17) discusses the blank form of positive confirmation in which the auditor does not state the amount or other information but instead asks the respondent to provide information.

- Reading other information, such as minutes of meetings of the board of directors or finance, asset/liability, investment, or other committees

**6.05** As noted in paragraph 6.04, one of the characteristics of derivatives is that they may involve only a commitment to perform under a contract and not an initial exchange of tangible consideration. Therefore, auditors designing tests of the completeness assertion should not focus exclusively on evidence relating to cash receipts and disbursements. When testing for completeness, auditors should consider making inquiries, inspecting agreements, and reading other information, such as minutes of meetings of the board of directors or finance, asset/liability, investment, or other committees. Auditors also should consider making inquiries about aspects of operations for which risks may have been hedged through the use of derivatives. For example, if the entity conducts business with foreign entities, the auditor should inquire about any arrangements the entity has made for purchasing foreign currency. Or, if the entity is in an industry in which commodity contracts are common, the auditor should inquire about any commodity contracts with fixed prices that run for unusual durations or involve unusually large quantities. The auditor also should consider inquiring as to whether the entity has converted interest-bearing debt from fixed to variable, or vice versa, using derivatives.

**6.06** If one or more service organizations provide services that are part of an entity's information system for derivatives, the auditor may be unable to sufficiently limit audit risk for assertions about the completeness of derivatives without obtaining evidential matter about the operating effectiveness of controls at those service organizations. Because derivatives transactions may not require an initial exchange of tangible consideration, they may not be recorded; therefore, testing reconciliations of information provided by two or more service organizations, as discussed in paragraph 6.59, may not sufficiently limit audit risk for assertions about the completeness of derivatives.

## Assertions About Rights and Obligations

**6.07** Assertions about rights and obligations address whether the entity has the rights and obligations associated with derivatives and securities, including the right to pledge the derivatives and securities reported in the financial statements. The following are examples of substantive procedures that address assertions about rights and obligations related to derivatives and securities:

- Confirming significant terms with the counterparty to a derivative or the holder of a security, including the absence of any side agreements
- Inspecting underlying agreements and other forms of supporting documentation, in paper or electronic form
- Considering whether the findings of other auditing procedures, such as reviewing minutes of meetings of the board of directors and reading contracts and other agreements, provide evidence about rights and obligations, such as pledging of securities as collateral or selling securities with a commitment to repurchase them

## Assertions About Valuation

**6.08** Assertions about the valuation of derivatives and securities address whether the amounts reported in the financial statements were determined in conformity with generally accepted accounting principles. Tests of valuation

assertions should be based on the valuation method used. Generally accepted accounting principles may require that a derivative or security be valued based on cost, the investee's financial results, or fair value. Generally accepted accounting principles also may require disclosures about the value of a derivative or security and require that impairment losses be recognized in earnings prior to their realization. Also, generally accepted accounting principles for securities may vary depending on the type of security, the nature of the transaction, management's objectives related to the security, and the type of entity. Procedures for evaluating management's consideration of the need to recognize impairment losses are discussed in paragraphs 6.39 through 6.42.

## Valuation Based on Cost

**6.09** Procedures to obtain evidence about the cost of securities may include inspecting documentation that identifies the purchase price, confirming with the issuer or holder, and testing discount or premium amortization, either by recomputation or analytical procedures. The auditor should evaluate management's conclusion about the need to recognize an impairment loss for a decline in the security's fair value below its cost that is other than temporary. Auditing considerations concerning impairment losses are discussed in paragraphs 6.39 through 6.42.

## Valuation Based on an Investee's Financial Results

**6.10** For valuations based on an investee's financial results, including but not limited to the equity method of accounting, the auditor should obtain sufficient evidence in support of the investee's financial results. The auditor should read available financial statements of the investee and the accompanying audit report, if any. Financial statements of the investee that have been audited by an auditor whose report is satisfactory, for this purpose,<sup>4</sup> to the investor's auditor may constitute sufficient evidential matter. If in the auditor's judgment additional evidential matter is needed, the auditor should perform procedures to gather such evidence. For example, the auditor may conclude that additional evidential matter is needed because of significant differences in fiscal year ends, significant differences in accounting principles, changes in ownership, changes in conditions affecting the use of the equity method, or the materiality of the investment to the investor's financial position or results of operations. Examples of procedures the auditor may perform are reviewing information in the investor's files that relates to the investee such as investee minutes and budgets and cash flows information about the investee and making inquiries of investor management about the investee's financial results.

**6.11** If the investee's financial statements are not audited, or if the investee auditor's report is not satisfactory to the investor's auditor for this purpose, the investor's auditor should apply, or should request that the investor arrange with the investee to have another auditor apply, appropriate auditing procedures to such financial statements, considering the materiality of the investment in relation to the financial statements of the investor.

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<sup>4</sup> In determining whether the report of another auditor is satisfactory for this purpose, the auditor may consider performing procedures, such as making inquiries as to the professional reputation and standing of the other auditor, visiting the other auditor and discussing the audit procedures followed and the results thereof, and reviewing the audit program and/or working papers of the other auditor.

**6.12** If the carrying amount of the security in the investor's financial statements reflects factors that are not recognized in the investee's financial statements (for example goodwill), or fair values of assets that are materially different from the investee's carrying amounts (for example, appreciated land), the auditor should obtain sufficient evidence in support of these amounts. Paragraphs 6.16 through 6.38 provide guidance on audit evidence that may be used to corroborate assertions about the fair value of derivatives and securities, and paragraphs 6.39 through 6.42 provide guidance on procedures for evaluating management's consideration of the need to recognize impairment losses.

**6.13** There may be a time lag in reporting between the date of the financial statements of the investor and that of the investee. The time lag in reporting should be consistent from period to period. If a time lag between the date of the entity's financial statements and those of the investee has a material effect on the entity's financial statements, the auditor should determine whether the entity's management has properly considered the lack of comparability. The effect may be material, for example, because the time lag is not consistent with the prior period in comparative statements or because a significant transaction occurred during the time lag. If a change in time lag occurs that has a material effect on the investor's financial statements, an explanatory paragraph should be added to the auditor's report because of the change in reporting period.<sup>5</sup>

**6.14** The auditor should evaluate management's conclusion about the need to recognize an impairment loss for a decline in the security's fair value below its carrying amount that is other than temporary. In addition, with respect to subsequent events and transactions of the investee occurring after the date of the investee's financial statements but before the date of the investor auditor's report, the auditor should read available interim financial statements of the investee and make appropriate inquiries of the investor to identify subsequent events and transactions that are material to the investor's financial statements. Such events or transactions of the type contemplated in AU section 560, *Subsequent Events*, (AICPA, *Professional Standards*, vol. 1, AU sec. 560.05 and .06), should be disclosed in the notes to the investor's financial statements and (where applicable) labeled as unaudited information. For the purpose of recording the investor's share of the investee's results of operations, recognition should be given to events or transactions of the type contemplated in AU section 560.03.

**6.15** The auditor should obtain evidence relating to material transactions between the entity and the investee to evaluate (a) the propriety of the elimination of unrealized profits and losses on transactions between the entity and the investee that is required when the equity method of accounting is used to account for an investment under generally accepted accounting principles and (b) the adequacy of disclosures about material related party transactions.

## Valuation Based on Fair Value

**6.16** The auditor should obtain evidence supporting management's assertions about the fair value of derivatives and securities measured or disclosed at fair value. The method for determining fair value may be specified by generally accepted accounting principles and may vary depending on the industry in which the entity operates or the nature of the entity. Such differences may affect the auditor's consideration of price quotations from inactive

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<sup>5</sup> See SAS No. 58, *Reports on Audited Financial Statements* (AICPA, *Professional Standards*, vol. 1, AU sec. 508.16 through .18).

markets and significant liquidity discounts, control premiums, and commissions and other costs that would be incurred to dispose of the derivative or security. The auditor should determine whether generally accepted accounting principles specify the method to be used to determine the fair value of the entity's derivatives and securities and evaluate whether the determination of fair value is consistent with the specified valuation method. Paragraphs 3.06 and 3.07 summarize the basic requirements of generally accepted accounting for determining fair value. Paragraphs 6.16 through 6.38 provide guidance on audit evidence that may be used to support assertions about fair value. That guidance should be considered in the context of the relevant accounting requirements.

**6.17** If the determination of fair value requires the use of estimates, the auditor should consider the guidance in SAS No. 57. In addition, SAS No. 47, *Audit Risk and Materiality in Conducting an Audit* (AICPA, *Professional Standards*, vol. 1, AU sec. 312.36), provides guidance on the auditor's considerations when there is a difference between an estimated amount best supported by audit evidence and the estimated amount included in the financial statements.

**6.18** Quoted market prices for derivatives and securities listed on national exchanges or over-the-counter markets are available from sources such as financial publications, the exchanges, the National Association of Securities Dealers Automated Quotations System (NASDAQ), or pricing services that base their quotes on those sources. Quoted market prices obtained from these sources generally are considered to provide sufficient evidence of the fair value of the derivatives and securities.

**6.19** For certain other derivatives and securities, quoted market prices may be obtained from broker-dealers who are market makers in them or through the National Quotation Bureau. However, using such price quotes to test valuation assertions may require special knowledge to understand the circumstances in which the quote was developed. For example, quotations published by the National Quotation Bureau such as "pink sheets" may not be based on recent trades and may only be an indication of interest and not an actual price for which a counterparty will purchase or sell the underlying derivative or security.

**6.20** If quoted market prices are not available for a derivative or security, estimates of fair value frequently can be obtained from broker-dealers or other third-party sources based on proprietary valuation models or from the entity based on internally or externally developed valuation models. The auditor should understand the method used by the broker-dealer or other third-party source in developing the estimate, for example, whether a pricing model or a cash flow projection was used. Information about the Black-Scholes option-pricing model is presented in paragraph 6.29 and the zero-coupon method for estimating the fair value of interest rate swaps is presented in paragraph 6.30.

**6.21** The auditor may also determine that it is necessary to obtain estimates from more than one pricing source. For example, this may be appropriate if the pricing source has a relationship with the entity that might impair its objectivity, such as an affiliate or a counterparty involved in selling or structuring the product, or if the valuation is based on assumptions that are highly subjective or particularly sensitive to changes in the underlying circumstances.

**6.22** For fair-value estimates obtained from broker-dealers and other third-party sources, the auditor should consider the applicability of the guidance in SAS No. 73, *Using the Work of a Specialist* (AICPA, *Professional Standards*, vol. 1, AU sec. 336), or SAS No. 70. The auditor's decision about

whether such guidance is applicable and which guidance is applicable will depend on the circumstances. The guidance in SAS No. 73 may be applicable if the third-party source derives the fair value of the derivative or security by using modeling or similar techniques. If the entity uses a pricing service to obtain prices of securities and derivatives, the guidance in SAS No. 70 may be appropriate.

**6.23** The fair value of some derivatives and securities may be estimated by the entity using a valuation model. Examples of valuation models include the present value of expected future cash flows, option-pricing models, matrix pricing, option-adjusted spread models, and fundamental analysis. When valuation models are used, the auditor should obtain evidence supporting management's assertions about fair value by performing procedures such as—

- Assessing the reasonableness and appropriateness of the model. The auditor should determine whether the valuation model is appropriate for the derivative or security to which it is applied and whether the assumptions used are reasonable and appropriately supported. The evaluation of the appropriateness of valuation models and each of the assumptions used in the models may require considerable judgment and knowledge of valuation techniques, market factors that affect value, and actual and expected market conditions, particularly in relation to similar derivatives and securities that are traded. Accordingly, the auditor may consider it necessary to involve a specialist in assessing the model.
- Calculating the value, for example using a model developed by the auditor or by a specialist engaged by the auditor, to develop an independent expectation to corroborate the reasonableness of the value recorded by the entity.
- Comparing the fair value with subsequent settlement or recent transactions.

A valuation model should not be used to determine fair value when generally accepted accounting principles require that the fair value of a security be determined using quoted market prices.

**6.24** When the derivative or security is valued by the entity using a valuation model, the auditor does not function as an appraiser and is not expected to substitute his or her judgment for that of the entity's management.<sup>6</sup>

**6.25** In evaluating the reasonableness of the fair value of derivatives and securities calculated with a model, auditors should normally concentrate on key factors and assumptions that are—

- Significant to the estimate.
- Sensitive to variations.
- Deviations from historical patterns.
- Subjective and susceptible to misstatement and bias.

**6.26** It may be useful to perform sensitivity analysis on key factors to determine how they affect the estimate. For example, when an estimate of the

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<sup>6</sup> Independence Standards Board (ISB) Interpretation 99-1, *FAS 133 Assistance*, provides guidance to auditors of public companies on services an auditor may provide management to assist with the application of FASB Statement No. 133 that would and would not impair the auditor's independence. Ethics Interpretation 101-3, "Performance of Other Services," of ET section 101, *Independence* (AICPA, *Professional Standards*, vol. 2, ET sec. 101.05), provides general guidance to auditors of all entities on the effect of nonattest services on the auditor's independence.

fair value of a non-exchange-traded option includes an assumption about the volatility of the underlying security, the auditor may perform an analysis to determine how the fair value of the option will differ if that volatility is changed. The results of this analysis will help the auditor determine which factors and assumptions have the most significant impact on the estimate.

**6.27** SAS No. 57 (AU sec. 342.11) provides guidance on how an auditor assesses the reasonableness of an estimate when testing the process used by management to develop that estimate. Exhibit 6-1 presents the audit procedures included in SAS No. 57 (AU sec. 342.11) that are applicable when management has developed the estimate through the use of a model.

**Exhibit 6-1**  
**Assessing the Valuation Model**

In some situations, the entity may use a model\* to estimate the fair value of a derivative or security. If this is the case, the auditor may assess the reasonableness and appropriateness of the model by testing the procedures used by management. SAS No. 57 (AU sec. 342.11) provides the following procedures.

- Identify whether there are controls over the preparation of the estimate of fair value and supporting data that may be useful in the evaluation of the results.
- Identify the sources of data and factors that management used in forming the assumptions, and consider whether such data and factors are relevant, reliable, and sufficient for the purpose based on information gathered in other audit tests.
- Consider whether there are additional key factors or alternative assumptions about the factors.
- Evaluate whether the assumptions are consistent with each other, the supporting data, relevant historical data, and industry data.
- Analyze historical data used in developing the assumptions to assess whether the data is comparable and consistent with data of the period under audit, and consider whether such data are sufficiently reliable for the purpose.
- Consider whether changes in the business or industry may cause other factors to become significant to the assumptions.
- Review available documentation of the assumptions used in developing the accounting estimates and inquire about any other plans, goals, and objectives of the entity, as well as consider their relationship to the assumptions.
- Consider using the work of a specialist.

\* The auditor should follow the guidance in SAS No. 73 when the model has been developed by a third party.

**6.28** Paragraphs 6.29 and 6.30 provide an overview of how to evaluate fair values calculated by an entity using the Black Scholes option-pricing model and the zero-coupon method. Although these models ordinarily may involve complex calculations, the following illustrations focus only on the elements of the calculations that are typically most relevant to auditors. The auditor should follow the guidance in SAS No. 73 when evaluating fair values derived by a specialist.

**6.29** The following table discusses evaluating fair values derived using the Black-Scholes option-pricing model.

<p>What is it?</p>	<p>The Black-Scholes option-pricing model is a mathematical model for estimating the price of options. To estimate fair value, the model uses five variables:</p> <ul style="list-style-type: none"> <li>● Time to expiration of the option</li> <li>● Exercise or strike price of the option</li> <li>● Risk-free interest rate</li> <li>● Price of the underlying stock</li> <li>● Volatility of the price of the underlying stock</li> </ul>
<p>Who uses it?</p>	<p>The Black-Scholes model is not the only model for estimating the price of options (some others are the Monte-Carlo simulation and binomial trees); however, Black-Scholes is the best known and most widely used. Computer versions of this model are widely available, and virtually any broker who trades options has access to them.</p>
<p>What are the key assumptions?</p>	<p>Strictly speaking, the Black-Scholes model applies only to European style options (in which the buyer of the option can exercise the option only on the expiration date) that pay no dividends. Adjustments should be made to the model to address other situations.</p> <p>Of the five variables used in the model, the first three (time to expiration, strike price, and risk-free interest rate) are easy to corroborate. The fourth variable, the price of the underlying stock, also may be easy to verify if the stock is publicly traded. If the stock is not publicly traded, then its price must be estimated.</p> <p>Typically, the fifth factor, volatility of the underlying stock, is the most subjective and difficult to estimate of the five variables.</p>
<p>More about volatility</p>	<p>Price volatility can be viewed in the context of the bell-shaped curve. In a bell-shaped curve, the mean and median of a population are at the apex of the curve. The standard deviation describes the shape of the curve. Approximately 68 percent of the values in a normal distribution are within <math>\pm 1</math> standard deviation of the mean; 95 percent of the values are within <math>\pm 2</math> standard deviations, and 99.7 percent of the values are included within 3 standard deviations. The standard deviation describes two factors: how dispersed the data are, and the probability that any specified outcome will fall within the standard deviation selected. The greater the standard deviation, the “flatter” the bell-shaped curve, and the more dispersed the data.</p> <p>Volatility is nothing more than the standard deviation of the price of a particular stock. Usually, it is expressed as a percentage of the stock value. For example, assume that the stock of XYZ is trading at \$40 and its volatility is 20 percent. Over the course of a year its trading range would be projected to be within 20 percent of its current price approximately 68 percent of the time. That is, approximately 68 percent of the time, the stock would trade between \$32 and \$48. Going out to two standard deviations, 95 percent of the time, the stock would trade between \$24 and \$56.</p> <p>Annual volatility can be adjusted to a daily rate. The Black-Scholes model does this by dividing the annual volatility by the square root of the number of trading periods. In any year, there are about 256 trading days (this excludes weekends and holidays), and the square root of 256 is 16. To convert an annual volatility rate to a daily rate, divide it by 16. Thus, if the annual volatility was 20 percent, the daily volatility would equal 20 percent <math>\div</math> 16, or 1.25 percent. In the example of the XYZ Company stock trading at \$40 per share, standard deviation on the first day would be \$0.50 (<math>\\$40 \times 1.25</math> percent). At the end of the first day of trading, there is approximately a 68 percent chance that the value of the stock will be between \$39.50 and \$40.50 per share.</p>

(continued)



## Auditing Derivative Instruments

How should the auditor audit a Black-Scholes derived value?	Understand how the five variables affect the estimate of the value of the stock option. The following table summarizes the effects.				
		Call		Put	
	<b>Variable</b>	<b>If the variable...</b>	<b>the option price...</b>	<b>If the variable...</b>	<b>the option price...</b>
	Time to expiration	Increases	Increases	Increases	Increases
	Exercise price	Increases	Decreases	Increases	Increases
	Risk-free interest rate	Increases	Increases	Increases	Decreases
	Stock price	Increases	Increases	Increases	Decreases
Volatility	Increases	Increases	Increases	Increases	
<p>Understand what, if any, adjustments to the Black-Scholes model were made. Identify the key assumptions underlying those adjustments.</p> <p>Test the assumptions used in the model for which objective evidence exists.</p> <p>If the stock is not publicly traded, the price of the stock should be estimated. Test the process and method used to make this estimate. Determine whether the estimate is adequately supported. If possible, compare the estimated stock price with prices of comparable companies.</p> <p>Assess the assumed volatility for reasonableness. If the stock is publicly traded, volatility should correlate to the historical price movement of the stock: approximately 68 percent of the values of the stock should fall within one standard deviation of the median. The auditor should consider recalculating the volatility assumptions by referring to historical stock price movements. If the stock is not traded publicly, compare the assumed volatility with other entities in the same industry. FASB Statement No. 123 requires companies to disclose the volatility used to value employee stock options—these disclosures could be a source of information.</p> <p>Determine how sensitive the estimate of fair value is to changes in volatility. Ask the entity to run the model several times using different volatility rates while all other variables are held constant. This will indicate how sensitive the estimate is to assumptions about volatility. Evaluate the results of this test in light of materiality. For example, if large changes in the volatility rate do not produce a material impact on the financial statements, the auditor may be able to reduce audit risk to an acceptable level with a minimum of other test work.</p> <p>As an alternative to these procedures, the auditor may recalculate the option price using a different model and assumptions the auditor deems appropriate.</p>					

**6.30** The following table discusses evaluating the fair value of interest rate swaps derived using the zero-coupon method.

<p>What is it?</p>	<p>The zero-coupon method is a present value model in which the net settlements from the swap are estimated and discounted back to their current value. Like any present value model, key variables include—</p> <ul style="list-style-type: none"> <li>● Timing of the cash flows.</li> <li>● Discount rate.</li> <li>● Estimated net settlement cash flows.</li> </ul>
<p>Who uses it?</p>	<p>The zero-coupon method for estimating the fair value of swaps is not the only acceptable method. However, most other methods use a present value-based model, and the assumptions would be similar.</p>
<p>What are the key assumptions?</p>	<p>The timing of the cash flows usually is a contractual matter that should be easy to verify. For the zero-coupon method, the discount rates used are the spot interest rates implied by the current yield curve for hypothetical zero-coupon bonds due on the date of each future net settlement on the swap. These rates, too, should be easy to corroborate. Difficulties arise in estimating the amount of future cash flows</p>
<p>More about estimating future cash flows.</p>	<p>Suppose that ABC entered into an agreement to swap payments on a fixed-rate liability for a variable rate. If interest rates decline, ABC will receive a net positive cash flow from the swap because the amount received on the fixed rate will be greater than the amount due on the variable rate. The opposite is true if rates increase. Thus, the future net settlements are a function of the future price of the underlying, in this case interest rates. The zero-coupon method simplifies the estimate of future cash flows by calculating the net settlement that would be required if future interest rates are equal to the rates implied by the current yield curve. Any changes in the yield curve are accounted for prospectively.</p>
<p>How should the auditor audit the fair value of a swap derived using the zero-coupon method?</p>	<p>The audit approach should be the same as for any other present value-based estimate. The auditor should focus on the discount rate and the estimate of future cash flows.</p> <p>Of the two, the future cash flows usually have the bigger impact on the final estimate of fair value.</p> <p>Understand the assumptions underlying the discount rate and, to the extent possible, verify the objective elements of this rate.</p> <p>Understand the assumptions underlying the estimate of future cash flows. Examine management’s documentation to see whether these assumptions are adequately supported.</p>

**6.31** Evaluating evidential matter for assertions about derivatives and securities may require the auditor to use considerable judgment. That may be because the assertions, especially those about valuation, are based on highly subjective assumptions or because they are particularly sensitive to changes in the underlying circumstances. Valuation assertions may be based on assumptions about the occurrence of future events for which expectations are difficult to develop or on assumptions about conditions expected to exist over a long period, for example, default rates or prepayment rates. Accordingly, competent persons could reach different conclusions about estimates of fair values or estimates of ranges of fair values.

**6.32** Considerable judgment also may be required to evaluate evidential matter for assertions based on complex features of a derivative or security, and complex accounting principles. For example, in evaluating evidential matter about the valuation of a structured note, the auditor may need to consider several features of the note that react differently to changes in economic conditions. In addition, one or more other derivatives may be designated to hedge changes in cash flows that arise from the note. Evaluating evidential matter to support the fair value of the note, the determination of whether the hedge is highly effective, and the allocation of changes in fair value to earnings and other comprehensive income may require considerable judgment.

**6.33** In situations requiring considerable judgment, the auditor should consider the guidance in—

- SAS No. 57 on obtaining and evaluating sufficient competent evidential matter to support significant accounting estimates.
- SAS No. 73 on the use of the work of a specialist in performing substantive procedures.

**6.34** When derivatives and securities are not traded regularly or are traded only in principal-to-principal markets, it may be possible for management to use a substitute for the fair value of the instrument. For example, for some securities, cost may approximate fair value because of the relatively short period of time the security has been held. Some derivatives may be custom-tailored to meet the specific needs of an entity. In these situations, fair value might be based on the quoted market price of a similar derivative adjusted for the effects of the tailoring. Alternatively, the estimate might be based on the estimated current replacement cost of that instrument.

**6.35** Negotiable securities, real estate, chattels, or other property is often assigned as collateral for debt securities. If the collateral is an important factor in evaluating fair value and collectibility of the security, the auditor should obtain evidence regarding the existence, fair value, and transferability of such collateral as well as the investor's rights to the collateral.

**6.36** Generally accepted accounting principles may specify how to account for unrealized appreciation and depreciation of the fair value of a derivative or security. For example, generally accepted accounting principles require an entity to report a change in the unrealized appreciation or depreciation in the fair value of—

- A derivative that is designated as a fair value hedge in earnings, with disclosure of the ineffective portion of the hedge.
- A derivative that is designated as a cash flow hedge in two components, with the ineffective portion reported in earnings and the effective portion reported in other comprehensive income.
- A derivative that was previously designated as a hedge but is no longer highly effective, or a derivative that is not designated as a hedge, in earnings.
- An available-for-sale security in other comprehensive income.

**6.37** Generally accepted accounting principles also may require the entity to reclassify amounts from accumulated other comprehensive income to earnings. For example, such reclassifications may be required because a hedged transaction is determined to no longer be probable of occurring, a hedged forecasted transaction affects earnings for the period, or a decline in fair value is determined to be other than temporary.

**6.38** The auditor should evaluate management's conclusion about the need to recognize in earnings an impairment loss for a decline in fair value that is other than temporary as discussed in paragraphs 6.39 through 6.42. The auditor should also gather evidential matter to support the amount of unrealized appreciation or depreciation in the fair value of a derivative that is recognized in earnings or other comprehensive income or that is disclosed because of the ineffectiveness of a hedge. That requires an understanding of the methods used to determine whether the hedge is highly effective and to determine the ineffective portion of the hedge.

## Impairment Losses

**6.39** Regardless of the valuation method used, generally accepted accounting principles might require recognizing in earnings an impairment loss for a decline in fair value that is other than temporary. Determining whether losses are other than temporary often involves estimating the outcome of future events. Accordingly, judgment is required in determining whether factors exist that indicate that an impairment loss has been incurred at the end of the reporting period. These judgments are based on subjective as well as objective factors, including knowledge and experience about past and current events and assumptions about future events. The following are examples of such factors.

- Fair value is significantly below cost and—
  - The decline is attributable to adverse conditions specifically related to the security or to specific conditions in an industry or in a geographic area.
  - The decline has existed for an extended period of time.
  - Management does not possess both the intent and the ability to hold the security for a period of time sufficient to allow for any anticipated recovery in fair value.
- The security has been downgraded by a rating agency.
- The financial condition of the issuer or counterparty has deteriorated.
- Dividends have been reduced or eliminated, or scheduled interest payments have not been made.
- The entity recorded losses from the security subsequent to the end of the reporting period.

**6.40** The auditor should evaluate (a) whether management has considered relevant information in determining whether factors such as those listed in paragraph 6.39 exist and (b) management's conclusions about the need to recognize an impairment loss. That evaluation requires the auditor to obtain evidence about such factors that tend to corroborate or conflict with management's conclusions. When the entity has recognized an impairment loss, the auditor should gather evidence supporting the amount of the impairment adjustment recorded and determine whether the entity has appropriately followed generally accepted accounting principles.

**6.41** The auditor is not responsible for designing procedures to detect the presence of these factors per se. Rather, the auditor should consider whether management has considered information that would be relevant in determining whether such factors exist. For example, the auditor would not be responsible for determining whether the financial condition of the issuer of a security has deteriorated, but instead, would ask management how it considered the

issuer's financial condition. Once the auditor has determined that the entity considered relevant information, the auditor is responsible for evaluating management's conclusion about the need to recognize an impairment loss. To perform this evaluation the auditor should gather evidence about factors that tend to corroborate or conflict with management's conclusions.

**6.42** If the entity has recognized an impairment loss, and the auditor agrees with that conclusion, the auditor should—

- Determine that the write-down of an investment to a new cost basis is accounted for as a realized loss.
- Test the calculation of the loss recorded.
- Determine that the new cost basis of investments previously written down is not changed for subsequent recoveries in fair value.
- Review a summary of investments written down for completeness and unusual items.
- Assess the credit rating of the counterparty.
- Conclude on the adequacy of impairment adjustments recorded.

## Assertions About Presentation and Disclosure

**6.43** Assertions about presentation and disclosure address whether the classification, description, and disclosure of derivatives and securities in the entity's financial statements are in conformity with generally accepted accounting principles. The auditor should evaluate whether the presentation and disclosure of derivatives and securities are in conformity with generally accepted accounting principles. As noted in SAS No. 69, *The Meaning of Present Fairly in Conformity with Generally Accepted Accounting Principles* (AICPA, *Professional Standards*, vol. 1, AU sec. 411.04), the auditor's opinion as to whether financial statements are presented in conformity with generally accepted accounting principles should be based on the auditor's judgement as to whether—

- a. The accounting principles selected and applied have general acceptance.
- b. The accounting principles are appropriate in the circumstances.
- c. The financial statements, including the related notes, are informative of matters that may affect their use, understanding, and interpretation.
- d. The information presented in the financial statements is classified and summarized in a reasonable manner, that is, neither too detailed nor too condensed.
- e. The financial statements reflect the underlying transactions and events in a manner that presents the financial position, results of operations, and cash flows stated within a range of acceptable limits, that is, limits that are reasonable and practicable to attain in financial statements.

**6.44** For some derivatives and securities generally accepted accounting principles may prescribe presentation and disclosure requirements. For example—

- Whether changes in the fair value of derivatives used to hedge risks are required to be reported as a component of earnings or other comprehensive income depends on whether they are intended to hedge the risk of changes in the fair value of assets and liabilities or changes in expected future cash flows and on the degree of effectiveness of the hedge.

- Certain securities are required to be classified into categories according to management's intent and ability, such as held-to-maturity.
- Specific information is required to be disclosed about derivatives and securities.

**6.45** In evaluating the adequacy of presentation and disclosure, the auditor should consider the form, arrangement, and content of the financial statements and their notes, including, for example, the terminology used, the amount of detail given, the classification of items in the statements, and the bases of amounts reported. The auditor should compare the presentation and disclosure with the requirements of generally accepted accounting principles. However, the auditor should also follow the guidance in SAS No. 32 in evaluating the adequacy of disclosure that is not specifically required by generally accepted accounting principles.

## Other Considerations Regarding Substantive Procedures

### Inspection

**6.46** Traded securities typically are maintained in electronic form and in street name, and accordingly cannot be inspected. For example, even though stock certificates are on file at a depository (for example, the Depository Trust Company), those shares are allocated to broker-dealers, and the issuer has no record of who owns shares. The broker-dealers send such documents as proxy statements to stockholders. Confirmation of the security provides evidence about the existence of securities. Evidence about existence also may be gathered by examining supporting documentation, such as—

- Instructions to portfolio managers or directed custodians.
- Transaction confirmations.
- Agreements.
- Contracts.
- Minutes of investment committees.

**6.47** If audit evidence is maintained in electronic form, including electronic images of documents, the auditor should consider the controls in place to ensure the integrity of this information. Additionally, when planning the audit, the auditor should consider the hardware and software that will be needed to read documentation maintained in electronic form.

**6.48** As previously stated, many derivatives do not involve an initial exchange of cash. Also, they may be embedded in agreements and difficult to identify. Finally, securities may be donated to entities such as not-for-profit organizations. When inspecting documents such as minutes, agreements, and contracts, the auditor's overriding objective is to identify derivatives and securities that may not have been recognized in the accounting records of the entity.

**6.49** If the physical inspection of securities is possible, the auditor should consider—

- *The timing of the inspection.* The auditor should make every effort to inspect the securities at the same time cash and other negotiable assets (for example, bearer bonds) are counted. If securities, cash, and other negotiable assets cannot be counted at the same time, the auditor should use other means to prevent the substitution of one type of negotiable asset for another. For example, bags, boxes, safes, or whole rooms may be sealed and counted at a later time.

- *What to look for.* The following attributes normally can be observed when inspecting securities:
  - The name of the issuer
  - The description of the security
  - The name of the owner of the security
  - Any evidence of pledging or restrictions on disposal shown on the certificate
  - The number of shares of stock or face amount of debt securities
- *Interim or year-end procedures.* The auditor may decide to observe physical counts of securities or confirm securities at an interim date. In deciding upon such an interim testing strategy, the auditor usually should consider the control risk assessment for relevant controls during the remaining period. If control risk for relevant controls is assessed at the maximum for the remaining period, the auditor should consider the effectiveness of such an interim testing strategy. If interim procedures are performed, additional substantive tests should be designed and performed to cover the period from the interim date through the date of the statement of financial position. Assessing control risk at the maximum may be appropriate, for example, if the remaining period is short. However as discussed in SAS No. 45, *Substantive Tests Prior to the Balance-Sheet Date* (AICPA, *Professional Standards*, vol. 1, AU sec. 313.05), substantive tests covering the remaining period that relate to the existence assertion at the balance sheet date may be ineffective if effective controls over the custody and physical movement of securities are not present. In those situations, inspecting or confirming the securities at the balance-sheet date may be the only practical alternative.

## Confirmation

**6.50** When designing confirmation requests, the auditor should consider the types of information respondents will be readily able to confirm, since the nature of the information being confirmed may directly affect the competence of the evidence obtained as well as the response rate. For example, a custodian would be able to confirm the existence of securities but may be unable to confirm their valuation, the entity's rights and obligations with respect to the securities, or their completeness. Understanding the entity's arrangements and transactions with third parties is key to determining the information to be confirmed.

**6.51** Auditors should consider whether there is a sufficient basis for concluding that the confirmation request is being sent to a respondent who will provide meaningful and competent evidence. For example, the respondent should be knowledgeable about the information to be confirmed. Additionally, the auditor should consider the respondent's objectivity and freedom from bias with respect to the entity. For example, a greater degree of professional skepticism should be exercised when confirming the value of a derivative with an investment banker who is the counterparty to the transaction.

**6.52** When designing confirmations of derivatives and securities, auditors should consider confirming information that will provide evidence about the completeness of the information. For example, the auditor might wish to confirm the absence of written or oral side agreements, such as an agreement to repurchase securities sold, or the terms of an agreement that may have a significant impact on whether an embedded derivative is accounted for separately.

**6.53** When designing confirmations for derivatives and securities, auditors should consider confirming the following attributes, as applicable:

- The name of the issuer
- The description of the derivative or security
- The name of the owner of the security or the parties to the derivative
- The terms of the derivative or security
- Any evidence of pledging or restrictions on disposal
- The investment certificate numbers on the documents
- The number of shares of stock or face amount of debt securities

**6.54** If the auditor has not received responses to positive confirmation requests, the auditor should apply alternative procedures. These procedures may include—

- Examining source documents, such as invoices or broker's statements.
- Inspecting executed agreements.
- Examining cash receipts or disbursements subsequent to year end.

## Analytical Procedures

**6.55** Analytical procedures are based on relationships between data. The more predictable the relationships are, the more precise the auditor's expectation of the financial statement account. The value of many derivatives and securities can be highly volatile, making valuation assertions about them ill-suited to testing via analytical procedures. Additionally, the accounting for many derivatives and securities is based on underlying assumptions that oftentimes are quite subjective. Finally, the accounting for derivatives and securities may be highly dependent on management's intention. For example, the classification of debt and equity securities depends on management's ability and intent with regard to selling those securities. The accounting for derivatives depends on management's objectives in entering into those securities.

**6.56** For these reasons, performing analytical procedures alone may not sufficiently reduce audit risk for some assertions about derivatives and securities. For example, analytical procedures would not be effective in determining whether an embedded derivative has been properly recognized in the financial statements or in evaluating the fair value of a derivative whose value fluctuates greatly. However, they may be effective in pointing out unrecorded derivatives such as interest rate swaps that require no cash at inception. For example, a difference from an expectation that interest expense will be a fixed percentage of a note based on the interest provisions of the underlying agreement may indicate the existence of an interest rate swap agreement. Also, analytical procedures based on expectations of relationships between income and assets may provide some evidence about existence and completeness assertions.

**6.57** Analytical procedures may also be effective in corroborating the occurrence of income and expenses, and sometimes gains and losses associated with a derivative or security. For example, the absence of a material difference from an expectation that interest income will be a fixed percentage of a debt security based on the effective interest rate when the entity purchased the security provides evidence about the existence of the income (and of the security). However, auditors should consider that the income, expenses, gains, and losses associated with a derivative or security may involve a complex interplay of many factors. For example, if the fair value of a derivative is derived from the interrelationship of exchange rates, interest rates, rate differentials, or a combination of these, any attempts to develop an expectation of a financial statement amount may be difficult.



## How the Use of a Service Organization May Affect the Auditor's Procedures

**6.58** The provision by a service organization of services that are part of an entity's information system may affect the nature, timing, and extent of the auditor's substantive procedures for assertions about derivatives and securities. For example, if supporting documentation, such as derivative contracts or securities purchase and sales advices are located at a service organization, it may be necessary for the auditor of the entity's financial statements, an auditor working under the direction of that auditor, or an auditor engaged by the service organization to visit the service organization to inspect the documentation. Also, if investment advisers, holders of securities, recordkeepers, and other service organizations electronically transmit, process, maintain, or access significant information about an entity's securities, it may not be practicable or possible for the auditor to reduce audit risk to an acceptable level without identifying controls placed in operation by the service organization or the entity, and gathering evidential matter about the operating effectiveness of those controls.

**6.59** Paragraph 6.58 and the case study in chapter 9 discuss the effect on the auditor's control risk considerations if one or more service organizations provides securities services to the entity under a discretionary arrangement. Those discussions address the following two types of situations.

- *Two separate service organizations.* In this situation, one service organization initiates trades as an investment adviser and a second service organization holds and services the securities. The auditor may corroborate information provided by the two organizations. For example, the auditor may confirm holdings with the holder of the securities and apply other substantive tests to transactions reported by the entity based on information provided by the investment adviser. Depending on the facts and circumstances, the auditor also may confirm transactions or holdings with the investment adviser and review the reconciliation of differences. Paragraph 6.06 provides additional guidance on the auditor's considerations.
- *One service organization.* In this situation, one service organization initiates transactions as an investment adviser and also holds and services the securities. All of the information available to the auditor is based on one service organization's information. Therefore, the auditor may have to obtain evidence about the operating effectiveness of the service organization's controls. The auditor may be unable to sufficiently limit audit risk without obtaining evidential matter about the operating effectiveness of relevant service organization controls. An example of such controls is establishing independent departments that provide the investment advisory services and the holding and servicing of securities, then reconciling the information about the securities provided by each department.

## Additional Considerations About Hedging Activities

**6.60** To account for a derivative as a hedge, generally accepted accounting principles require management at the inception of the hedge to designate the derivative as a hedge and contemporaneously formally document<sup>7</sup> the hedging

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<sup>7</sup> FASB Statement No. 133 requires formal documentation of prescribed aspects of hedging relationships at the inception of the hedge.

relationship, the entity's risk management objective and strategy for undertaking the hedge, and the method of assessing the effectiveness of the hedge. In addition, to qualify for hedge accounting, generally accepted accounting principles require that management have an expectation, both at the inception of the hedge and on an ongoing basis, that the hedging relationship will be highly effective in achieving the hedging strategy.<sup>8</sup>

**6.61** The auditor should gather evidential matter to determine whether management complied with the hedge accounting requirements of generally accepted accounting principles, including designation and documentation requirements. In addition, the auditor should gather evidential matter to support management's expectation at the inception of the hedge that the hedging relationship will be highly effective and its periodic assessment of the ongoing effectiveness of the hedging relationship as required by generally accepted accounting principles.

**6.62** When the entity designates a derivative as a fair value hedge, generally accepted accounting principles require that the entity adjust the carrying amount of the hedged item for the change in the hedged item's fair value that is attributable to the hedged risk. The auditor should gather evidential matter supporting the recorded change in the hedged item's fair value that is attributable to the hedged risk. Additionally, the auditor should gather evidential matter to determine whether management has properly applied generally accepted accounting principles to the hedged item.

**6.63** For a cash flow hedge of a forecasted transaction, generally accepted accounting principles require management to determine that the forecasted transaction is probable of occurring. Those principles require that the likelihood that the transaction will take place not be based solely on management's intent. Instead, the transaction's probability should be supported by observable facts and the attendant circumstances, such as—

- The frequency of similar past transactions.
- The financial and operational ability of the entity to carry out the transaction.
- The extent of loss that could result if the transaction does not occur.
- The likelihood that transactions with substantially different characteristics might be used to achieve the same business purpose.

The auditor should evaluate management's determination of whether a forecasted transaction is probable.

## Assertions About Securities Based on Management's Intent and Ability

**6.64** Generally accepted accounting principles require that management's intent and ability be considered in valuing certain securities; for example, whether—

- Debt securities are classified as held-to-maturity and reported at their cost depends on management's intent and ability to hold them to their maturity.

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<sup>8</sup> FASB Statement No. 133 requires management to periodically reassess the effectiveness of hedging relationships whenever financial statements or earnings are reported, and at least every three months. It also requires that all assessments of effectiveness be consistent with the risk management strategy documented for the particular hedging relationship.

- Equity securities are reported using the equity method depends on management's ability to significantly influence the investee.
- Equity securities are classified as trading or available-for-sale depends on management's intent and objectives in investing in the securities.

**6.65** In evaluating management's intent and ability, the auditor should—

- a. Obtain an understanding of the process used by management to classify securities as trading, available-for-sale, or held-to-maturity.
- b. For an investment accounted for using the equity method, inquire of management as to whether the entity has the ability to exercise significant influence over the operating and financial policies of the investee and evaluate the attendant circumstances that serve as a basis for management's conclusions.
- c. If the entity accounts for the investment contrary to the presumption established by generally accepted accounting principles for use of the equity method, obtain sufficient competent evidential matter about whether that presumption has been overcome and whether appropriate disclosure is made regarding the reasons for not accounting for the investment in keeping with that presumption.
- d. Consider whether management's activities corroborate or conflict with its stated intent. For example, the auditor should evaluate an assertion that management intends to hold debt securities to their maturity by examining evidence such as documentation of management's strategies and sales and other historical activities with respect to those securities and similar securities.
- e. Determine whether generally accepted accounting principles require management to document its intentions and specify the content and timeliness of that documentation.<sup>9</sup> The auditor should inspect the documentation and obtain evidential matter about its timeliness. Unlike the formal documentation required for hedging activities, evidential matter supporting the classification of debt and equity securities may be more informal.
- f. Determine whether management's activities, contractual agreements, or the entity's financial condition provide evidence of its ability. For example—
  - The entity's financial position, working capital needs, operating results, debt agreements, guarantees, alternate sources of liquidity, and other relevant contractual obligations, as well as laws and regulations, may provide evidence about an entity's ability to hold debt securities to their maturity.
  - Management's cash flow projections may suggest that it does not have the ability to hold debt securities to their maturity.
  - Management's inability to obtain information from an investee may suggest that it does not have the ability to significantly influence the investee.

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<sup>9</sup> FASB Statement No. 115 requires an investor to document the classification of debt and equity securities into one of three categories—held-to-maturity, available-for-sale, or trading—at their acquisition.

- If the entity asserts that it maintains effective control over securities transferred under a repurchase agreement, the contractual agreement may be such that the entity actually surrendered control over the securities and therefore should account for the transfer as a sale instead of a secured borrowing.

## Management Representations

**6.66** SAS No. 85, *Management Representations* (AICPA, *Professional Standards*, vol. 1, AU sec. 333), provides guidance to auditors on obtaining written representations from management. The auditor ordinarily should obtain written representations from management confirming aspects of management's intent and ability that affect assertions about derivatives and securities, such as its intent and ability to hold a debt security until its maturity or to enter into a forecasted transaction for which hedge accounting is applied. In addition, the auditor should consider obtaining written representations from management confirming other aspects of derivatives and securities transactions that affect assertions about them.<sup>10</sup>

### Summary: Audit Implications

- A one-size-fits all approach will not be effective for auditing derivatives and securities. Substantive audit procedures will depend on the nature of the derivative or security and management's intended use of the instrument.
- Audit procedures such as inspection, confirmation, and analytical procedures may need to be modified to meet the particular audit needs unique to derivatives and securities.
- The entity's use of a service organization may affect the overall audit approach and the design of certain procedures.
- Estimates of fair value may be highly subjective and difficult to audit.
- Because derivatives transactions may not require an initial exchange of cash, the completeness assertion may be difficult to audit.

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<sup>10</sup> Appendix B of SAS No. 85 (AU sec. 333.17) provides illustrative representations about derivatives and securities transactions.

## Chapter 7

# Case Study of Changing the Classification of a Security to Held-to-Maturity

**7.01** In this case study, the entity changes the classification of a debt security from available-for-sale to held-to-maturity. The change in classification results from a change in management's intent in holding the security.

**7.02** The accounting considerations portion of this case study illustrates the entity's accounting for the change in the classification of the security. The auditing considerations section highlights the potential misstatements that can occur for the change in classification and how various inherent risk considerations affect substantive procedures.

## Accounting Considerations<sup>1</sup>

**7.03** BEV manufactures parts for high-performance bicycles. Several years ago, BEV purchased a 6 percent, AA-rated bond of a publicly traded copper mining company at its \$800,000 face amount. The intent of BEV's management was to invest in a relatively stable security that would be available to finance BEV's plant expansion, which they anticipated would take place within a short period of time. Accordingly, the bond was classified as available-for-sale.

**7.04** For the last two years, competition for BEV's products has increased dramatically, and as a result, BEV has failed to continue to grow. At the end of the current year, management dropped its plans to expand the plant, decided to hold the bond to maturity, and changed the classification of the bond to held-to-maturity. Several months before the change in classification, the bond's fair value began to decline. By the time the classification was changed, the bond's fair value had declined by \$150,000 from \$800,000<sup>2</sup> to \$650,000.

**7.05** Under FASB Statement No. 115,<sup>3</sup> BEV should record the unrealized loss through the date of change in classification through a \$150,000 charge to other comprehensive income and a \$150,000 credit directly to the bond. The \$650,000 fair value at the date the classification is changed becomes the bond's new cost basis. With the exception of a decline in fair value that is other than temporary, changes in the fair value of the bond after the change in classification should only be recognized when they are realized. However, any decline in value that is other than temporary should be recognized in earnings.

**7.06** When a bond is reclassified as held-to-maturity, the unrealized appreciation or depreciation in its value at the date of reclassification continues to be reported as a separate component of equity (such as accumulated other comprehensive income). However, it is treated as a premium or discount

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<sup>1</sup> For simplicity, this case study ignores income tax consequences.

<sup>2</sup> For simplicity, this case study assumes that at the end of the prior year, the bond's fair value equaled its \$800,000 face amount.

<sup>3</sup> In addition to the guidance in FASB Statement No. 115, questions 43 and 45 of the FASB Special Report, *A Guide to Implementation of Statement 115 on Accounting for Certain Investments in Debt and Equity Securities*, also provide guidance on accounting for a change in classification from available-for-sale to held-to-maturity.

and amortized over future years as a yield adjustment. The bond's amortized cost basis, which is its carrying amount, is its \$800,000 face amount less the unamortized portion of the \$150,000 unrealized loss at the date of reclassification.<sup>4</sup> Therefore, when the bond matures, its carrying amount will be its face amount. In financial statements after the reclassification, BEV's financial statements should disclose, among other things, the bond's amortized cost basis, its fair value, and the unrealized appreciation or depreciation in its value. The unrealized appreciation or depreciation disclosed in the financial statements should be the difference between the bond's fair value and its new amortized cost basis (that is, the fair value at the date of reclassification adjusted for unamortized premium or discount).

**7.07** BEV could use the following entries to record the change in classification of the bond from available-for-sale to held-to-maturity.

Other comprehensive income	\$150,000	
Investment in available-for-sale bond		\$150,000

To recognize the decline in the bond's fair value through the date its classification was changed.

Investment in held-to-maturity bond	\$650,000	
Investment in available-for-sale bond		\$650,000

To record the change in the bond's classification.

**7.08** The \$150,000 unrealized holding loss related to the bond at the time of the reclassification would continue to be reported in accumulated other comprehensive income. Each year, BEV will receive \$48,000 in cash from the issuer of the bond, which is 6 percent of the bond's \$800,000 face amount. The effective interest rate that would discount five annual payments of \$48,000 and an \$800,000 principal payment at the end of the fifth year to the bond's \$650,000 carrying amount when the classification is changed is 11.08393 percent. Accordingly, the difference between the result of applying this rate to the bond's carrying amount and the \$48,000 stated interest should be recorded as amortization of the discount. As the following table illustrates, the substance of the accounting is that each year cash increases \$48,000, the bond's carrying amount increases by the discount amortization, and equity increases by the result of applying 11.08393 percent to the carrying amount of the bond at the beginning of the year.

Year	Carrying Amount of the Bond	Cash Received	Discount Amortization	Total Increase in Equity
1	\$650,000	\$48,000	\$24,046	\$72,046
2	674,046	48,000	26,711	74,711
3	700,757	48,000	29,671	77,671
4	730,428	48,000	32,960	80,960
5	763,388	48,000	36,612	84,612
	\$800,000	\$240,000	\$150,000	\$390,000

<sup>4</sup> It may also be viewed as the \$650,000 fair value at the date of reclassification plus cumulative amortization of the \$150,000 unrealized loss at the date of reclassification.

The \$390,000 cumulative increase in equity over the five remaining years the bond is outstanding equals the \$240,000 interest received plus the amortization of the \$150,000 unrealized loss at the date of reclassification.

**7.09** The increase in equity should be split between interest income and other comprehensive income. Since BEV will not realize the \$150,000 unrealized loss charged to other comprehensive income, the effective rate of return on the bond reported in earnings is equal to the bond's stated interest rate. Therefore, interest income equals interest received. In substance, the excess of the increase in equity over the interest income equals the amortization of the discount and is reported as other comprehensive income. To illustrate the accounting, the following journal entry shows the combined effect of how BEV should record the increase in equity for the first year:

Cash	\$48,000	
Discount on investment in held-to-maturity bond	24,046	
Interest income		\$48,000
Other comprehensive income		24,046

**7.10** However, FASB Statement No. 115 actually looks at the accounting through three adjustments.<sup>5</sup> For example, the three entries for the first year would be—

Cash	\$48,000	
Interest income		\$48,000

To record interest received.

Discount on investment in held-to-maturity bond	\$24,046	
Interest income		\$24,046

To record amortization of the discount on the held-to-maturity bond.

Interest income	\$24,046	
Other comprehensive income		\$24,046

To record amortization of the unrealized loss included in accumulated other comprehensive income.

**7.11** At the end of the fifth year when the principal is collected—

- The discount will have been amortized, and the carrying amount of the bond will be \$800,000, the principal due on the bond.
- The \$150,000 unrealized loss in accumulated other comprehensive income will have been eliminated through credits to other comprehensive income.

## Auditing Considerations

### Description of the Entity

**7.12** BEV manufactures parts for high-performance bicycles. Recently, BEV hired a new controller, who came to the entity with five years of experience in public accounting. During the years of BEV's growth, the owners of the

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<sup>5</sup> Looking at the accounting through three adjustments facilitates accounting for amortization of a premium or discount that arose on the initial issuance of the bond and for income tax effects.

entity became less involved with the daily operations of the business, and the reliability of controls suffered. One of the first tasks of the new controller was to design and implement a more formal system of internal control that emphasized segregation of duties and strong oversight and monitoring of all accounting functions by supervisors. Included in this formal system is the requirement that one of BEV's owners personally review the month-end investment statements sent by the broker-dealer who holds and services the bond. These documents are then sent to the accounting department for entry into the accounting system. Based largely on the improvements made by the new controller, the auditor determined that BEV's control environment is well designed and capable of mitigating control risk.

## Summary of Accounting

**7.13** At the date of reclassification from available-for-sale to held-to-maturity, BEV should reduce the carrying amount of the bond to its fair value through a charge to other comprehensive income and a credit to the carrying amount of the bond. The unrealized loss at that date should be amortized over the remaining life of the bond as a discount, thereby increasing the carrying amount of the bond over the remaining life of the bond so that it equals the bond's face amount when the bond matures. The loss charged to other comprehensive income should continue to be reported in accumulated other comprehensive income but amortized over the remaining life of the bond through credits to other comprehensive income in amounts equal to the discount amortization. As a result of this accounting, each year BEV will report in earnings interest at the bond's 6 percent stated rate and other comprehensive income equal to the discount amortization.

## Types of Potential Misstatements

**7.14** *Improper accounting.* During the audit period, BEV reclassified the bond from available-for-sale to held-to-maturity. The accounting for the change in classification and subsequent amortization may not conform to the requirements of FASB Statement No. 115.

**7.15** *Improper change in classification.* The classification of a bond as held-to-maturity requires BEV to have both the intent and the ability to hold the bond to maturity. BEV may have reclassified the bond in the absence of a positive intent to hold it until maturity and the ability to do so.

## Inherent Risk Factors to Consider for This Transaction in Planning the Audit

**7.16** Because the classification of the bond had been changed from available-for-sale to held-to-maturity, the auditor assessed inherent risk to be high based on—

- *The entity's experience.* The accounting personnel's lack of experience with changes in bond classifications and the special accounting considerations increase the inherent risk the change is accounted for incorrectly.
- *Management's objectives.* During the audit period, management changed its objective in holding the bond. Previously, management intended it to be available-for-sale, but now their stated objective was to hold the security to its maturity.



## Control Risk

7.17 BEV uses a broker-dealer to hold and service its securities, including the investment in the bond. However, the fact that the entity uses a service organization to process some of its securities transactions does not, in and of itself, require the auditor to obtain information about the broker-dealer's controls. In order to plan the audit, the auditor is required to gain an understanding of an entity's information system and other controls. This understanding should be sufficient for the auditor to—

- Identify the types of potential misstatement of the assertions.
- Consider factors that affect the risk that the potential misstatements would be material to the financial statements.
- Design substantive tests.

7.18 The types of potential material misstatements relating to BEV's investment in the bond relate primarily to the change in classification from available-for-sale to held-to-maturity, which is a risk that will not be addressed by the controls at the broker-dealer. Additionally, all the information required to perform substantive procedures on the investment is maintained by BEV. Accordingly, the auditor does not have to obtain an understanding of controls in operation at the broker-dealer in order to plan the audit.

7.19 Because the purchase and subsequent reclassification of the bond was considered to be an isolated transaction, control risk was assessed at the maximum.

## Timing of Procedures

7.20 All relevant assertions associated with this transaction will be substantively tested at year end.

## Materiality

7.21 The transaction is considered material.

## Design of Substantive Procedures

7.22 The auditor defined the following objectives and related procedures for the audit of assertions about the transaction.

<u>Audit Objective</u>	<u>Procedure</u>
The bond exists and is owned by BEV.	<ul style="list-style-type: none"> <li>● Confirm existence and ownership with the broker-dealer.</li> </ul>
Management authorized the change in classification of the bond from available-for-sale to held-to-maturity.	<ul style="list-style-type: none"> <li>● Review minutes of meetings of relevant groups for evidence that management authorized the change.</li> <li>● Absent written evidence in the minutes, perform other procedures to determine whether the change was authorized, such as inquiry or obtaining a representation in the management representation letter.</li> </ul>
The bond's fair value at the date its classification was changed was properly determined.	<ul style="list-style-type: none"> <li>● Test the fair value of the bond at the date of reclassification by agreeing market price to independent published sources.</li> </ul>

**Audit Objective**

The difference between the bond's fair value and its face amount at the date the bond's classification was changed was properly recorded and amortized.

Management has the positive intent and ability to hold the bond to maturity.

Presentation and disclosure are appropriate.

**Procedure**

- Recalculate the difference between the bond's face amount and fair value at the date the bond's classification was changed to held-to-maturity.
- Recalculate the amortization of the resulting discount.
- Review management's cash flow forecasts or perform other procedures as considered necessary to assess BEV's ability to hold the security to maturity.
- Obtain a representation in the management representation letter confirming management's intent to hold the security to maturity.<sup>6</sup>
- Read the financial statements and compare the presentation and disclosure with the requirements of FASB Statement No. 115.

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<sup>6</sup> A written representation of management's intent and ability with regard to held-to-maturity securities does not constitute sufficient audit evidence. SAS No. 92 (AU sec. 332.57) provides additional guidance on the types of auditing procedures the auditor might perform to corroborate management's stated intent and ability to realize that intent.

## Chapter 8

# Case Study of a Written Put Option on Stock of a Closely Held Entity

**8.01** In this case study, the entity is closely held and writes a put option indexed to its own stock. A put option on stock gives the holder of the option the right (but not the obligation) to sell a specified number of shares to the writer of the option at a fixed price during a given period. Depending on the specific terms, the option contract may have characteristics of both debt and equity for its writer.

**8.02** The accounting considerations portion of the case study illustrates the entity's accounting for the put option and discusses why the option is not subject to the requirements of FASB Statement No. 133. Although FASB Statement No. 133 does not apply, an EITF consensus position does. Under the consensus position, the option should initially be recorded at its fair value as a component of equity, but subsequent unrealized gains and losses should not be recognized. The auditing considerations section highlights the potential misstatements that can occur when accounting for the put option and how various inherent risk considerations affect substantive procedures.

## Accounting Considerations<sup>1</sup>

**8.03** Rosebud.com is a closely held start-up entity developing new technologies for the filmmaking industry. Charles Foster, one of the entity's founders, has been negotiating the terms of a divorce from his wife. He has agreed to give her half of his 500,000 shares in Rosebud.com. Mrs. Foster also has requested that the entity guarantee the value of the stock by granting her the option to resell the stock to the entity for a stated price at a given future date. During 20X0, the stockholders agreed to grant Mrs. Foster the option of reselling her shares to the entity at \$8 per share.

**8.04** In effect, Rosebud.com has written a put option on its own stock. FASB Statement No. 133 excludes from its scope a contract that is issued or held by the reporting entity and is both indexed to its own stock and classified in stockholders' equity in its statement of financial position. In addition, the put option is not a derivative as that term is defined in FASB Statement No. 133 since the option contract permits only physical settlement and therefore does not meet one of the net settlement criteria required to be considered a derivative. Guidance on the accounting for this transaction is provided by EITF Issue No. 00-19, *Accounting for Derivative Financial Instruments Indexed to, and Potentially Settled in, a Company's Own Stock*. According to the consensus position reached on the issue, the accounting for the type of contract entered into by Rosebud.com depends on the way the contract will be settled. The settlement methods discussed are—

- **Physical settlement.** The party designated in the contract as the buyer delivers the full stated amount of cash to the seller, and the seller delivers the full stated number of shares to the buyer.

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<sup>1</sup> For simplicity, this case study ignores income tax consequences.

- *Net share settlement.* The party with a loss delivers to the party with a gain shares with a current fair value equal to the gain.
- *Net cash settlement.* The party with a loss delivers to the party with a gain a cash payment equal to the gain, and no shares are exchanged.

The put option contract in this case study requires physical settlement. If Mrs. Foster exercises her option, Rosebud.com is required to deliver the full stated amount of cash to Mrs. Foster, and she is required to deliver her entire 250,000 shares to Rosebud.com.

**8.05** Under the guidance contained in EITF Issue 00-19, a written put option requiring physical settlement should be reported as equity<sup>2</sup> and measured at fair value. Subsequent changes in the fair value of the option should not be recognized. At the date the option was granted, Rosebud.com estimated that the fair value of the option was \$100,000 and made the following journal entry.

Compensation expense <sup>3</sup>	\$100,000	
Contributed capital		\$100,000

To record the put option.

**8.06** The option contract is a financial instrument.<sup>4</sup> However, Rosebud.com is a nonpublic entity, and therefore FASB Statement No. 107 would not require disclosure about the contract’s fair value if the entity has total assets less than \$100 million and has no derivatives subject to the requirements of FASB Statement No. 133. If Rosebud.com does not have each of those characteristics, for example if it has an interest rate swap, FASB Statement No. 107 would require one of the following:

- Disclosure of information about the option’s fair value
- If estimating its fair value is not practicable, pertinent information about determining fair value and the reasons why it is not practicable to estimate fair value.

**8.07** At the date Mrs. Foster exercised her option, Rosebud.com made the following entry (based on the sales price of \$8 per share and 250,000 shares).

Contributed capital (or Treasury stock)	\$2,000,000	
Cash		\$2,000,000

To record the payment due under the put option.

<sup>2</sup> EITF Issue No. 00-19 provides detailed guidance for determining whether an equity derivative contract indexed to, and potentially settled in, a company’s own stock should be accounted for as an asset, liability, or equity. For example, if the put option in this case study could require net-cash settlement, EITF Issue No. 00-19 would preclude Rosebud.com from accounting for the contract as equity unless each of several prescribed conditions were met. Determining whether management appropriately considered those conditions would require the auditor to apply additional procedures beyond those discussed in this case study.

<sup>3</sup> The objective of the discussion of accounting considerations in this case study is to provide background information necessary to look at the auditing considerations. For illustrative purposes, this case study assumes that the fair value of the option is recorded through compensation expense. Other approaches may also be appropriate, such as recording it as a dividend.

<sup>4</sup> FASB Statement No. 107, as well as FASB Statement No. 133, defines a financial instrument as cash, evidence of an ownership interest in an entity, or a contract that both—

- Imposes on one entity a contractual obligation (i) to deliver cash or another financial instrument to a second entity or (ii) to exchange financial instruments on potentially unfavorable terms with the second entity.
- Conveys to that second entity a contractual right (i) to receive cash or another financial instrument from the first entity or (ii) to exchange other financial instruments on potentially favorable terms with the first entity.

## Auditing Considerations

### Description of the Entity

**8.08** Rosebud.com is a start-up entity in the process of developing technology to deliver movies over the Internet. The entity is actively pursuing venture capital financing.

**8.09** Founders of the entity have considerable technical expertise in the type of technology Rosebud.com is developing. The management group also has experience in managing a start-up technology entity and in taking that entity public. The entity has an outside board of directors. It is advised by highly regarded professional services firms with expertise in intellectual property, initial public offerings, and SEC matters.

**8.10** Because of the quality of the management team, its technical expertise, and previous experience, the auditor assesses the entity's control environment as good.

### Summary of Accounting

**8.11** The contract with Mrs. Foster should be reported as equity and measured at fair value. Any subsequent changes in the fair value of the contract should not be reported.

### Types of Potential Misstatements

**8.12** *Inaccurate estimate of fair value.* Estimating the value of a non-exchange-traded option usually is done using an options pricing model. Some of the assumptions necessary to use the model may require a great deal of judgment when the underlying stock is not publicly traded (in this case study, the volatility of Rosebud.com's stock will be quite subjective.) Unsupportable assumptions may result in fair value estimates that are materially incorrect.

**8.13** *Improper classification.* A written put option has the elements of both debt and equity. The entity may improperly classify the contract.

### Inherent Risk Factors to Consider for This Transaction in Planning the Audit

**8.14** In assessing inherent risk, the auditor considered—

- *The complexity of the instrument.* As described above, it will be difficult to determine the fair value of the option, since both the option and the underlying stock are not publicly traded.
- *Whether the transaction involved the exchange of cash.* The contract did not involve an initial exchange of cash, which increases the risk that the transaction was not captured by the entity's accounting system.
- *The entity's experience with the instrument.* Because the entity has no previous experience writing put options on its own stock, the risk that it would be accounted for improperly is increased.

**8.15** Because of the presence of these factors and the potential material impact the put option could have on the entity's financial position, the auditor assessed inherent risk as high and determined that the situation warranted the direct involvement of the most experienced firm members.

## Control Risk

8.16 The transaction that resulted in the entity writing a put option was an unusual, one-time event. As such, it was reviewed and approved by the stockholders and board of directors and was not subject to the entity's usual operating control procedures. Therefore, control risk was assessed at the maximum.

## Timing of Procedures

8.17 The relevant assertions associated with this transaction will be substantively tested at year end. This decision is influenced by the assessment of control risk at the maximum, the fact that this is an isolated transaction, and the design of the substantive procedures (confirmation and recomputation) as discussed below.

## Materiality

8.18 The transaction is considered material.

## Design of Procedures

8.19 The auditor defined the following objectives and related procedures for the audit of assertions about the put option.

Audit Objective	Procedure
The option was captured by the accounting system.	<ul style="list-style-type: none"> <li>● Read the minutes of the board of directors.</li> <li>● Make inquiries of management regarding the presence of significant, unusual transactions.</li> <li>● Send and review related party questionnaires.</li> </ul>
The option exists and was authorized by management.	<ul style="list-style-type: none"> <li>● Read the contract.</li> <li>● Confirm the existence and terms of the contract with the counterparty.</li> </ul>
The option has been measured and reported at fair value.	<ul style="list-style-type: none"> <li>● Test the model and assumptions used by the entity to calculate the fair value of the option, or</li> <li>● Recalculate the fair value, or</li> <li>● Use the work of a specialist, as described in SAS No. 73.</li> </ul>
Presentation and disclosure are appropriate.	<ul style="list-style-type: none"> <li>● Read the financial statements and compare the presentation and disclosure with the requirements of generally accepted accounting principles.</li> </ul>

## Chapter 9

# Case Study of How the Entity's Use of Service Organizations Affects the Auditor's Considerations in Auditing Securities

**9.01** This case study uses three scenarios to illustrate how the entity's use of service organizations affects the auditor's considerations in planning and performing auditing procedures for assertions about securities and securities transactions.

- a. Scenario A is a directed investing arrangement with one service organization, a broker-dealer. In this scenario, the entity initiates trades, and the broker-dealer executes the trades and holds and services securities purchased.<sup>1</sup>
- b. Scenario B is a discretionary investing arrangement with two service organizations, an investment adviser and a broker-dealer. In this scenario, the investment adviser initiates trades under a discretionary arrangement with the entity, and the broker-dealer<sup>2</sup> executes the trades and holds and services securities purchased.
- c. Scenario C is a discretionary investing arrangement with one service organization, a broker-dealer. In this scenario, the broker-dealer initiates trades under a discretionary arrangement with the entity and also executes the trades and holds and services securities purchased.

**9.02** The following section contains information that applies to each of these scenarios:

- A description of the entity
- A summary of the accounting considerations
- Types of potential misstatements of the entity's assertions about its securities and securities transactions
- Inherent risk factors the auditor considers in planning the audit
- Timing of substantive tests
- Materiality considerations

**9.03** That section is followed by separate sections for each of the three scenarios that discuss—

- The understanding of controls the auditor needs to plan the audit.
- The auditor's assessment of control risk.

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<sup>1</sup> In SAS No. 92 and this Guide, maintaining custody of securities, either in physical or electronic form, is referred to as *holding*, and performing ancillary services is referred to as *servicing*. Examples of servicing transactions are collecting dividends and interest and distributing that income to the entity and receiving notification of corporate actions, such as stock splits.

<sup>2</sup> As discussed further in the AICPA Audit and Accounting Guide *Brokers and Dealers in Securities*, generally only a clearing broker-dealer can execute trades and hold and service securities. Entities and investment advisers may work with a clearing broker-dealer or with a local or regional broker-dealer that is an introducing broker-dealer and in turn works with a separate clearing broker-dealer. The clearing broker-dealer, rather than the introducing broker-dealer, handles execution, holding, and servicing. Typically, the introducing broker-dealer in substance only acts as a conduit and therefore does not provide services that are part of the entity's information system.

- The auditor's design of procedures, including, where applicable, the auditor's considerations in identifying controls that reduce control risk and the procedures the auditor uses to gather evidential matter about the operating effectiveness of those controls.

## Information That Applies to Each of the Scenarios

### Description of the Entity

**9.04** Lane Components, Inc. (Lane) manufactures electrical connectors and distributes them nationally and internationally, primarily to manufacturers. Several years ago, it sold a large division and used the proceeds to begin building a portfolio of equity securities traded on an exchange regulated by the SEC. Lane views the portfolio as a source of funds for future business acquisitions and plant expansions.

### Summary of the Accounting Considerations

**9.05** Lane accounts for the securities as available-for-sale under FASB Statement No. 115 and accordingly reports the securities at their fair value, with unrealized changes in fair value recognized in other comprehensive income and reclassified into earnings when they are realized.

### Types of Potential Misstatements of the Entity's Assertions About Its Securities and Securities Transactions

**9.06** The auditor identifies seven types of potential misstatements of Lane's assertions about its securities and securities transactions.

- a. The recorded securities do not exist and the recorded securities transactions did not occur.
- b. Lane does not have the rights and obligations associated with ownership of the recorded securities.
- c. Securities and securities transactions were not recorded.
- d. The fair value of the recorded securities was determined incorrectly.
- e. Realized and unrealized holding gains and losses are not properly reported as earnings or other comprehensive income.
- f. The securities are not classified correctly.
- g. Disclosures about securities and securities transactions are not adequate.

### Inherent Risk Factors the Auditor Considers in Planning the Audit

**9.07** The securities are traded on an exchange regulated by the SEC and the features of the instruments, underlying transactions, and accounting considerations are relatively straightforward. The auditor assesses inherent risk for all assertions about securities and securities transactions as low.

### Timing of Substantive Tests

**9.08** The auditor decides to perform substantive tests of assertions about securities at year end because of the relatively small number of securities and securities transactions.



## Materiality Considerations

**9.09** The carrying amount of the securities, and the realized and unrealized gains and losses on them, are material to Lane's financial statements, but dividends on the securities are not material to the statements.

## Scenario A—Directed Investing Arrangement With One Service Organization, a Broker-Dealer

**9.10** In this scenario, Lane initiates trades, and the broker-dealer executes the trades and holds and services securities purchased.

### The Understanding of Controls the Auditor Needs to Plan the Audit

**9.11** In order to plan the audit, the auditor obtains the following understanding of controls.

- Lane initiates trades and directs the broker-dealer to execute them.
- Lane maintains records of the trades it directs the broker-dealer to execute.
- The broker-dealer sends a confirmation of each trade to Lane, which Lane usually receives within three business days.
- Lane compares the information in the trade confirmation with its record of the trade that it directed the broker-dealer to execute and investigates significant differences.
- Lane then records the trade in general ledger accounts.
- At the end of the year, Lane adjusts the general ledger accounts for trades that it has initiated but for which confirmations have not been received. Information for that adjustment is obtained from Lane's record of trades that it directed the broker-dealer to execute and the confirmations of those trades that it received subsequent to year end.
- Monthly, the broker-dealer sends Lane a statement that shows trades, servicing transactions, a description of the securities held, and the fair value of each of those securities.
- Monthly, Lane compares the information about trades and the components of its securities portfolio that is shown in its accounting records with the broker-dealer's monthly statement and investigates significant differences.
- Monthly, Lane records servicing transactions and changes in unrealized holding gains and losses based on information in the broker-dealer's monthly statement. Lane compares the broker-dealer information with its expectations based on published information and investigates significant differences.

**9.12** Following the guidance in SAS No. 92, (AU sec. 332.12 and .13), the auditor concludes that—

- Servicing securities and providing fair value information are broker-dealer services that are part of Lane's information system.
- The broker-dealer's execution of trades and holding of securities are not part of Lane's information system.

**9.13** With respect to whether obtaining an understanding of the broker-dealer’s controls is necessary to plan the audit, the auditor concludes that—

- The broker-dealer’s controls over servicing securities and providing fair value information are not significant to Lane’s controls because Lane—
  - Compares broker-dealer information about servicing and fair values with its expectations based on published information.
  - Investigates significant differences.

Accordingly, obtaining an understanding of the broker-dealer’s controls over those services is not necessary.

- Since the broker-dealer’s execution of trades and holding of securities are not part of Lane’s information system, obtaining an understanding of the broker-dealer’s controls over those services is not necessary.

### The Auditor’s Assessment of Control Risk

**9.14** The auditor concludes that audit risk can be reduced to an acceptable level without identifying controls Lane placed in operation and gathering evidential matter about their operating effectiveness. In addition, the auditor concludes that the number of securities and securities transactions is small enough that gathering evidential matter about the operating effectiveness of Lane’s controls sufficient to support an assessment of control risk below the maximum is not likely to significantly improve audit efficiency.

**9.15** However, if the number of transactions increases in future years, the auditor will reconsider that conclusion. For example, the auditor may be able to reduce the number of trades tested by gathering evidential matter about the operating effectiveness of Lane’s controls of comparing the information in the trade confirmation with its record of the trade that it directed the broker-dealer to execute and investigating significant differences. Evidential matter might be gathered by inspecting the documentation of the comparisons for trades, noting the timeliness of the comparison, and inspecting the documentation of the analysis of results and investigation of significant differences.

### The Auditor’s Design of Procedures

**9.16** The auditor identifies the objectives for the audit of assertions about securities and securities transactions and designs related procedures.

<u>Audit Objective</u>	<u>Procedure</u>
The recorded securities exist and Lane has the rights and obligations associated with ownership of the recorded securities.	<ul style="list-style-type: none"> <li>● Confirm with the broker-dealer the name of the investee, the number of shares, whether the shares are pledged, and that Lane is the owner.</li> </ul>
The recorded securities transactions occurred.	<ul style="list-style-type: none"> <li>● Inspect supporting documentation, such as trade confirmations or entries in the broker-dealer’s monthly statements.</li> </ul>
All of the securities that Lane owns and all of its securities transactions have been recorded.	<ul style="list-style-type: none"> <li>● Reconcile the fair value of the securities at the beginning and end of the year using information provided by the broker-dealer.</li> <li>● Perform analytical procedures on dividends and realized and unrealized gains and losses.</li> </ul>

**Audit Objective**

The securities are recorded at their fair value determined following the requirements of FASB Statement No. 115.

Realized and unrealized holding gains and losses are properly reported as earnings or other comprehensive income.

The securities are properly classified.

Disclosures about securities and securities transactions are adequate.

**Procedure**

- Obtain the per-share price quoted by the exchange at the balance sheet date and compare the quoted price with the price Lane used.
- Test the extension of the number of shares at the quoted price.
- Evaluate management's considerations in ensuring that the requirements of FASB Statement No. 115 were satisfied.
- Review journal entries for propriety.
- Gather evidential matter about the classification of the securities as available-for-sale.
- Read the financial statements and compare the disclosures about securities and securities transactions with the requirements of FASB Statement No. 115.

## Scenario B—Discretionary Investing Arrangement With Two Service Organizations, an Investment Adviser and a Broker-Dealer

9.17 In this scenario, the investment adviser initiates trades under a discretionary arrangement with Lane, and the broker-dealer executes the trades and holds and services securities purchased.

### The Understanding of Controls the Auditor Needs to Plan the Audit

9.18 In order to plan the audit, the auditor obtains the following understanding of controls.

- The investment adviser initiates trades within parameters set by Lane and directs the broker-dealer to execute them.
- The broker-dealer sends a confirmation of each trade to the investment adviser and to Lane, which Lane usually receives within three business days.
- Lane records the trade in general ledger accounts when it receives the trade confirmation.<sup>3</sup>
- At the end of the year, Lane adjusts the general ledger accounts for trades that the investment adviser has initiated but for which confirmations have not been received. Information for that adjustment is obtained from Lane's reconciliation of the investment adviser's information with the broker-dealer's information (discussed below) and from the confirmations of those trades that Lane received subsequent to year end.
- Monthly, the broker-dealer sends the investment adviser and Lane a statement that shows trades, servicing transactions, a description of the securities held, and the fair value of each of those securities.

<sup>3</sup> In this scenario, recording trades when Lane receives the broker-dealer's monthly statements may also be an effective control for Lane.

- Monthly, Lane compares the information about trades and the components of its securities portfolio that is shown in its accounting records with the broker-dealer's monthly statement and investigates significant differences.
- Monthly, Lane records servicing transactions and changes in unrealized holding gains and losses based on information in the broker-dealer's monthly statement. Lane compares the broker-dealer information with its expectations based on published information and investigates significant differences.
- Quarterly, the investment adviser gives Lane a summary of trades and the performance of the securities portfolio. Lane reconciles the information provided by the investment adviser with the broker-dealer's information and investigates significant differences.

**9.19** Following the guidance in SAS No. 92 (AU sec. 332.12 and .13), the auditor concludes that—

- The investment adviser's initiation of trades is part of Lane's information system.
- Servicing securities and providing fair value information are broker-dealer services that are part of Lane's information system.
- The broker-dealer's execution of trades and holding of securities are not part of Lane's information system.

**9.20** With respect to whether obtaining an understanding of the controls of the investment adviser and broker-dealer is necessary to plan the audit, the auditor concludes that—

- The investment adviser's controls over initiation of trades and the broker-dealer's controls over servicing securities and providing fair value information are not significant to Lane's controls because Lane—
  - Reconciles the investment adviser's information with the broker-dealer's information.
  - Compares broker-dealer information about servicing and fair values with its expectations based on published information.
  - For each, investigates significant differences.

Accordingly, obtaining an understanding of the investment adviser's and broker-dealer's controls over those services is not necessary.

- Since the broker-dealer's execution of trades and holding of securities are not part of Lane's information system, obtaining an understanding of the broker-dealer's controls over those services is not necessary.

## The Auditor's Assessment of Control Risk

**9.21** The auditor concludes that audit risk can be reduced to an acceptable level without identifying controls Lane placed in operation and gathering evidential matter about their operating effectiveness. In addition, the auditor concludes that the number of securities and securities transactions is small enough that gathering evidential matter about the operating effectiveness of Lane's controls sufficient to support an assessment of control risk below the maximum is not likely to significantly improve audit efficiency.

**9.22** However, if the number of transactions increases in future years, the auditor will reconsider that conclusion. For example, the auditor may be able to reduce the number of trades tested by gathering evidential matter about the

operating effectiveness of Lane’s controls of reconciling the investment adviser’s information with the broker-dealer’s information and investigating significant differences. Such evidential matter might be gathered by inspecting the documentation of some of the reconciliations, noting their timeliness, and inspecting the documentation of the analysis of results and investigation of significant differences.

### The Auditor’s Design of Procedures

**9.23** The auditor identifies the objectives for the audit of assertions about securities and securities transactions and designs related procedures.

<u>Audit Objective</u>	<u>Procedure</u>
The recorded securities exist and Lane has the rights and obligations associated with ownership of the recorded securities.	<ul style="list-style-type: none"> <li>● Confirm with the broker-dealer the name of the investee, the number of shares, whether the shares are pledged, and that Lane is the owner.</li> </ul>
The recorded securities transactions occurred.	<ul style="list-style-type: none"> <li>● Inspect supporting documentation such as trade confirmations or entries in the broker-dealer’s monthly statements.</li> </ul>
All of the securities that Lane owns and all of its securities transactions have been recorded.	<ul style="list-style-type: none"> <li>● Test the reconciliation of the investment adviser’s information with the broker-dealer’s information.</li> <li>● Perform analytical procedures on dividends and realized and unrealized gains and losses.</li> </ul>
The securities are recorded at their fair value determined following the requirements of FASB Statement No. 115.	<ul style="list-style-type: none"> <li>● Obtain the per-share price quoted by the exchange at the balance sheet date and compare the quoted price with the price Lane used.</li> <li>● Test the extension of the number of shares at the quoted price.</li> </ul>
Realized and unrealized holding gains and losses are properly reported as earnings or other comprehensive income.	<ul style="list-style-type: none"> <li>● Evaluate management’s considerations in ensuring that the requirements of FASB Statement No. 115 were satisfied.</li> <li>● Review journal entries for propriety.</li> </ul>
The securities are properly classified.	<ul style="list-style-type: none"> <li>● Gather evidential matter about the classification of the securities as available-for-sale.</li> </ul>
Disclosures about securities and securities transactions are adequate.	<ul style="list-style-type: none"> <li>● Read the financial statements and compare the disclosures about securities and securities transactions with the requirements of FASB Statement No. 115.</li> </ul>

### Scenario C—Discretionary Investing Arrangement With One Service Organization, a Broker-Dealer

**9.24** In this scenario, the broker-dealer initiates trades under a discretionary arrangement with Lane and also executes the trades and holds and services securities purchased.

## The Understanding of Controls the Auditor Needs to Plan the Audit

**9.25** In order to plan the audit, the auditor obtains the following understanding of controls.

- The broker-dealer initiates trades within parameters set by Lane and also executes the trades.
- The broker-dealer sends a confirmation of each trade to Lane, which Lane usually receives within three business days.
- Lane records the trade in general ledger accounts when it receives the trade confirmation.<sup>4</sup>
- Monthly, the broker-dealer sends Lane a statement that shows trades, servicing transactions, a description of the securities held, and the fair value of each of those securities.
- Monthly, Lane compares the information about trades and the components of its securities portfolio that is shown in its accounting records with the broker-dealer's monthly statement and investigates significant differences.
- Monthly, Lane records servicing transactions and changes in unrealized holding gains and losses based on information in the broker-dealer's monthly statement. Lane compares the broker-dealer information with its expectations based on published information and investigates significant differences.

**9.26** Following the guidance in SAS No. 92 (AU sec. 332.12 and .13), the auditor concludes that—

- Initiating trades, servicing securities, and providing fair value information are broker-dealer services that are part of Lane's information system.
- The broker-dealer's execution of trades and holding of securities are not part of Lane's information system.

**9.27** With respect to whether obtaining an understanding of the broker-dealer's controls is necessary to plan the audit, the auditor concludes that—

- Since the broker-dealer initiates and executes trades, all of the information about trades that is available to Lane comes from the broker-dealer. Accordingly, the broker-dealer's controls over initiation of trades are significant to Lane's controls, and information about the manner in which trades are initiated is needed to plan the audit. The auditor decides that an effective broker-dealer control over initiation of trades would be—
  - Establishing independent departments that provide the investment advisory services and the holding and servicing of securities.
  - Reconciling the information about the securities that is provided by each department.

Based on available information, the auditor believes the broker-dealer has such controls.<sup>5</sup>

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<sup>4</sup> In this scenario, recording trades when Lane receives the broker-dealer's monthly statements may also be an effective control for Lane. In addition, since the broker-dealer initiates and executes trades, no adjustment is necessary for trades that have been initiated but not executed.

<sup>5</sup> To help plan the audit, the auditor may gather information about broker-dealer controls over existence and completeness assertions from a variety of sources. Examples are a SAS No. 70 report, manuals provided by the broker-dealer, and inquiries of broker-dealer personnel.

- The broker-dealer's controls over servicing securities and providing fair value information are not significant to Lane's controls because Lane—
  - Compares broker-dealer information about servicing and fair values with its expectations based on published information.
  - Investigates significant differences.Accordingly, obtaining an understanding of the broker-dealer's controls over those services is not necessary to plan the audit.
- Since the broker-dealer's execution of trades and holding of securities are not part of Lane's information system, obtaining an understanding of the broker-dealer's controls over those securities is not necessary.

## The Auditor's Assessment of Control Risk

**9.28** As discussed in SAS No. 92 (AU sec. 332.20), in this arrangement, where the broker-dealer both initiates and executes trades, the broker-dealer provides all of the information about trades that is available to the auditor. In addition, the broker-dealer's initiation and execution services are largely provided electronically. Accordingly, the auditor concludes that audit risk cannot be limited sufficiently without obtaining evidential matter about the operating effectiveness of the broker-dealer's controls of—<sup>6</sup>

- Establishing independent departments that provide the investment advisory services and the holding and servicing of securities.
- Reconciling the information about the securities that is provided by each department.

**9.29** If the evidential matter about the operating effectiveness of these controls supports an assessment of control risk below the maximum, the auditor may also be able to reduce the number of trades tested. The resulting audit efficiencies will become more noticeable as the number of trades increases.

## The Auditor's Design of Procedures

**9.30** The auditor gathers evidential matter that the broker-dealer has implemented the controls described in paragraph 9.28 and that those controls are operating effectively.<sup>7</sup> The auditor then identifies the objectives for the audit of assertions about securities and securities transactions and designs related procedures.<sup>8</sup>

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<sup>6</sup> As a practical matter, Lane's management should view information about the operating effectiveness of the broker-dealer's controls as an important part of its risk management considerations.

<sup>7</sup> The evidential matter can be obtained a variety of ways, such as a type 2 SAS No. 70 report or special procedures performed by the broker-dealer's internal or external auditors.

<sup>8</sup> In scenarios A and B, the auditor concludes that audit risk can be reduced to an acceptable level without identifying controls placed in operation and gathering evidential matter about their operating effectiveness. In this scenario, however, the auditor concludes that identifying broker-dealer controls over the existence and completeness assertions and gathering evidential matter about their operating effectiveness is necessary to reduce audit risk to an acceptable level. The only difference in the nature of substantive procedures is that in this scenario, analytical procedures are the only procedures performed to determine whether all of the securities Lane owns and all of its securities transactions have been recorded. However, in Scenarios A and B, reconciliation procedures are also performed.

**Audit Objective**

The recorded securities exist and Lane has the rights and obligations associated with ownership of the recorded securities.

The recorded securities transactions occurred.

All of the securities that Lane owns and all of its securities transactions have been recorded.

The securities are recorded at their fair value determined following the requirements of FASB Statement No. 115.

Realized and unrealized holding gains and losses are properly reported as earnings or other comprehensive income.

The securities are properly classified.

Disclosures about securities and securities transactions are adequate.

**Procedure**

- Confirm with the broker-dealer the name of the investee, the number of shares, whether the shares are pledged, and that Lane is the owner.
- Inspect supporting documentation such as trade confirmations or entries in the broker-dealer's monthly statements.
- Perform analytical procedures on dividends and realized and unrealized gains and losses.
- Obtain the per-share price quoted by the exchange at the balance sheet date and compare the quoted price with the price Lane used.
- Test the extension of the number of shares at the quoted price.
- Evaluate management's considerations in ensuring that the requirements of FASB Statement No. 115 were satisfied.
- Review journal entries for propriety.
- Gather evidential matter about the classification of the securities as available-for-sale.
- Read the financial statements and compare the disclosures about securities and securities transactions with the requirements of FASB Statement No. 115.



## Chapter 10

### ***Case Study of the Use of an Interest Rate Futures Contract to Hedge the Forecasted Issuance of Debt***

**10.01** In this case study, the entity has forecasted the issuance of debt and is exposed to the risk that market interest rates will change by the time the debt is issued. In order to mitigate this risk, the entity enters into a hedging strategy using an interest rate futures contract as the hedging instrument.

**10.02** A futures contract is a standardized forward contract traded on organized exchanges. Each exchange specifies the standard terms of the futures contracts it sponsors. Futures contracts are available for a wide variety of underlying instruments, including the U.S. Treasury bonds used in this case study. Some futures contracts call for settlement by physical delivery of the underlying instrument, but most contracts are closed out before the delivery date. Futures buyers, such as the entity in this case study, can close out their positions by selling a new, offsetting futures contract for the same delivery date as the one originally purchased.

**10.03** The accounting considerations portion of this case study illustrates the accounting for the entity's cash flow hedge. The auditing considerations section highlights the potential misstatements that can occur when accounting for a cash flow hedge and how various inherent risk considerations affect substantive audit procedures.

### **Accounting Considerations<sup>1</sup>**

**10.04** Taylor Enterprises (Taylor) decides on January 1, 20X0, to fund \$10,000,000 of the costs of expanding its production facilities by issuing a fixed-rate bond on June 30, 20X0. The bond will be payable ten years after issuance, with interest payable semiannually on June 30 and December 31.

**10.05** The market interest rate at which Taylor could issue a bond is based on the Treasury rate, which is the yield, or market interest rate, of U.S. Treasury bonds. On January 1, 20X0, the Treasury rate is 5 percent. Since the Treasury rate is a risk-free rate, the difference, or spread, between the Treasury rate and Taylor's market interest rate is designed to compensate the holder of the bond for the credit risk associated with lending to Taylor. FASB Statement No. 133 defines credit risk as being composed of two components—the individual obligor's creditworthiness (or risk of default) and the spread over the risk-free interest rate with respect to the hedged item's credit sector (or sector spread).

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<sup>1</sup> The case studies in chapters 10 through 14 address only the accounting and auditing implications of FASB Statement No. 133 based on the hypothetical facts presented. Accordingly, the recognition, measurement, disclosure, and presentation requirements of other accounting standards (and the auditing implications thereof) that may be pertinent to the hypothetical facts are not considered, such as FASB Statement No. 107. In addition, for simplicity, this case study ignores income tax consequences.

**10.06** Taylor's market interest rate could therefore change because of changes in the Treasury rate,<sup>2</sup> the sector spread, or Taylor's individual credit rating. To illustrate how these changes could affect Taylor's market interest rate, assume that—

- The Treasury rate increases by 100 basis points from 5 percent to 6 percent.
- The sector spread for an issuer with Taylor's credit rating increases by twenty-five basis points from fifty basis points to seventy-five basis points.
- Taylor's credit rating worsens, causing an increase of fifty basis points in its creditworthiness risk from no basis points to fifty basis points.

Taylor's market interest rate would therefore increase by 175 basis points—

- From 5.5 percent, which is the 5 percent Treasury rate plus the sector spread of fifty basis points
- To 7.25 percent, which is the 6 percent Treasury rate plus the sector spread of seventy-five basis points plus the credit downgrade of fifty basis points.

**10.07** Even though Taylor's market interest rate could change because of changes in the Treasury rate, the sector spread, or its individual credit rating, under FASB Statement No. 133, Taylor could only use hedge accounting for a hedge of the risk of changes in the—

- Treasury rate (interest rate risk).
- Sector spread and Taylor's individual credit rating together (credit risk). Changes in sector spread or changes in Taylor's individual credit rating may not be separately hedged. In this case study, the term *credit spread* is used to refer to the difference between the Treasury rate and the market interest rate.
- Treasury rate, sector spread, and individual credit rating together (interest rate risk and credit risk).

**10.08** In this case study, the Treasury rate and the credit spread change before June 30, 20X0. On January 1, 20X0, Taylor's market interest rate is 6 percent, consisting of the 5 percent Treasury rate and its credit spread of 100 basis points. Taylor believes based on available information that, while its credit spread will remain the same, the Treasury rate will increase significantly by June 30. Based on its cash flows forecast, Taylor does not want its interest payments to exceed \$600,000 annually. If the Treasury rate increases, issuing a \$10,000,000 bond with a 6 percent stated rate would enable Taylor to keep its annual interest payments at \$600,000, but it would decrease the amount of cash received from the bond. For example, if Taylor's market interest rate increases by 100 basis points from 6 percent to 7 percent, the fair value of the bond<sup>3</sup> will decrease by \$710,620 from \$10,000,000 to \$9,289,380.

**10.09** Taylor therefore decides to hedge against changes only in the Treasury rate by entering into an exchange-traded futures contract. Under the futures contract, Taylor agrees to sell a U.S. Treasury bond on a prescribed date, referred to as the *settlement date* in this case study, at the 5 percent yield in effect on January 1. Since Taylor does not own such a bond, it will be required

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<sup>2</sup> In this case study, the Treasury rate is the designated benchmark interest rate.

<sup>3</sup> In this case study, the fair value of bonds is determined by discounting cash flows under the bond using the appropriate current interest rate for the same or a similar bond. Therefore, for example, if Taylor issues a \$10,000,000 bond with a 6 percent stated rate when the market interest rate is also 6 percent, the bond's fair value is equal to its \$10,000,000 face value.

to buy one.<sup>4</sup> Taylor will close out the futures contract to coincide with the timing of the debt issuance.

**10.10** As an illustration, if the Treasury rate increases by 100 basis points and Taylor's credit spread remains the same, Taylor's market interest rate also will increase by 100 basis points. As a result of the increase in the Treasury rate, the fair value of cash flows under the U.S. Treasury bond will decrease, and Taylor will receive more from selling a U.S. Treasury bond on June 30 at a 5 percent yield than it pays to acquire it at the higher 6 percent yield in effect on June 30.<sup>5</sup> Similarly, as a result of the increase in Taylor's market interest rate to 7 percent, Taylor will receive less than the face amount of its 6 percent bond. If the face amount and payment schedule of the U.S. Treasury bond are the same as for Taylor's bond, the increase in cash from settling the futures contract at its fair value will approximate the decrease in cash from issuing its bond at a discount.<sup>6</sup>

**10.11** If the futures contract works perfectly as a hedge and there is no change in credit spread, Taylor's effective interest rate on the bond will be 6 percent.

- If the market interest rate on June 30 is higher, Taylor will issue its bond at a discount, but the additional discount accretion will be offset by earnings from an increase in the fair value of the futures contract.
- If the market interest rate on June 30 is lower, Taylor will issue its bond at a fixed rate equal to the market interest rate, rather than the higher 6 percent rate planned. However, the payment required for the decrease in the fair value of the futures contract will offset the savings in interest payments.

**10.12** This case study assumes that futures contracts like the one Taylor enters into require settlement on March 15, June 15, September 15, or December 15, and that Taylor chooses a contract that expires on September 15, 20X0, which is the first settlement date after June 30. Taylor normally would calculate the price sensitivity of the hedged item and the hedging instrument to changes in yields, generally expressed as the modified duration. (There may be differences in price sensitivity for two reasons: (a) futures contracts require periodic margin payments, while the hedged item does not; and (b) the cash flows from a U.S. Treasury bond underlying a futures contract would be expected to (apart from a coincidence) occur on different dates than the cash flows from the anticipated debt issuance.) From this, Taylor would calculate the hedge ratio and number of U.S. Treasury futures contracts required to be sold. However, for simplicity, Taylor selects an underlying U.S. Treasury bond with a \$10,000,000 face amount, which is the same amount as the \$10,000,000 bond it intends to issue. Also for simplicity, the case study assumes that there

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<sup>4</sup> As a practical matter, the futures contract will permit Taylor to settle the contract for the difference between the amount it would pay to buy a bond at the 5 percent yield in effect on January 1, 20X0, and the amount it would receive from selling the bond at the yield in effect on the settlement date.

<sup>5</sup> In this case study, the futures contract is exchange-traded, and therefore its fair value can be determined using quotes. However, if quotes were not available, the fair value of the futures contract could be estimated by subtracting the present value of cash flows under the U.S. Treasury bond discounted using the Treasury rate at the measurement date from the present value of those cash flows discounted using the rate at which the bond is to be delivered.

- If the Treasury rate has decreased, the fair value of the bond with the current Treasury rate (the purchase price) will be higher than the fair value of the bond with the settlement rate (the selling price), and the futures contract will have a negative value reported as a liability.
- If the Treasury rate has increased, the fair value of the bond with the current Treasury rate (the purchase price) will be lower than the fair value of the bond with the settlement rate (the selling price), and the futures contract will have a positive value reported as an asset.

<sup>6</sup> For simplicity, this case study ignores legal, underwriting, and other costs of issuing bonds.

are no differences in cash flow dates between the U.S. Treasury bond underlying the futures contract and the bond Taylor intends to issue. If there is a difference, to the extent that the futures contract net gain or loss does not equal the present value of the change in the bond's cash flows attributable to changes in the Treasury rate, some ineffectiveness will result and require an immediate reclassification of an amount in accumulated other comprehensive income into earnings. Note that only over-hedge amounts will be reclassified to earnings; an under-hedge will not result in such a reclassification. Therefore the change in the fair value of the futures contract will effectively offset the change in the fair value of Taylor's bond.

10.13 Following the requirements of FASB Statement No. 133, Taylor documents its hedging strategy using the following memo.

<b>Taylor</b> <b>Considerations in Designating the Futures Contract as a Hedge</b> <b>of Cash Flows Under a Bond to be Issued on June 30, 20X0</b>	
Risk management objective and nature of risk being hedged	The objective of the hedge is to ensure a certain level of cash flows under the fixed-rate bond Taylor intends to issue on June 30, 20X0. Changes in the fair value of the futures contract are expected to be highly effective in offsetting changes in the cash flows under the bond caused by changes in the Treasury rate (the designated benchmark interest rate).
Date of designation	January 1, 20X0
Hedging instrument	An exchange-traded futures contract to sell a U.S. Treasury bond at the 5% yield in effect on January 1, 20X0. The only payment required to enter into the contract is a \$100,000 initial margin deposit. <sup>7</sup>
Hedged transaction	The risk of changes in future cash flows under the ten-year, 6% fixed-rate bond Taylor intends to issue on June 30, 20X0, attributable to changes in the Treasury rate.
How hedge effectiveness will be assessed	<p>The effectiveness of the futures contract as a hedge against the risk of changes in the Treasury rate will be assessed every 90 days by dividing the change in the fair value of the futures contract by the change in the fair value of cash flows under the bond attributable to changes in the Treasury rate. The hedge will be considered to be highly effective if the result of that calculation falls within the range of 80% to 125%.</p> <p>Taylor has determined that the futures contract will be completely effective in hedging against the risk of changes in Taylor's borrowing rate that result from changes in the Treasury rate. That is because the fair value of the futures contract is only affected by changes in the Treasury rate, the notional amount equals the bond's face value, and the cash flow dates for the futures contract are the same as for the bond. The futures contract will not hedge against the risk of changes in Taylor's borrowing rate that result from changes in the sector spread or in its own creditworthiness risk, each of which is an element of credit risk; Taylor has chosen not to hedge these risks because it believes significant changes in them are unlikely.</p> <p>The hedge meets the criteria for a cash flow hedge.</p>

<sup>7</sup> For simplicity, this case study assumes that the margin account is paid or received quarterly, instead of daily.

10.14 The following table presents the changes in the fair value of cash flows under the bond (attributable to changes in the Treasury rate) that Taylor intends to issue and in the fair value of the futures contract. Note that Taylor's market interest rates would be different than the Treasury rate because credit risk is not being hedged by Taylor. The futures contract meets the requirements of FASB Statement No. 133 to be treated as a cash flow hedge.<sup>8</sup>

Date	Treasury Rate	Fair Value of Cash Flows Under 5% Bond <sup>9</sup>	Increase (Decrease) in Fair Value of Cash Flows Under 5% Bond	Fair Value of Futures Contract	Increase (Decrease) in Fair Value of Futures Contract	Income (Loss) Recognized in Other Comprehensive Income <sup>10</sup>	Income (Loss) Recognized in Earnings
1/1/X0	5.0%	\$10,000,000	\$ —	\$ —	\$ —	\$ —	\$ —
3/31/X0	6.0%	9,256,126	(743,874)	743,874	743,874	743,874	—
6/30/X0	4.0%	10,817,572	1,561,446	(817,572)	(1,561,446)	(1,561,446)	—

10.15 Assume that on June 30, Taylor decided it would rather issue a bond at par than issue a 6 percent bond at premium. Accordingly, it issued a 4.85 percent fixed-rate bond, reflecting a credit spread that changed from 100 basis points at January 1 (6 percent market interest rate – 5 percent Treasury rate) to eighty-five basis points at June 30 (4.85 percent market interest rate – 4 percent Treasury rate). For the reasons discussed in paragraph 10.12, there was no ineffectiveness in the futures contract as a hedge.

10.16 *Journal entries.* Taylor recorded the effects of the futures contract through the following journal entries.

**January 1, 20X0**

Futures contract margin account	\$100,000	
Cash		\$100,000

To record the initial margin deposit.

**March 31, 20X0**

Futures contract margin account	\$743,874	
Other comprehensive income		\$743,874

To record the increase in the fair value of the futures contract. The \$743,874 increase in the fair value of the futures contract is completely effective in hedging the expected increased cost of borrowing with a risk-free rate of 6 percent vs. 5 percent, and all of the increase in the contract's fair value is recorded as other comprehensive income. There is no ineffectiveness to be included in earnings.

<sup>8</sup> FASB Statement No. 133 also provides an example of a table that could be used to account for a cash flow hedge that is not completely effective.

<sup>9</sup> Taylor has designated changes in cash flows due to changes in the Treasury rate as its hedgeable risk. Accordingly, only changes in the fair value of the bond Taylor expects to issue that are due to changes in the Treasury rate should be considered when assessing hedge effectiveness.

<sup>10</sup> The determination of the effective and ineffective portions is discussed in the explanations of the journal entries.

**June 30, 20X0**

Other comprehensive income	\$1,561,446	
Futures contract margin account		\$1,561,446

To record the decrease in the fair value of the futures contract and adjust the loss in accumulated other comprehensive income to the cumulative effective portion of the hedge—the \$817,572 liability under the futures contract for its fair value.

Futures contract margin account	\$717,572	
Cash		\$717,572

To settle the futures contract.

Cash	\$10,000,000	
Bond		\$10,000,000

To record issuance of a 4.85 percent fixed-rate bond.

**10.17** Taylor will pay interest at 4.85 percent because the credit spread was eighty-five basis points at June 30. Because the futures contract was completely effective as a hedge, earnings while the bond is outstanding will be charged with interest at an effective rate close to 5.85 percent, which consists of the 5 percent risk-free rate Taylor effectively locked in through the futures contract and its credit spread of .85 percent. That is accomplished by amortizing the \$817,572 loss in accumulated other comprehensive income to interest expense in the same periods during which the hedged transaction affects earnings. Compounding will cause the rate to differ slightly from 5.85 percent.

**10.18** Amortizing the loss in accumulated other comprehensive income requires calculating a level effective interest rate that will maintain a level yield on the difference between the principal outstanding under the bond and the unamortized loss in accumulated other comprehensive income. While the carrying amount of the debt is not adjusted as a result of applying hedge accounting, the hedge adjustment recorded in accumulated other comprehensive income can be analogized to a discount on the debt. Extending this analogy, the accretion of accumulated other comprehensive income should be calculated using the interest method, similar to the accretion of a discount. Since principal does not change until after ten years, as the “discount” is accreted, the carrying amount of the bond increases, and therefore interest expense must increase in order to maintain a level yield.

**10.19** In this case study, the effective interest rate is 5.946351 percent. That is the interest rate required to discount future principal and interest payments under the debt to an amount at the date the bond is issued to \$9,182,428, which equals the \$10,000,000 principal less the \$817,572 loss included in accumulated other comprehensive income. Each year, amortization of the loss in accumulated other comprehensive income is the difference between interest at the stated rate and total interest expense calculated by applying the rate to the net of principal and the unamortized loss in accumulated other comprehensive income. (For example, interest expense is \$273,010 for the first six-month period, which is one-half of 5.946351 percent of the \$9,182,428 carrying amount at the issuance of the bond. Amortization of the loss in accumulated other comprehensive income is therefore the \$30,510 excess of \$273,010 over the \$242,500 interest at the stated rate.) Following this approach, at the end of the nineteenth period, the carrying amount will be \$9,946,767; amortization for the twentieth period will increase this amount by \$53,233 to \$10,000,000, the principal payment due at the end of the tenth year.

10.20 Amortization in this case study is—

Period	Cash Payment	Accumulated Other Comprehensive Income Accretion	Total Interest Expense
1	\$242,500	\$ 30,510	\$273,010
2	242,500	31,417	273,917
3	242,500	32,351	274,851
4	242,500	33,313	275,813
5	242,500	34,303	276,803
6	242,500	35,323	277,823
7	242,500	36,373	278,873
8	242,500	37,455	279,955
9	242,500	38,568	281,068
10	242,500	39,715	282,215
11	242,500	40,896	283,396
12	242,500	42,112	284,612
13	242,500	43,364	285,864
14	242,500	44,653	287,153
15	242,500	45,981	288,481
16	242,500	47,348	289,848
17	242,500	48,755	291,255
18	242,500	50,205	292,705
19	242,500	51,697	294,197
20	242,500	53,233	295,733
	Total	\$817,572	

Economically, Taylor hedged changes in the Treasury rate from 5.00 percent. To that, it had a credit spread of .85 percent, resulting in an effective yield of 5.946351 percent.

## Auditing Considerations

### Description of the Entity

10.21 Overall, Taylor's control environment is good. However, it is not experienced in derivatives strategies, and in fact this particular transaction is Taylor's first derivatives transaction.

10.22 The purchase of the futures contract was authorized by the investment committee and purchased through Taylor's broker. The investment committee formally designated the futures contract as a hedge of the exposure to variability of cash flows under the bond due to changes in the Treasury rate. Taylor's investment banker will underwrite the \$10,000,000 bond approved by the board of directors.

**10.23** Although investing in derivatives and developing hedging strategies is new for Taylor, it intends to enter into more of these transactions in the future. In anticipation of this new direction in financial management, Taylor has formalized a risk management policy developed by the investment committee and approved by the board of directors. That policy includes a description of allowable products and the approvals required for their usage.

## Summary of Accounting

**10.24** The hedging transaction is considered material. As described previously, for financial statement purposes the futures contract will be reported at its fair value. The accounting for changes in the fair value of a derivative designated as a cash flow hedge is discussed in chapter 3.

## Types of Potential Misstatements

**10.25** *Improper use of hedge accounting under FASB Statement No. 133.* Taylor might incorrectly classify the cash payment establishing the margin account as a miscellaneous asset and, in subsequent periods, neglect to adjust that amount for changes in the fair value of the futures contract. Or, management may apply hedge accounting even though it lacks the appropriate documentation. Additionally, management may incorrectly assess hedge effectiveness resulting in the application of hedge accounting when it should not be applied. (The opposite risk, that is, the risk of not applying hedge accounting when it should be applied, is not considered a misstatement risk because the use of hedge accounting is required only when management designates the derivative as a hedge.)

**10.26** The following are examples of unreasonable valuations.

- *Future debt.* In computing the fair value of a bond Taylor expects to issue, Taylor may incorrectly use a market interest rate. The rate used should be the Treasury rate.
- *Futures contract.* Errors may occur when obtaining the fair value of the futures contract. Since the futures contract is exchange-traded, this risk generally is limited to clerical errors such as transposition errors or selecting the wrong futures contract.

**10.27** *Incorrectly recording the transaction including changes in fair value.* The journal entries recording the transaction (including those entries made to record the change in the fair value of the derivative) might be incorrect.

**10.28** *Improper presentation and disclosure.* Taylor might incorrectly apply the presentation and disclosure guidance of FASB Statement No. 133.

## Inherent Risk Factors to Consider for This Transaction in Planning the Audit

**10.29** The following inherent risk factors have been identified.

- Some aspects of accounting for the transaction are complex.
- The futures contract may be difficult to identify and easy to conceal. Because management's objective in this case study is the mitigation of the cash flow variability of the benchmark interest rate risk associated with the planned future issuance of debt, it is unlikely that management would attempt to conceal the transaction. However, the



nature of this hedging transaction is such that there is risk that management could conceal the hedge designation in order to record a gain should the futures contract be in a gain position at the end of the period. Furthermore, the hedged item does not currently exist; thus, if effective, the hedge accounting is the result of what management expects to do (that is, issue a bond in the future). Consequently, the accounting depends on management's intent, and explicit, direct corroborative evidence supporting intentions does not exist.

- Taylor has designated changes in cash flows due to changes in the Treasury rate as its hedgeable risk. Accordingly, only changes in the fair value of the bond Taylor expects to issue that are due to changes in the Treasury rate should be considered when assessing hedge effectiveness. The risk here is that changes in the fair value of the entire bond instead of those due to changes in the Treasury rate would be improperly considered.
- Taylor may use certain valuation information (such as the fair value of the futures contract) provided by the investment banker who sold the futures contract and will underwrite the \$10,000,000 bond. Such relationships may impair the objectivity of these parties. For example, the underwriter stands to earn commissions from its underwriting of the future issuance of the bond. Therefore, the underwriter has an incentive to encourage Taylor to issue the bond even in the face of unfavorable economic developments from Taylor's perspective. To the extent that the valuation information that was provided by the investment banker persuades Taylor to either issue or not issue the bond, the underwriter has an interest in providing information that will make issuance look favorable.
- Credit risk related to this transaction is low because the futures contract is an exchange-traded contract. Exchange-traded futures contracts generally remove individual counterparty risk and substitute the clearing organization as the settling party. The participants in an exchange-traded futures contract typically settle changes in the value of their positions daily through the use of required margin accounts, which further reduces credit risk.

## Control Risk

**10.30** Taylor does not currently enter into derivatives transactions on a recurring basis, but envisions doing so in the future. It has established a risk management policy and designed appropriate controls over the initiation and day-to-day processing of derivatives transactions in anticipation of the increase in these types of transactions, but those controls are not placed in operation. Limited controls currently are operating and include investment committee authorization and review of all derivatives transactions. Accordingly, due to the limited nature of the controls placed in operation in relation to the relevant financial statement assertions, control risk for this transaction is assessed at the maximum.

## Timing of Procedures

**10.31** The relevant assertions associated with this transaction will be substantively tested at year end. This decision is influenced by the assessment of control risk at the maximum, the fact that this is an isolated transaction, and the design of the substantive procedures (confirmation and recomputation) as discussed below.

## Materiality

10.32 The transaction is considered material.

## Design of Procedures

10.33 The auditor defined the following objectives and related procedures for the audit of assertions about the futures contract.<sup>11</sup>

Audit Objective	Procedure
The purchase of the futures contract was properly authorized.	<ul style="list-style-type: none"> <li>● Read minutes of the investment committee noting approval to purchase the futures contract.</li> <li>● Read Taylor's risk management policy, as approved by the board of directors, and determine that the investment committee is authorized to approve the purchase of futures contracts and designate hedgeable risks.</li> </ul>
Assess the probability of the forecasted bond issuance occurring to determine that the transaction continues to constitute a hedgeable forecasted transaction in a cash flow hedge. Corroborate management's current intent to issue a \$10,000,000 ten-year, fixed-rate bond.	<ul style="list-style-type: none"> <li>● Review cash flow estimates or budgets to determine whether Taylor expects to have a business need for issuing the bond.</li> <li>● Read minutes of the board of directors noting approval of the plan to issue the bond.</li> <li>● Confirm in the management representation letter management's stated intent to issue the bond.</li> <li>● Consider whether the results of other audit procedures tend to either corroborate or conflict with management's stated intent to issue the bond.</li> </ul>
The futures contract is owned by Taylor.	<ul style="list-style-type: none"> <li>● Examine the broker's advice evidencing purchase of the futures contract in Taylor's name.</li> <li>● Trace the cash payment for the initial margin account deposit to appropriate internal accounting records.</li> </ul>
Determine that Taylor has formally designated the futures contract as a hedge of the proposed debt issuance.	<ul style="list-style-type: none"> <li>● Read the minutes of the investment committee formally designating the futures contract as a hedge of the proposed bond issuance noting the conformance of the documentation with the formal contemporaneous and ongoing documentation requirements of FASB Statement No. 133.</li> </ul>

<sup>11</sup> This case study assumes that the futures contract is the entity's first derivative and that management informed the auditor about the contract. As a practical matter, the auditor may find indications of the existence of such contracts through other audit procedures. For example, subsequent events procedures and review of minutes may lead to inquiries about the planned debt issuance. In addition, payments and receipts under the contract may be indicated by analyzing asset and liability accounts, through analytical procedures of income and expense accounts, and by examining broker statements.

**Audit Objective**

Determine that the assumptions used to compute the fair value of the “to-be-issued” bond are reasonable. Since this is a cash flow hedge, this fair value information will not be used to record any adjustment to the carrying value of the hedged item but rather will be used as an essential part of the effectiveness testing of this hedging relationship.

The fair value of the futures contract is reasonable.

Determine that Taylor has properly computed hedge effectiveness, both at inception of the hedge and on an ongoing basis.

The ending margin balance and settlements of the futures contract are properly stated.

The journal entries required to record the effects of the futures contract are proper.

Presentation is appropriate and disclosure adequate.

**Procedure**

- Confirm the designation of the futures contract as a hedge initially and at each subsequent measurement date with management.
- Confirm the Treasury rate with the investment banker.
- Recompute the fair value of the bond using the Treasury rate.
- Consider the guidance in SAS No. 73 (AU sec. 336.10 and .11) in evaluating the relationship between the investment banker and Taylor.
- Obtain market value quotes provided by a recognized exchange.
- Recompute Taylor’s calculations of hedge effectiveness using the method prescribed by management. (The method should be part of the documentation designating the hedge).
- Confirm the margin account balance and closing settlements directly with the investment banker and reconcile them to the general ledger control account.
- Review the journal entries for propriety.
- Read the financial statements and compare the presentation and disclosure with the requirements of FASB Statement No. 133.

## Chapter 11

### ***Case Study of the Use of a Put Option to Hedge an Available-for-Sale Security***

**11.01** In this case study, the entity owns 1,000,000 shares of the stock of a publicly traded company. The entity has a significant unrealized gain related to this investment and therefore is exposed to a decline in fair value of the shares. In order to hedge this exposure, the entity enters into a fair value hedge, using a put option as the hedging instrument.

**11.02** By purchasing the put option, the entity has the right to sell its shares to the writer at the strike price, which in this case study is the current trading price of \$50 per share. To obtain this right, the entity pays the writer a premium.

**11.03** The most fundamental characteristic of every option is the uneven allocation of risk and reward. The holder of the option (the entity in this case study) receives a larger potential gain than it does risk of loss. In this case study, the entity's profits on the option increase dollar for dollar as the value of the underlying stock falls below the strike price. However, if the price of the underlying stock rises above the strike price, the entity simply will not exercise its option and can lose no more than the option premium it paid the writer.

**11.04** The value of an option during its life has two components: the intrinsic value and the time value. The intrinsic value is defined<sup>1</sup> as the difference between the value of the underlying instrument and the option exercise price, if that difference is positive for the option holder. Intrinsic value is the net amount that would be realized upon immediate exercise of the option and sale of the underlying instrument. The intrinsic value can never be negative for the option holder.

**11.05** The time value is the excess of the total fair value of the option over its intrinsic value. Time value can never be negative for the holder and only decreases to zero when the option reaches its expiration date.

**11.06** The accounting considerations portion of this case study illustrates the accounting for a fair value hedge, including the documentation required at the inception of the hedge and the assessment of hedge effectiveness. The auditing considerations section demonstrates the application of the guidance contained in SAS No. 92 to a fair value hedge, using a primarily substantive approach.

## **Accounting Considerations<sup>2</sup>**

### **Description of the Transaction**

**11.07** Sternwood owns 1,000,000 shares of JKM, Inc.'s publicly traded stock. Sternwood classifies these shares as available-for-sale and accounts for

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<sup>1</sup> Although there are other definitions of the term *intrinsic value*, its use here is consistent with its use in the examples in FASB Statement No. 133.

<sup>2</sup> For simplicity, this case study ignores income tax consequences.

them in accordance with FASB Statement No. 115. The shares were acquired for \$48,000,000. As of January 1, 20X1, these shares are trading at \$50 per share, and Sternwood has an unrealized gain on the investment of \$2,000,000 (\$50,000,000 fair value at the \$50 per share fair value – \$48,000,000 cost), which is reported in accumulated other comprehensive income.

**11.08** Sternwood wants to lock in its unrealized gain. To accomplish this, it purchases a put option on the shares from First Bank for \$200,000. This option allows Sternwood to sell (or put) its 1,000,000 shares of JKM stock to First Bank at \$50 per share at December 31, 20X1.

**11.09** Sternwood designates the option as a hedge of the exposure to a decline in the fair value of its investment in JKM. All criteria for hedge accounting have been met, and the entity has documented the hedge using the following memo.

<b>Sternwood Considerations in Designating the Put Option as a Hedge of the Fair Value of an Available-for-Sale Security</b>	
Risk management objective and nature of risk being hedged	The objective of the hedge is to lock in the unrealized gain on the investment in JKM stock classified as available-for-sale. Changes in the intrinsic value of the put option are expected to be completely effective in offsetting the changes in the investment's fair value.
Date of designation	January 1, 20X1.
Hedging instrument	Put option on 1,000,000 JKM shares. The option allows Sternwood to sell its shares to First Bank on December 31, 20X1, at \$50 per share.
Hedged item	Investment in 1,000,000 shares of JKM stock.
How hedge effectiveness will be assessed	<p>Sternwood will assess the effectiveness of the hedge by comparing changes in the intrinsic value of the put option with changes in the fair value of the investment in JKM shares. Because the option provides only one-sided protection, effectiveness is required to be assessed only during those periods the put option has an intrinsic value.</p> <p>Because the critical terms of the hedging instrument match the hedged transaction, Sternwood concluded that the changes in the intrinsic value of the option will be completely effective at offsetting the changes in the fair value of its investment in the 1,000,000 shares of JKM.</p> <p>Because changes in the time value of the option have been excluded from the assessment of the hedge's effectiveness, changes in these amounts will be included in earnings during the periods they occur.</p>

**11.10** The share price and fair value of Sternwood's investment in JKM stock are as follows:

	<b>Share Price</b>	<b>Fair Value</b>
January 1, 20X1	\$50	\$50,000,000
March 31, 20X1	60	60,000,000
June 30, 20X1	45	45,000,000
September 30, 20X1	40	40,000,000
December 31, 20X1	30	30,000,000

11.11 The fair value, intrinsic value, and time value of the put option are as follows:

	(A) Fair Value	(B) Intrinsic Value	(A)-(B) Time Value
January 1, 20X1	\$ 200,000		\$200,000
March 31, 20X1	180,000		180,000
June 30, 20X1	5,150,000	\$ 5,000,000	150,000
September 30, 20X1	10,050,000	10,000,000	50,000
December 31, 20X1	20,000,000	20,000,000	

### Journal Entries

11.12 The following journal entries would be made by Sternwood at January 1, March 31, June 30, September 30, and December 31, 20X1, when the shares are sold. (For simplicity, this case study ignores the impact of commissions and other transaction costs and initial margin.)

#### January 1, 20X1

Put option	\$200,000	
Cash		\$200,000

To record the purchase of the put option through a charge to an asset.

#### March 31, 20X1

Unrealized gain/loss on put option	\$20,000	
Put option		\$20,000

To charge earnings for the reduction in the option's fair value caused by the reduction in its time value.

Investment in JKM stock	\$10,000,000	
Other comprehensive income		\$10,000,000

To credit other comprehensive income for the increase in the fair value of the investment in JKM stock. (Note that there was no change in the intrinsic value of the put option.)

#### June 30, 20X1

Unrealized gain/loss on put option	\$30,000	
Put option		\$30,000

To charge earnings for the reduction in the option's fair value caused by the reduction in its time value.

Put option	\$5,000,000	
Unrealized gain/loss on put option		\$5,000,000

To credit earnings for the increase in the put option's fair value caused by the increase in its intrinsic value.

Other comprehensive income	\$10,000,000	
Unrealized loss on the investment in JKM stock	5,000,000	
Investment in JKM stock		\$15,000,000

To record the reduction in the fair value of the investment in JKM stock. (Note that the loss charged to earnings equals the \$5,000,000 increase in the option's intrinsic value. The remainder of the loss is charged to other comprehensive income.)

### September 30, 20X1

Unrealized gain/loss on put option	\$100,000	
Put option		\$100,000

To charge earnings for the reduction in the fair value of the put option caused by the reduction in its time value.

Put option	\$5,000,000	
Unrealized gain/loss on put option		\$5,000,000

To credit earnings for the increase in the put option's fair value caused by the increase in its intrinsic value.

Unrealized loss on the investment in JKM stock	\$5,000,000	
Investment in JKM stock		\$5,000,000

To charge earnings for the reduction in the fair value of the investment in JKM stock. (Note that the entire loss is recognized in earnings because the loss is equal to the increase in the put option's intrinsic value.)

### December 31, 20X1

Unrealized gain/loss on put option	\$50,000	
Put option		\$50,000

To charge earnings for the reduction in the fair value of the put option caused by the reduction in its time value.

Put option	\$10,000,000	
Unrealized gain/loss on put option		\$10,000,000

To credit earnings for the increase in the fair value of the put option caused by the increase in its intrinsic value. (This entry would be made prior to the settlement of the put option.)

Unrealized loss on investment in JKM stock	\$10,000,000	
Investment in JKM stock		\$10,000,000

To charge earnings for the reduction in the fair value of the investment in JKM stock. (Note that the entire reduction in fair value is charged to earnings since it is equal to the increase in the put option's intrinsic value.)

Cash	\$50,000,000	
Investment in JKM stock		\$30,000,000
Put option		20,000,000

To record the receipt of \$50,000,000 cash for settlement of the put option through delivery of the JKM stock at a price of \$50 per share to First Bank.

Accumulated other comprehensive income	\$2,000,000	
Realized gain on investment in JKM stock		\$2,000,000

To reclassify unrealized gain on the JKM stock from accumulated other comprehensive income to earnings because the gain was realized through the sale of the shares to First Bank.

## Analysis

**11.13** Even though the fair value of the investment in JKM stock fell to \$30 per share, Sternwood was able to lock in a \$50 share price as a result of entering into the put option. Thus, it was able to realize the gain of \$2,000,000 (less the \$200,000 premium paid for the option).

**11.14** Changes in the intrinsic value of the put option were highly effective at offsetting changes in the fair value of Sternwood's investment in JKM stock. Thus, each change in the intrinsic value of the put option recognized in earnings was offset by an equal amount of change in the fair value of the investment in JKM stock. Accordingly, there is no ineffectiveness. In addition, the premium paid for the put option was charged to earnings as the time value portion of the put option changed.

## Auditing Considerations

### Description of the Entity

**11.15** Sternwood owns 1,000,000 shares of JKM stock and reports its investment in the stock at its \$50,000,000 fair value, which includes \$2,000,000 of unrealized gain. To lock in this gain, Sternwood purchases a put option that gives Sternwood the option of selling its 1,000,000 JKM shares at the existing market price of \$50 per share.

**11.16** Overall, Sternwood's control environment is considered to be good. However, the entity is not experienced in derivatives strategies; in fact, this particular transaction is its first derivatives/hedging transaction. Although investing in derivatives and developing hedging strategies is new for Sternwood, it has formalized a risk management policy developed by its investment committee and approved by the board of directors. That policy includes a description of allowable products and the approvals required for their usage.

**11.17** The investment committee authorized the purchase of the put option. It formally designated the put option as a hedge of the exposure to a decline in the fair value of Sternwood's investment in JKM stock. All criteria for hedge accounting have been met, and Sternwood has properly documented the hedge in accordance with FASB Statement No. 133.



## Summary of Accounting

**11.18** The put option will be reported at its fair value. Changes in the intrinsic value of the put option will be recorded in earnings and will be offset by changes in the fair value of the investment in JKM stock. Because changes in the time value of the put option have been excluded from the assessment of hedge effectiveness, they will be included in earnings in the reporting period in which they occur. When management sells the JKM stock, the amounts included in accumulated other comprehensive income pertaining to the \$2,000,000 unrealized gain on the stock will be recognized immediately in earnings.

## Types of Potential Misstatements

**11.19** *Improper use of hedge accounting under FASB Statement No. 133.* For example, management may apply hedge accounting even though the hedged exposure does not qualify for hedge accounting or the entity lacks the appropriate documentation. Additionally, management may incorrectly assess hedge effectiveness, resulting in the application of hedge accounting when it should not be applied. (Note that the opposite risk, that is, the risk of not applying hedge accounting when it should be applied, is not considered a misstatement risk because the use of hedge accounting is discretionary.) Or, gains and losses on the put option and the investment may not have been properly recorded (for example, they may have been recorded in an improper amount or the wrong accounting period).

**11.20** *Unreasonable fair value estimates.* The fair value of the put option, the hedged item, or both may be improperly determined or recorded.

**11.21** *Completeness.* All gains and losses may not have been recorded.

**11.22** *Presentation.* Presentation and disclosure may be inadequate.

## Inherent Risk Factors to Consider for This Transaction in Planning the Audit

**11.23** The following inherent risk factors have been identified.

- Accounting for the use of the put option as a fair value hedge of an available-for-sale security requires consideration of complex accounting principles with which the entity may not be familiar since this is its first derivatives transaction. This increases the inherent risk for all assertions about it.
- The put option is not exchange-traded, which increases the inherent risk for valuation assertions.

## Control Risk

**11.24** The put option is Sternwood's first derivative, and its use is Sternwood's first hedging activity. Accordingly, the auditor assessed control risk for the financial statement assertions relevant to the put option at the maximum. That assessment was based on the auditor's conclusion that it would be more effective and efficient to take a primarily substantive approach to the audit rather than to perform the procedures needed to support an assessment of control risk below the maximum.

## Timing of Procedures

**11.25** The relevant assertions associated with this transaction will be substantively tested at year end. This decision is influenced by the assessment of control risk at the maximum, the fact that this is an isolated transaction, and the design of the substantive procedures as discussed below.

## Materiality

**11.26** The transaction is considered material.

## Design of Procedures

**11.27** The auditor defined the following objectives and related procedures for the audit of assertions about the put option and the investment in JKM stock.

Audit Objective	Procedure
The put option exists and meets the definition of a derivative.	<ul style="list-style-type: none"> <li>● Confirm the terms of the put option with the counterparty.</li> <li>● Determine whether the put option has the characteristics required by FASB Statement No. 133 for a derivative.</li> </ul>
The transaction qualifies for hedge accounting.	<ul style="list-style-type: none"> <li>● Determine whether the documentation of the hedge is sufficient to meet the requirements of FASB Statement No. 133 for hedge accounting.</li> <li>● Determine whether the put option is eligible for hedge accounting.</li> <li>● Determine whether the entity is evaluating hedge effectiveness in accordance with its policy and test the assumptions used in calculating effectiveness.</li> <li>● Reevaluate whether the hedge has been effective and will continue to be effective on an ongoing basis.</li> <li>● Determine whether the put option has been adjusted for gains and losses and that such gains and losses have been recorded in earnings.</li> <li>● Determine whether Sternwood has properly discontinued hedge accounting if—               <ul style="list-style-type: none"> <li>— Any of the qualifying criteria of FASB Statement No. 133 are no longer met.</li> <li>— The put option expired or is sold, terminated, or exercised.</li> <li>— The entity removed the designation of the fair value hedge.</li> </ul> </li> </ul>

*(continued)*

**Audit Objective**

The valuation of the put option is reasonable (Alternative A).

The valuation of the put option is reasonable (Alternative B, if Alternative A is not effective).

**Procedure**

- Confirm the fair value of the put option as of the balance sheet date with the counterparty. In confirming the fair value, consider the guidance in SAS No. 73 and SAS No. 92 (AU sec. 332.38 and .39).
- Test the entity's assumptions in determining fair value.
  - a. Agree the strike price to appropriate supporting documentation, such as the broker's advice.
  - b. Evaluate the reasonableness of Sternwood's estimate of the volatility of JKM's stock price. Sternwood's estimate of the volatility should be comparable to the historical volatility of the securities over the most recent period that is commensurate with the term of the option.
  - c. Agree the current price of JKM shares that is used by Sternwood to calculate the fair value of the put option to appropriate supporting documentation (for example, agree to closing stock price as published in *The Wall Street Journal*).
  - d. Evaluate the reasonableness of Sternwood's estimate of the risk-free interest rate for the expected term of the option by agreeing the interest rate to the rate currently available on zero-coupon U.S. government issues with a remaining term equal to the term of the option.
  - e. Using the assumptions tested in steps (a) through (d), test the fair value of the option by performing step (i) or (ii):
    - (i) If the results of the model used by management appear to comply with the requirements of FASB Statement No. 133, test the reliability of the model and determine whether Sternwood's calculation of fair value appears reasonable.
    - (ii) Recompute Sternwood's estimate of the option's fair value through the use of Bloomberg calculators or other valuation software.

**Audit Objective**

The valuation of the investment in JKM stock is reasonable.

Presentation is appropriate and disclosure adequate.

**Procedure**

- Agree the fair value of the JKM securities to independent sources.<sup>3</sup>
- Read the financial statements and compare the presentation and disclosure with the requirements of FASB Statement Nos. 115 and 133.

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<sup>3</sup> If quoted market prices were not available, the auditor could recompute the fair value based on established valuation techniques, such as present value analysis and pricing models. The auditor could also determine whether the assumptions used in computing fair value represent the appropriate assumptions as of the reporting date.

## Chapter 12

### ***Case Study of Separately Accounting for a Derivative Embedded in a Bond***

**12.01** In this case study, the entity purchases convertible bonds. The terms of the conversion feature allow the holder of the bonds the option of requiring the bond issuer to settle the bonds by converting each bond to a specified number of the issuer's shares. These convertible bonds are a combination of an interest-bearing bond and a conversion option.

**12.02** Under FASB Statement No. 133, an embedded derivative, such as a conversion option, must be separated from its host contract (in this case the bonds) and accounted for separately if certain criteria are met. This case study illustrates how to apply the guidance on accounting for embedded derivatives contained in FASB Statement No. 133, including determining the fair value of the embedded derivative and the host contract. The case study also provides an example of how to apply the guidance contained in SAS No. 92 to an embedded derivative.

### **Accounting Considerations<sup>1</sup>**

#### **Description of the Transaction**

**12.03** On September 24, 20X1, Martin, Inc. purchased, as an investment, 100 of the \$1,000, 5 percent convertible bonds issued by Larson Enterprises. The bonds have a conversion option under which Martin can require Larson to settle the bonds at any time prior to their maturity by converting each bond into 26.185 shares of Larson's publicly traded equity securities. For each bond, Martin paid \$1,242.50 plus accrued interest of \$19.98, for a total price per bond of \$1,262.48. Therefore, Martin paid \$126,248 for the 100 bonds, consisting of \$124,250 for the convertible bonds and \$1,998 for accrued interest. Martin classifies the bonds as available-for-sale.<sup>2</sup>

**12.04** The convertible bonds are hybrid financial instruments that are a combination of straight, interest-bearing bonds and a conversion option. Since the option affects the value of the bonds in a manner similar to a derivative, Martin must analyze the hybrid instrument against the three criteria set out in FASB Statement No. 133.<sup>3</sup> If the bond meets all of the criteria, the option is

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<sup>1</sup> For simplicity, this case study ignores income tax consequences.

<sup>2</sup> The existence of the conversion option on Larson's stock would generally preclude Martin from classifying the bonds as held-to-maturity. As discussed in question 18 in the FASB Special Report, *A Guide to Implementation of Statement 115 on Accounting for Certain Investments in Debt and Equity Securities*, the existence and potential for exercise of the conversion option generally preclude an assertion of intent to hold the bonds to maturity.

<sup>3</sup> Since Larson's equity securities are publicly traded, they are readily convertible into cash, which is one of the characteristics required by FASB Statement No. 133 for a derivative. As discussed in FASB Statement No. 133, if the shares were not readily convertible into cash, for example because they are privately held, the option would not have the characteristics of a derivative and therefore would not be accounted for under FASB Statement No. 133.

an embedded derivative that must be accounted for separately from the straight bonds. The straight bonds are considered to be the host contracts for the embedded derivative. The following table compares the option contained in the Larson convertible bonds with the three criteria.

<b>Martin, Inc.</b> <b>Comparison of the Conversion Option in the Larson Bonds With the FASB Statement No. 133 Criteria for Separately Accounting for an Embedded Derivative</b>	
<b>Criterion</b>	<b>Analysis</b>
<i>Not clearly and closely related.</i> The economic characteristics and risks of the embedded derivative instrument are not clearly and closely related to the economic characteristics and risks of the host contract.	Following the guidance in FASB Statement No. 133, since the option is based on stock prices, it is not clearly and closely related to the straight bond.  <i>Criterion is met.</i>
<i>Accounting for the hybrid instrument.</i> The hybrid instrument that embodies both the embedded derivative instrument and the host contract is not remeasured at fair value under otherwise applicable generally accepted accounting principles with changes in fair value reported in earnings as they occur.	Martin classifies the bonds as available-for-sale under FASB Statement No. 115. Accordingly, although the bonds will be remeasured at fair value, the changes in their fair value will be reported in other comprehensive income rather than in earnings. <sup>4</sup>  <i>Criterion is met.</i>
<i>The embedded instrument is a derivative.</i> A separate instrument with the same terms as the embedded instrument meets the definition of a derivative subject to the requirements of FASB Statement No. 133.	A conversion option would be a derivative subject to the requirements of FASB Statement No. 133.  <i>Criterion is met.</i>

Because all three criteria are met, Martin should account for the option separately from the straight bond.

## Accounting for the Initial Purchase

**12.05** Following is a summary of Martin's allocation of the price of the convertible bonds between the option and the straight bonds at the purchase date.

<sup>4</sup> If Martin instead classified the bonds as trading under FASB Statement No. 115, the bonds would be remeasured at fair value with changes in fair value reported in earnings as they occur. Accordingly, this criterion would not be met, and FASB Statement No. 133 would prohibit accounting for the option separately from the bond.

		Price per Bond	× 100 bonds	Total
	Purchase of the hybrid instrument	\$1,242.50	× 100	\$124,250
Minus	Fair value of the option  A specialist engaged by Martin estimated the fair value of the option at \$22.3505 per share using a binomial option-pricing model. <sup>5</sup> Each bond is convertible into 26.185 shares of Larson's common stock, so the total fair value of the embedded derivative is \$585.25 per bond (\$22.3505 per share × 26.185 shares per bond).	\$ 585.25	× 100	\$ 58,525
<b>Equals</b>	Fair value of the straight bond <sup>6</sup>	\$ 657.25	× 100	\$ 65,725

**12.06** To check the reasonableness of its estimate of the option's fair value, Martin imputed the yield to maturity (YTM) on the straight bonds. Assuming that the bonds have 8 years and 2 months to maturity, the imputed YTM on them is 12.54 percent. If Larson had straight bonds outstanding, Martin could compare the imputed YTM with the YTM of those bonds. However, Larson has no straight bonds outstanding, so Martin compared the imputed YTM to the YTM on straight bonds of similar credit quality (that is, B-rated), which is approximately 12.5 percent to 13 percent. Therefore, Martin concluded that the allocation of the purchase price between the option and the straight bonds is reasonable.

**12.07** The entry Martin used to record the purchase of the bonds on September 24, 20X1 is—

Investment in conversion option on Larson stock	\$58,525	
Investment in Larson bonds	65,725 <sup>7</sup>	
Accrued interest receivable	1,998	
Cash		\$126,248

<sup>5</sup> In this case study, all the information necessary to measure the option is readily available from published sources. If Martin could not reliably measure the embedded derivative, the entire hybrid instrument would have to be measured at fair value with gain or loss recognized in earnings. In addition, FASB Statement No. 133 would prohibit Martin from designating the instrument as a hedging instrument.

<sup>6</sup> This with-and-without method for estimating the fair value of the straight bonds involves subtracting the fair value of the option from the fair value of the hybrid instrument. Under an alternative method—the relative fair value method—Martin would separately estimate the fair value of the option and the straight bonds and use those fair values to allocate the fair value of the hybrid instruments proportionally. Statement 133 Implementation Issue No. B6, "Embedded Derivatives: Allocating the Basis of a Hybrid Instrument to the Host Contract and the Embedded Derivative," notes that the with-and-without method is the appropriate method for separating hybrid instruments into their components in accordance with FASB Statement No. 133. In addition, it notes that the total of the fair values of each of the two components should not exceed the fair value of the hybrid instrument.

<sup>7</sup> Recording the investment in the bonds at their fair value of \$65,725 creates a \$34,275 discount from the \$100,000 principal that should be amortized to interest income over the life of the bonds using the interest method.

## Subsequent Accounting

**12.08** Martin will accrete the basis of the bonds to \$100,000 by their maturity date through credits to interest income. Unrealized appreciation in the bonds is the difference between their fair value and the bonds' principal less unamortized discount. Whenever it issues financial statements, Martin will estimate the fair values of the hybrid instrument and the option, subtract the two to determine the estimated fair value of the straight bonds, and recognize changes in the unrealized appreciation of the—

- Option in earnings (assuming it is not designated in a qualifying hedging relationship).
- Straight bonds in other comprehensive income.

**12.09** For example, assume that at the first measurement date after Martin purchased the bonds, using the with-and-without method used at the purchase date, Martin estimated the fair value of the straight bonds as follows.

- Based on quotes from dealers, the fair value of the hybrid instrument has increased by \$15,750 from \$124,250 to \$140,000.
- A specialist engaged by Martin estimated that the fair value of the option has increased by \$6,475 from \$58,525 to \$65,000.
- The fair value of the straight bonds therefore increased by \$9,275 from \$65,725 to \$75,000.

In addition, as of the first measurement date—

- The discount on the bonds has decreased by \$3,500 from \$34,275 to \$30,775.
- Interest of \$4,998 was received, of which \$1,998 was for the accrual at the date the bonds were purchased. The remaining \$3,000 receipt relates to the current period.
- Of the \$9,275 total increase in the fair value of the straight bonds, \$3,500 is recorded as discount amortization, with the remaining \$5,775 recorded as other comprehensive income. Total interest income recognized is \$6,500, consisting of the \$3,000 realized and the \$3,500 discount amortization. Based on annualized calculations, Martin concluded that the implicit yield is consistent with its initial YTM calculations.

**12.10** Martin would make the following entry.

Cash	\$4,998	
Investment in conversion option on Larson stock	6,475	
Investment in Larson bonds	9,275	
Accrued interest receivable		\$1,998
Interest income		6,500
Earnings from unrealized appreciation		6,475
Other comprehensive income from unrealized appreciation		5,775

## Auditing Considerations

### Description of the Entity

**12.11** Although Martin has invested in securities in the past, it has not invested in a security with a feature that constitutes an embedded derivative.



However, Martin's board of directors exercises proper oversight and authorization of all investing activities. In regards to the convertible bond investment, the board took an active role in understanding the risks of the investment, how it was priced, and ultimately, approving the transaction.

**12.12** Martin also has other characteristics of a strong control environment.

- Management has high integrity and ethical values.
- Management philosophy and operating style are commensurate with the demands and needs of a well-regarded business organization.
- Management carefully assigns authority and responsibility to appropriate personnel.
- Human resources policies and procedures are designed in a way that the most qualified individuals are attracted to the organization, hired, trained, rewarded, and retained.

The bonds are held and serviced by a well-known bank with an investment department that is widely respected.

## Summary of Accounting

**12.13** Under FASB Statement No. 133, the convertible bonds are hybrid instruments that should be separated into two components—straight, interest-bearing bonds and a conversion option. Each component should be accounted for separately, with the bonds (the host contract) accounted for as available-for-sale securities under FASB Statement No. 115 and the option accounted for as an embedded derivative under FASB Statement No. 133. Martin estimates the fair value of the straight bonds by subtracting the fair value of the embedded option from the fair value of the hybrid instrument.

## Types of Potential Misstatements

**12.14** There could be departures from the measurement and disclosure requirements of FASB Statement No. 133 for the embedded derivative instrument, such as—

- A failure to identify the option and account for it separately from the straight bond.
- Errors in determining the fair values of the components when allocating the purchase price and at subsequent measurement dates.
- Errors in accounting for changes in fair value.
- Inadequate presentation and disclosure in the financial statements.

In addition, there is the risk of departures from the measurement and disclosure requirements of FASB Statement No. 115 for the straight bonds.

## Inherent Risk Factors to Consider for This Transaction in Planning the Audit

**12.15** The risk factors the auditor considered are—

- The option may not be identified since it is a feature of the convertible bonds.
- Due to the lack of experience of Martin's accounting personnel with this type of transaction, the option may not be accounted for separately from the straight bonds.
- Estimating the fair value of the option requires judgment in applying an option-pricing model and determining the underlying assumptions.

## Control Risk

**12.16** Martin's investing department has a history of investing in debt and equity securities. Controls over the department's activities include—

- Segregation of duties between purchase and sale transaction authorization, bookkeeping, and custody.
- Reasonably good management oversight.
- Supervisory personnel in the department review ongoing fair value calculations prepared internally and provided by third parties, market-to-market adjustments, and related journal entries.

**12.17** However, the purchase of the convertible bonds is the first transaction of this nature for Martin. Certain risks associated with accounting for this instrument (for example, the identification of and separate accounting for the embedded derivative and use of the binomial option-pricing model) are not addressed by Martin's existing controls. In addition, while some policies have been put in place to monitor the status of the convertible bonds, the policies have not been functioning long enough to determine their effectiveness. For these reasons, control risk is assessed at the maximum.

## Timing of Procedures

**12.18** The relevant assertions associated with this transaction will be substantively tested at year end. This decision is influenced by the assessment of control risk at the maximum, the fact that this is an isolated transaction, and the design of the substantive procedures as discussed below.

## Materiality

**12.19** The convertible bonds are considered to be material to the financial statements.

## Design of Procedures

**12.20** The auditor defined the following objectives and related procedures for the audit of assertions about the convertible bonds.<sup>8</sup>

<u>Audit Objective</u>	<u>Procedure</u>
The hybrid instrument was purchased during the reporting period and exists at the end of the reporting period.	<ul style="list-style-type: none"> <li>● Examine the broker's advice for the purchase and Martin's canceled check or other evidence of Martin's cash disbursement.</li> <li>● At year end, confirm existence, rights and obligations, and the description of the convertible bonds with the custodian bank that serves as safekeeping agent.</li> </ul>
The hybrid instrument was executed according to management's authorizations.	<ul style="list-style-type: none"> <li>● Compare the terms of the convertible bonds with the investment guidelines approved by the board of directors.</li> <li>● Examine signed authorization by the chief financial officer.</li> </ul>

<sup>8</sup> In this case study, the entity properly accounted for the embedded derivative. However, if the entity had not separately accounted for the embedded derivative, the auditor could have detected it by reading the agreements supporting the bonds.

**Audit Objective**

The straight bonds and the option were properly accounted for separately.

Both the host instrument and the option are measured using appropriate fair values.

Interest income has been properly recorded.

Presentation is appropriate and disclosure adequate.

**Procedure**

- Read the underlying agreement and compare its provisions to the separation criteria prescribed by FASB Statement No. 133.
- Compare the fair values of the convertible bonds and similar straight bonds to quoted prices published in *The Wall Street Journal*.
- Ensure that total fair value of the separate components does not exceed the fair value of the convertible bonds.
- Test the fair value calculation of the option by one of the following:
  - Testing management's calculation and underlying assumptions
  - Reperforming the calculation
  - Engaging a specialist to recompute the value, in accordance with the guidance provided in SAS No. 73
- Perform analytical procedures to test the reasonableness of interest income, including amortization of the original discount.
- Compare the presentation and disclosure with the requirements of FASB Statement Nos. 115 and 133.

## Chapter 13

### ***Case Study of the Use of an Interest Rate Swap to Hedge Existing Debt***

**13.01** In this case study, the entity has issued a fixed-rate bond and is exposed to the risk that changes in the benchmark interest rate will change the bond's fair value. In order to mitigate this risk, the entity enters into an interest rate swap, which effectively converts the fixed-rate liability into a variable-rate liability.

**13.02** Under FASB Statement No. 133, the change in the fair value of a derivative designated as a fair value hedge is recognized in earnings together with the change in the fair value of the hedged item that is attributable to the risk being hedged. In this case study, the change in the fair value of the interest rate swap will be offset by the change in the fair value of the obligation under the bond that is attributable to changes in the benchmark interest rate. The changes have opposite effects on earnings. For example, if the change in the fair value of the obligation under the bond from a change in the benchmark interest rate creates a gain, the change in the fair value of the swap will create a loss.

**13.03** The hedging instrument in this case study is an interest rate swap. Swaps are contracts to exchange, for a period of time, the investment performance of one underlying instrument for the investment performance of another instrument without exchanging the instruments themselves. The interest rate swap used in this case study involves the swap of interest at a variable rate based on a designated benchmark interest rate (in this case study ninety-day LIBOR) times a notional principal amount for interest at a fixed rate times that same notional principal amount.

**13.04** Under the agreement in this case study, the entity effectively pays interest under the swap at a variable rate and receives interest under the swap at a fixed rate (although the entity actually pays or receives only the net amount under the swap). The notional amount of the swap is the same as the principal outstanding under the entity's bond, and the fixed rate received under the swap is the same as the bond's rate. Accordingly, if the hedge works perfectly, the amount of fixed-rate interest received under the swap equals the amount of interest paid on the bond, and the net amount of interest paid equals the interest paid under the swap at the variable rate. The swap therefore enables the entity to pay a variable rate of interest on the amount of principal outstanding under the bond, thus effectively converting the bond from a fixed-rate to a variable-rate instrument.

**13.05** The accounting considerations section of this case study illustrates accounting for a fair value hedge when the hedging instrument is an interest rate swap. As described in chapter 3, when certain conditions are met, the entity may assume that an interest rate swap will be highly effective in hedging interest rate risk and may use the shortcut method to account for the hedging activity. In this case study, those conditions are not met, so the example demonstrates the accounting entries that should be made when the shortcut method is not available. The auditing considerations portion of the case study illustrates the application of the guidance contained in SAS No. 92.

## Accounting Considerations<sup>1</sup>

### Description of the Transaction

**13.06** JLM manufactures windows and doors for residential sale and is an SEC registrant that operates under a fiscal year end of December 31. JLM has experienced a tremendous growth rate during the past two years. As a result, it has entered into an expansion and equipment upgrade project at its plant. In order to keep up with demands, JLM has increased its workforce by 25 percent.

**13.07** On January 1, 20X1, JLM issued a five-year, \$1,000,000 BB-rated bond obligation. The interest rate on the bond obligation was fixed at 8 percent, payable on a quarterly basis. On February 1, 20X1, to hedge its exposure to changes in LIBOR (that is, the designated benchmark interest rate risk being hedged), JLM entered into a five-year interest rate swap with a notional amount of \$1,000,000 to receive a fixed rate of 8 percent and pay a variable rate equal to ninety-day LIBOR (at the end of each quarter) plus 2 percent, payable on a quarterly basis with the first payment due March 31, 20X1.

### Accounting for the Transaction

**13.08** In order to meet the criteria for hedge accounting, the hedge must be highly effective. As discussed in chapter 3, when certain conditions are met, the entity may assume that an interest rate swap will be completely effective in hedging interest rate risk. In that situation, the entity may elect to use the shortcut method discussed in FASB Statement No. 133, thereby avoiding the need to formally assess hedging effectiveness at inception and on a continuing basis. Exhibit 3-5 summarizes the conditions that must be met in order to qualify to use the shortcut method. In this case study, one of those conditions is not met because the interest rate swap matures one month later than the bond obligation.

**13.09** Because the expiration date of the interest rate swap is different than the maturity date of the debt obligation, fluctuations in the benchmark interest rate may have varying effects on the fair values of the bond obligation and interest rate swap. Accordingly, JLM may not assume the changes in fair value of the interest rate swap are, and will continue to be, completely effective at offsetting the changes in fair value of the bond obligation attributable to changes in the benchmark interest rate.

**13.10** JLM assessed hedge effectiveness<sup>2</sup> by comparing the change in the fair value of the interest rate swap to the portion of the change in the fair value of the bond obligation attributable to changes in the benchmark interest rate.

- The basis adjustments recognized in earnings related to the bond obligation should be equal to the changes in the fair value of the bond obligation attributable to changes in the benchmark interest rate.<sup>3</sup>
- The interest rate swap was issued at the market rate on February 1, 20X1; therefore, no cash was exchanged at inception of the contract, and no entries related to the time value of money were required.

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<sup>1</sup> For simplicity, this case study ignores income tax consequences.

<sup>2</sup> Chapter 3 discusses various methods that may be used to assess hedge effectiveness.

<sup>3</sup> In calculating the change in the hedged item's fair value attributable to changes in the benchmark interest rate, FASB Statement No. 133 requires that the estimated cash flows used in calculating fair value be based on all of the contractual cash flows of the entire hedged item.

- All of the hedge accounting criteria contained in FASB Statement No. 133 were met. Hedge effectiveness was achieved at the inception of the contract.
- The bond's 8 percent stated interest rate is the market rate on January 1, 20X1, when the bond was issued. The benchmark interest rate on February 1, 20X1 was 5 percent.
- During 20X1, the fair values of the interest rate swap and JLM's bond obligation (after cash settlements) excluding current period swap accruals and interest accruals were—

	<u>February 1</u>	<u>March 31</u>	<u>June 30</u>
Interest rate swap	\$ —	\$ (20,000)	\$ (35,000)
JLM bond obligation	1,005,000	980,000	965,000
Change in fair value of interest rate swap	—	(20,000)	(15,000)
Change in fair value of JLM bond obligation	—	25,000	15,000

- LIBOR plus 2 percent equaled 8.25 percent and 8.50 percent at March 31 and June 30, 20X1, respectively.

## Journal Entries

13.11 The journal entries JLM made are—

### February 1, 20X1

JLM made a memorandum entry documenting the existence of the hedging relationship. The financial records of JLM were not otherwise impacted as of this date because the interest rate swap was issued at the market rate, and therefore, no cash changed hands.

### March 31, 20X1

Interest expense	\$20,000	
Cash		\$20,000

To record interest expense on the bond obligation— $(\$1,000,000 \times 8.00\%) \times 3/12 = \$20,000$ .

Interest expense	\$417	
Cash		\$417

To record the net cash payment on the interest rate swap as an increase in interest expense— $(\$1,000,000 \times 8\%) \times 2/12 = \$13,333$  received] less  $(\$1,000,000 \times 8.25\%) \times 2/12 = \$13,750$  paid].

Unrealized loss on interest rate swap	\$20,000	
Obligation under interest rate swap		\$20,000

To record the reduction in the fair value of the interest rate swap as a liability, with an offsetting charge to earnings.

Bond obligation	\$25,000	
Unrealized gain on bond obligation		\$25,000

To record the reduction in the fair value of the bond obligation due to change in the benchmark interest rate, with an offsetting credit to earnings.

### June 30, 20X1

Interest expense	\$20,000	
Cash		\$20,000

To record interest expense on the bond obligation— $(\$1,000,000 \times 8.00\%) \times 3/12 = \$20,000$ .

Interest expense	\$1,250	
Cash		\$1,250

To record the net cash payment on the interest rate swap as an increase in interest expense— $(\$1,000,000 \times 8\%) \times 3/12 = \$20,000$  received] less  $(\$1,000,000 \times 8.5\%) \times 3/12 = \$21,250$  paid).

Unrealized loss on interest rate swap	\$15,000	
Obligation under interest rate swap		\$15,000

To record the increase in the fair value of the liability under the swap agreement, with an offsetting charge to earnings.

Bond obligation	\$15,000	
Unrealized gain on bond obligation		\$15,000

To record the reduction in the fair value of the bond obligation due to change in the benchmark interest rate, with an offsetting credit to earnings.

## Observations

**13.12** JLM converted its \$1,000,000 bond obligation from a fixed-rate to a variable-rate obligation as a result of entering into the interest rate swap. For example, interest expense for the quarter ended June 30, 20X1, was \$21,250, consisting of \$20,000 paid under the bond plus \$1,250 paid under the swap. This equals interest on the bond at the variable rate of 8.5 percent ( $\$1,000,000 \times 8.5 \text{ percent} \times 3/12 = \$21,250$ ). Due to the fact that the benchmark interest rate increased during the first five months of the hedging relationship, the fair value of the interest rate swap decreased, resulting in JLM making net interest cash payments on the settlement dates.

**13.13** The fair value of the bond obligation decreased as a result of the increase in the benchmark interest rate. The decrease in the fair value of the bond created unrealized gain that was partially offset by the unrealized loss from the decrease in the fair value of the swap (which resulted in recognizing a liability). The fair value change in the bond obligation was compared with the

change in the fair value of the interest rate swap to determine hedge effectiveness (that is, within 80 percent to 125 percent of each other, as described in chapter 3 for the dollar-offset method). Once determined, the change in the fair value of the bond obligation attributable to changes in the benchmark interest rate was recognized in earnings as an offset to the change in fair value of the interest rate swap.

**13.14** The results were that at March 31 and June 30, the changes in fair value of the interest rate swap were highly effective in offsetting the changes in fair value of the bond obligation attributable to changes in the benchmark interest rate. Furthermore, the hedge ineffectiveness (that is, \$5,000 at March 31) was recognized currently in earnings.

## Auditing Considerations

### Description of the Entity

**13.15** Key factors in assessing JLM's control environment are—

- JLM's management and board of directors instill high integrity and ethical values throughout all aspects of the entity.
- JLM has in place a corporate compliance program specifically prohibiting fraud against the entity, which states the penalties for fraud and requires employees to report fraud. In addition, a process exists to identify high-risk areas of potential fraud exposure for the entity.
- JLM has in place a quality information system, which provides system-generated information that gives management the ability to make appropriate decisions in managing and controlling the entity's activities and to prepare reliable financial reports.
- The board of directors are independent from management and hold frequent, timely meetings with chief financial and accounting officers, internal auditors and external auditors.
- Management provides sufficient, timely information to allow monitoring of management's financing objectives and strategies and JLM's financial position and operating results.
- Management consults with the board of directors on all business risks. Such business risks are accepted only after the board of director's study and approval. The board of directors approves all transactions that involve derivatives.
- JLM's organizational structure is appropriate to the entity's size and activities and has the ability to provide information appropriate to manage the entity's activities. The knowledge and experience of key managers are appropriate to their responsibilities.
- Assignment of responsibility and delegation of authority are appropriate for the entity, given its size and the nature and complexity of activities. Authority has been delegated to deal with organizational goals and objectives, operating functions, and regulatory requirements, including responsibility for information systems and authorization for changes.
- JLM's investing and financing activities are monitored closely by the board of directors.
- Management and the board of directors have a high commitment to competence when hiring employees. The investing and financing function is staffed with individuals who are knowledgeable about accounting for derivatives.



**13.16** Although the volume of derivatives transactions is low, the entity has established controls over them.

- Overall, controls over financial reporting of derivatives transactions adequately provide segregation of duties and management oversight.
- JLM has in place written policies regarding derivatives transactions, which were approved by the board of directors.
- The board of directors approves all derivatives transactions.
- Controls are in place to ensure that derivatives designated as hedges meet the criteria for hedge accounting, both at inception and on an ongoing basis.
- JLM's chief financial officer prepares an analysis for review by the board of directors that identifies—
  - The objective of the hedge and the strategy for accomplishing the objective.
  - The nature of the risk being hedged.
  - The derivative hedging instrument.
  - The hedged item.
  - How the entity will assess hedge effectiveness.
- JLM's investing and financing function maintains proper segregation of duties between dealing (committing JLM to the transaction), settlement (initiating cash payments and accepting cash receipts), and accounting (recording of all transactions and the valuation of the derivative).
- The board has approved a list of top-tier investment brokers that management may utilize for investment services.
- JLM has put in place controls and procedures for the prevention or detection of errors, including the following.
  - Accounting entries for derivatives transactions are reviewed by senior management of the investing and financing function and subject to periodic review by the chief financial officer.
  - Fair values are obtained from a broker-dealer and reviewed on a monthly basis.
  - Adjustments to securities general ledger accounts are reviewed and approved by the controller.

## Summary of Accounting

**13.17** Since no cash is required to enter into the interest rate swap, no entry is required at its inception. The swap should subsequently be adjusted to its fair value. Since the swap is designated as a fair value hedge, changes in its fair value should be recognized in earnings. In addition, changes in the fair value of the bond obligation due to changes in the benchmark interest rate should be recognized in earnings. The basis of the bond obligation should be adjusted accordingly.

## Types of Potential Misstatements

**13.18** The types of potential misstatements are—

- Failure to identify the swap.
- Failure to properly document the hedge and the expectation of hedge effectiveness.

- The hedge does not remain highly effective on an ongoing basis, so that hedge accounting does not continue to be appropriate.
- The assessment of hedge effectiveness is not consistent with the risk management strategy documented for the particular hedging relationship.
- JLM does not assess hedge effectiveness for similar hedging strategies in a similar manner, and such differences are not documented.
- Incorrect determination of the fair value of the swap and the bonds.
- Incorrect computation and recording of interest and accrued interest on the bonds.
- Inadequate financial statement presentation and disclosure.

### **Inherent Risk Factors to Consider for This Transaction in Planning the Audit**

**13.19** The inherent risk factors are—

- Accounting for this transaction is not complex, however, due to the implementation of FASB Statement No. 133, accounting for this hedge has changed.
- This transaction requires no initial cash outlay, and therefore detection of the derivative may be difficult (although it is unlikely that management would attempt to conceal the transaction).
- Management does not have a valuation model capable of valuing the interest rate swap and relies on the broker-dealer who arranged the transaction for the valuation of the swap.
- Credit risk related to the swap is moderate and is primarily related to the risk of nonperformance by the counterparty.

### **Control Risk**

**13.20** Control risk has been assessed at the maximum, and accordingly a substantive approach will be taken when auditing JLM's derivatives transactions. Although JLM has put in place adequate controls over its derivatives, due to the limited number of derivatives transactions it has entered into, the auditor deems a substantive approach more efficient and effective.

### **Timing of Procedures**

**13.21** Based on the assessment of control risk at the maximum and JLM's inexperience in applying FASB Statement No. 133, the relevant assertions associated with this transaction will be substantively tested at year end.

### **Materiality**

**13.22** The transaction is considered material.

### **Design of the Procedures**

**13.23** The auditor defined the following objectives and related procedures for the audit of assertions about the interest rate swap.

Audit Objective	Procedure
All derivatives JLM has entered into are reported in its statement of financial position.	<ul style="list-style-type: none"> <li>● Read minutes of the board of directors for approval of derivatives transactions.</li> <li>● Confirm at year end the existence, rights and obligations, and description of the swap with the broker-dealer.</li> </ul>
Derivatives transactions are approved in accordance with JLM's investment policy.	<ul style="list-style-type: none"> <li>● Examine broker-dealer advices evidencing purchase/issuance in JLM's name.</li> <li>● Read JLM's investment policy and compare the interest rate swap to the policy to determine if the swap's terms are within the policy's guidelines.</li> <li>● Read minutes of the board of directors to determine if approval to enter into the swap was obtained.</li> </ul>
The fair values of the swap and the bond are reasonable.	<ul style="list-style-type: none"> <li>● Obtain an understanding and evaluate the relationship between the broker-dealer and JLM.</li> <li>● Obtain an understanding of the methodology behind the broker-dealer's valuation. Alternatively, use a valuation consultant to assist in evaluating the reasonableness of the estimate of fair value, taking into consideration the requirements of SAS No. 73.</li> </ul>
The designation of the interest rate swap as a hedge meets the applicable criteria for hedge accounting at inception and ongoing, including the documentation requirement.	<ul style="list-style-type: none"> <li>● Read the Board of Directors minutes that document the formal designation of the swap as a hedge of the fair value of the bond obligation.</li> <li>● Confirm (in the management representation letter) the designation of the swap as a hedge at the date of inception and each subsequent measurement date.</li> <li>● Examine documentation that supports the designation, documentation, and risk management requirements of FASB Statement No. 133.</li> <li>● Recompute JLM's calculation of hedge effectiveness using the methodology prescribed by management, noting whether the hedge effectiveness is assessed in a similar manner to other hedging strategies of JLM.</li> <li>● Read board of directors minutes for documentation of the board's periodic review of hedging effectiveness.</li> </ul>

**Audit Objective**

The journal entries required to record the effect of the interest rate swap are appropriate.

Presentation is appropriate and disclosure adequate.

**Procedure**

- Review journal entries in relation to supporting documentation, including broker-dealer advices and cancelled checks for interest payments made on the bond obligation and interest rate swap.
- Read the financial statements and compare the presentation and disclosure with the requirements of FASB Statement No. 133.

## Chapter 14

# Case Study of the Use of a Foreign-Currency Put Option to Hedge a Forecasted Sale Denominated in a Foreign Currency

**14.01** In this case study, the entity has forecasted a foreign-currency-denominated sale during the upcoming period and is exposed to the risk that the foreign currency exchange rate will change by the time the sale occurs. To manage this risk, the entity enters into a foreign currency cash flow hedge using a foreign-currency put option.

**14.02** By purchasing the put option, the entity has the right to sell foreign currency to the writer at the spot price, which in this case study is the current exchange rate. To obtain this right, the entity pays the writer a premium.

**14.03** The most fundamental characteristic of every option is the uneven allocation of risk and reward. The holder of the option (the entity in this case study) receives a larger potential gain than it does risk of loss. In this case study, the entity's profits on the option increase as the value of the foreign currency falls relative to the functional currency (U.S. dollars). However, if the value of the foreign currency rises relative to the functional currency, the entity simply will not exercise its option and can lose no more than the option premium it paid the writer.

**14.04** The value of an option during its life has two components: the intrinsic value and the time value. The intrinsic value is defined<sup>1</sup> as the difference between the underlying spot price and the option exercise price (the strike rate in this case study), if that difference is positive for the option holder. Intrinsic value is the net amount that would be realized upon immediate exercise of the option and sale of the underlying instrument (foreign currency in this case study). The intrinsic value can never be negative for the option holder.

**14.05** The time value is the excess of the total fair value of the option over its intrinsic value. Time value can never be negative for the holder and only decreases to zero when the option reaches its expiration date.

**14.06** The accounting considerations section of this case study illustrates the accounting for the cash flow hedge of a forecasted foreign-currency-denominated transaction, including the requirement that the forecasted transaction be probable. The auditing considerations section illustrates an audit approach where control risk is assessed below the maximum for certain assertions.

## Accounting Considerations<sup>2</sup>

### Description of the Transaction

**14.07** Austin-Jhanes is a U.S. manufacturing (and reporting) entity with sales to foreign purchasers. Its forecasted sales are denominated in foreign

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<sup>1</sup> Although there are other definitions of the term *intrinsic value*, its use here is consistent with its use in the examples in FASB Statement No. 133.

<sup>2</sup> For simplicity, this case study ignores income tax consequences.

currency (FC) but do not represent firm commitments. As of September 30, 20X1, Austin-Jhanes forecasts that a specific foreign-currency sale of FC 10,000,000 will occur on March 31, 20X2. At the current spot rate of 2 FC/1 U.S.\$, this expected sale equals \$5,000,000. Austin-Jhanes' historical experience with the foreign customer for the forecasted sale indicates that the sale is probable. Management is concerned that between September 30, 20X1, and March 31, 20X2, the foreign currency will weaken relative to the dollar.

14.08 Pursuant to its foreign-exchange risk-management policy, Austin-Jhanes manages its currency risk by purchasing a foreign-currency put option. It considers this transaction to be a cash flow hedge of a foreign-currency-denominated transaction that is in accordance with FASB Statement No. 133. The terms of the purchased option are as follows:

Contract amount	FC 10,000,000
Expiration date	March 31, 20X2
Strike exchange rate (that is, the contract rate)	2 FC / 1 U.S.\$
Spot exchange rate	2 FC / 1 U.S.\$
Premium	\$20,000

14.09 The option is purchased at the money (that is, at the spot rate). Therefore, the premium on September 30, 20X1, reflects the option's time value only. The option is designated as a hedge of the forecasted sale, and management expects that, at the hedge's inception and through the period until the forecasted sale, the hedge will be highly effective. Accordingly, management expects that cash flows received on the exercised option will offset foreign-exchange losses on the cash sale, thereby assuring net U.S. dollar receipts of \$5,000,000 (excluding the put option premium) on March 31, 20X2.

14.10 Austin-Jhanes decides to assess effectiveness on the basis of the option's intrinsic value, which it defines as the value of the option that reflects the positive difference between the spot exchange rate and the strike exchange rate. Because changes in the time value of the option have been excluded from the assessment of the hedge's effectiveness, changes in these amounts will be included in earnings during the periods they occur.

14.11 During the period, the foreign currency weakened relative to the dollar. The spot rates for calculating the fair value of the option are as follows:

	<u>Contract Rate</u>	<u>Spot Rate</u>
September 30, 20X1	2.00	2.00
December 31, 20X1	2.00	2.10
March 31, 20X2	2.00	2.30

14.12 The fair value, intrinsic value, and time value of the put option are as follows:

	(A) <sup>3</sup> Fair Value	(B) <sup>4</sup> Intrinsic Value	(A)–(B) Time Value
September 30, 20X1	\$ 20,000	\$ —	\$20,000
December 31, 20X1	\$248,095	\$238,095 <sup>5</sup>	\$10,000
March 31, 20X2	\$652,174	\$652,174 <sup>6</sup>	\$ — <sup>7</sup>

14.13 Management used that information to prepare a hedge-effective analysis as follows:

Date	Cumulative Change in the Option's Intrinsic Value	Cumulative Change in Expected Cash Flows Based on Changes in the FC Spot Rate	Effectiveness Ratio	
			For the Period	Cumulative
12/31/X1	\$238,095	\$(238,095)	1.00	1.00
3/31/X2	\$652,174	\$(652,174)	1.00	1.00

Austin-Jhanes has determined that the hedging relationship between the option contract and the forecasted sales proceeds is highly effective in achieving the offset in changes of cash flows due to changes in foreign currency exchange rates. Management has formally documented the hedging relationship as well as its objectives for entering into the hedge.

## Analysis

14.14 Austin-Jhanes' forecasted sale on March 31, 20X2, is considered to be a forecasted transaction. A derivative that hedges the foreign-currency exposure to the variability of cash flows associated with a forecasted transaction is a foreign-currency cash flow hedge, provided that it meets the eligibility requirements of FASB Statement No. 133. The use of an option contract to offset a loss qualifies for cash flow hedge accounting, provided that it is highly effective (as described in FASB Statement No. 133).

14.15 Among other criteria, FASB Statement No. 133 requires that the forecasted transaction (in this case, the foreign-currency-denominated sale) be *probable*, as the term is used in FASB Statement No. 5. The mere intent of management is not sufficient support for the conclusion that the forecasted transaction is probable. Rather, the transaction's probability should be supported by observable facts and the attendant circumstances, such as the following:

- The frequency of similar past transactions
- The financial and operational ability of the entity to carry out the transaction

<sup>3</sup> The fair value is based on dealer quotes, sometimes using the average of quotes obtained from two or more dealers.

<sup>4</sup> Intrinsic value is computed based on the changes in spot rates as compared to the strike rate.

<sup>5</sup> (FC 10,000,000 + 2.00 = \$5,000,000) less (FC 10,000,000 + 2.10 = \$4,761,905) = \$238,095.

<sup>6</sup> (FC 10,000,000 + 2.00 = \$5,000,000) less (FC 10,000,000 + 2.30 = \$4,347,826) = \$652,174. The increase in intrinsic value is \$414,079 (\$652,174 less \$238,095).

<sup>7</sup> Ratable time decaying in this example was unintentional and does not reflect application of the straight-line amortization method, consistent with the prior accounting practice.

- The extent of loss that could result if the transaction does not occur
- The likelihood that transactions with substantially different characteristics might be used to achieve the same business purposes

Additionally, the length of time until a forecasted transaction is expected to occur and the quantity of the forecasted transaction that is expected to occur are considerations in determining probability. Austin-Jhanes has a history of foreign sales that are similar to the one it is hedging. The forecasted sale is imminent and expected to take place in six months, on March 31, 20X2. The management of Austin-Jhanes believes their assessment of probability is supportable.

**14.16** Further, the forecasted transaction must continue to be probable throughout the period covered by the hedge. FASB Statement No. 133 states that the entity is required to discontinue prospectively hedge accounting if the transaction fails to meet any of the hedge accounting criteria stated in FASB Statement No. 133, including the requirement that the forecasted transaction be probable.

**14.17** Management has elected to measure effectiveness based on changes in the intrinsic value of the option contract, as permitted by FASB Statement No. 133.

**14.18** Austin-Jhanes should report the fair value of the option in its statement of financial position. Changes in the time value of the option should be recorded currently in earnings. Time value is considered to be the excess of the fair value of the option over its intrinsic value. Changes in the option's intrinsic value, to the extent that it is effective as a hedge, should be recorded in other comprehensive income. That is, the amount in other comprehensive income should be brought to a balance equal to the lesser of—

- The cumulative increase in the intrinsic value of the option (less any gains and losses on the option that were previously reclassified from accumulated other comprehensive income to earnings).
- The cumulative decrease in the expected proceeds of the sale, measured at the current spot rate, less any gains and losses on the option that were previously reclassified from accumulated other comprehensive income into earnings.

Any additional change in the intrinsic value of the option should be recorded in earnings. The balance in accumulated other comprehensive income should be reclassified to earnings at March 31, 20X2, the date of the sale.

**14.19** By entering into the option contract, Austin-Jhanes is assured of receiving at least \$5,000,000 from its FC 10,000,000 sale, excluding the cost of the option contract. (As shown in the journal entries that follow, the entity received \$5,000,000, consisting of \$4,347,826 from the sale at the spot rate plus \$652,174 from the gain on the option contract.)

## Journal Entries

**14.20** The journal entries Austin-Jhanes made are—

**September 30, 20X1**

Foreign currency option	\$20,000	
Cash		\$20,000

To record the purchased option as an asset.



**December 31, 20X1**

Loss on hedging activity	\$10,000	
Foreign currency option		\$10,000

To record the reduction in the time value of the option through a charge to earnings.

Foreign currency option	\$238,095	
Other comprehensive income		\$238,095

To record the increase in the option's intrinsic value through a credit to other comprehensive income.

**March 31, 20X2**

Loss on hedging activity	\$10,000	
Foreign currency option		\$10,000

To record the reduction in the time value of the option through a charge to earnings.

Foreign currency option	\$414,079	
Other comprehensive income		\$414,079

To record the increase in the intrinsic value of the option through a credit to other comprehensive income.

Cash	\$4,347,826	
Sales		\$4,347,826

To record the FC 10,000,000 sale at a spot rate of 2.30 FC/1 U.S.\$.

Cash	\$652,174	
Foreign currency option		\$652,174

To record the net cash settlement of the option at its maturity.

Other comprehensive income	\$652,174	
Sales		\$652,174

To transfer the gain on the hedging activity to earnings when the forecasted transaction affects earnings.

**14.21** The effects of the transaction on Austin-Jhanes' statement of financial position are as follows.

	DR (CR)
<b>September 30, 20X1</b>	
Cash	\$ (20,000)
Foreign currency option	20,000

	DR (CR)
<b>December 31, 20X1</b>	
Cash	\$(20,000)
Foreign currency option	248,095
Accumulated other comprehensive income	(238,095)
Retained earnings	10,000
<b>March 31, 20X2</b>	
Cash	\$4,980,000
Retained earnings	(4,980,000)

14.22 The effects of the transaction on Austin-Jhanes' earnings are as follows.

	DR (CR)
<b>Period Ended December 31, 20X1</b>	
Loss on hedging activity and amortization of the time value of the option	<u>\$ 10,000</u>
<b>Period Ended March 31, 20X2</b>	
Sale	\$(5,000,000)
Loss on hedging activity and amortization of the time value of the option	<u>10,000</u>
	<u><u>\$(4,990,000)</u></u>
<b>Cumulative impact</b>	<u><u>\$(4,980,000)</u></u>

## Auditing Considerations

### Description of the Entity

14.23 Austin-Jhanes is a U.S. manufacturer that sells its products both domestically and outside the United States. Its foreign sales are denominated in foreign currencies, although its functional currency is the U.S. dollar.

14.24 The entity uses derivatives regularly to hedge forecasted foreign currency—denominated sales and purchases of raw materials. Derivatives are used to a lesser extent for management of U.S. interest rate risk, for example, converting fixed-rate debt to floating using interest rate swaps. (For the purposes of this case study, only the accounting for the hedging of a forecasted foreign-currency-denominated sale is illustrated.) Derivatives are not used for investment purposes.

14.25 The board of directors has authorized management of Austin-Jhanes to enter into derivatives for hedging purposes, and the board receives periodic reports on the intent of usage as well as hedge effectiveness.

14.26 All derivatives transactions are executed through a centralized group of traders, which reports to the chief financial officer. The traders and the chief financial officer are very knowledgeable about derivatives. There is a formal risk management process for derivatives. Austin-Jhanes has systems in

place to monitor the risks being hedged as well as the ongoing effectiveness of the hedges. The trading desk executes derivatives transactions only with counterparties that have been approved after careful assessment of creditworthiness. There are limits on the credit exposure to any one counterparty and on the extent to which derivatives can be used to hedge a given exposure.

**14.27 Control environment.** Because of senior management's integrity and ethical values, its commitment to competence, its active involvement with the business, its philosophy and operating style, and the operating structure it has imposed, Austin-Jhanes' overall control environment is sound.

**14.28 Risk assessment.** Austin-Jhanes' chief financial officer conducts weekly meetings with the derivatives traders to discuss the financial markets generally and to assess the entity's position in derivatives, including ongoing hedge effectiveness. This discussion includes an assessment of the valuation of the derivatives as well as the hedged exposures, with particular emphasis on derivatives and exposures that are not exchange-traded, or traded in a broad interbank market. Sales forecasts, significant forecasted transactions, and other issues also are discussed in order to plan for required upcoming hedging activities. The use of new types of derivatives or the execution of transactions with new counterparties must be discussed with and approved by the chief financial officer.

**14.29 Control activities.** Control activities include, among other things, the following.

- Controls have been implemented with respect to control objectives of—
  - Completeness of records.
  - Validity of records.
  - Restricted access to assets.
- Segregation of the accounting function from trade authorization and execution. The accounting department is responsible for cash and derivatives position reconciliations between the accounting and trading records and broker/counterparty statements. Quarterly, the controller reviews hedging activities for compliance with the requirements of FASB Statement No. 133.
- Data files with such information as counterparty limits are maintained apart from the traders. The chief financial officer authorizes any changes to these files.
- Austin-Jhanes' derivatives trading system has an automated interface with the general ledger and updates the general ledger monthly. Movements of cash associated with derivatives transactions are authorized and executed by the treasurer's department, which is separate from the derivatives-trading group.
- Austin-Jhanes' derivatives trading, sales, accounting, and other transaction processing activities are highly automated. There are effective general computer controls at the data centers, which process the entity's transactions and other information.

**14.30 Information and Communication.** The chief financial officer and controller receive monthly reports summarizing derivatives transactions for the period and the positions at the end of the month. (See the discussion of monitoring controls below for descriptions of this and other reports).

**14.31** The chief financial officer advises the audit committee at its quarterly meetings on the status of the entity's derivatives positions, realized and unrealized gains, compliance with Austin-Jhanes' derivatives policy and any other information that would be useful for the audit committee in carrying out its responsibilities.

**14.32** The notes to the entity's financial statements contain a description of the entity's accounting policy for derivatives and other information required by generally accepted accounting principles and the SEC.

**14.33** *Monitoring.* The chief financial officer and controller perform monthly reviews of Austin-Jhanes' performance in using derivatives, including their effectiveness, and in the case of hedges of forecasted transactions, whether the forecasted transaction continues to meet the requirements for hedge accounting.

**14.34** The chief financial officer and controller receive monthly reports that provide information that enables them to identify any material breakdowns in controls, problems with the underlying systems, or possible material misstatements in the information. The reports include—

- Realized and unrealized gain or loss on derivatives and hedged exposures, as well as a statistical measurement of correlation of changes in their values.
- Transaction volumes and trends.
- Derivatives positions by exchange/counterparty/type of instrument with a comparison with established limits. The chief financial officer receives notification as limits are approached. The system does not allow limits to be exceeded without the chief financial officer's approval.
- Information on various reconciliations, including an aging of reconciling items and resolution status.

## Summary of Accounting

**14.35** Transactions in derivatives are material to the entity's financial statements. Austin-Jhanes uses foreign currency options to hedge forecasted foreign sales. Under FASB Statement No. 133, it must record the fair value of the options in its statement of financial position. Changes in the time value of the options are recorded currently in earnings. Changes in the options' intrinsic value, to the extent that they are effective as a hedge, are recorded in other comprehensive income.

## Types of Potential Misstatements

**14.36** The types of potential misstatements are—

- Improper use of hedge accounting under FASB Statement No. 133, including—
  - Failure to properly designate and document the hedge at its inception.
  - Incorrect assessment of hedge effectiveness, including the improper inclusion or exclusion of the time value of the options.
  - Improper recording of gains and losses relating to the transaction (for example, transactions recorded in the improper amount or wrong accounting period).
  - Improper inclusion or exclusion of the time value of the options in the measure of hedge effectiveness.
- Failure to record all derivatives transactions.
- Inaccurate determination of fair values of derivatives.

## Inherent Risk Factors to Consider for This Transaction in Planning the Audit

14.37 The following inherent risk factors have been identified.

- Since small amounts of cash are required to enter the options, there is an increased inherent risk that the options will not be identified.
- The complexity of generally accepted accounting principles for the put options and the hedging activities leads to an increased inherent risk that the transactions will not be accounted for in conformity with generally accepted accounting principles.
- The options are not exchange-traded, which increases the inherent risk that valuations will be inappropriate.

## Control Risk and Timing of Procedures

14.38 Control risk has been assessed below the maximum for certain assertions and at the maximum for others.

- *Control risk below the maximum.* For the assertions about existence or occurrence, completeness, and rights and obligations, control risk will be assessed as being below the maximum. This is considered the most effective and efficient approach given the controls in place, such as the performance of reconciliations and monitoring of hedge effectiveness. Tests of details of the recording of transactions in the general ledger in accordance with FASB Statement No. 133 and confirmation procedures will take place prior to year end. At year end, various reconciliations, significant activity, and hedge effectiveness will be reviewed, and the continuance of controls tested will be reviewed through inquiry and observation.
- *Control risk at the maximum.* For the assertions about valuation and presentation and disclosure, control risk is assessed at the maximum due to the efficiency with which the valuation of derivatives at year end can be tested. Also, adequacy of presentation and disclosure can only be assessed at year end.

## Materiality

14.39 The transaction is considered material.

## Design of Procedures

14.40 The auditor defined the following objectives and related procedures for the audit of assertions about put options hedging forecasted sales.

<u>Audit Objective</u>	<u>Procedures, Including Those Designed to Gather Evidential Matter About the Operating Effectiveness of Controls</u>	<u>Timing</u>
The purchase of options was properly authorized.	<ul style="list-style-type: none"> <li>● For a sample of transactions, review for proper authorization.</li> </ul>	Interim date
The foreign currency options exist and the entity's rights and obligations relating to the options have been properly classified and recorded.	<ul style="list-style-type: none"> <li>● Confirm details of related transactions and derivatives.</li> </ul>	Interim date
	<ul style="list-style-type: none"> <li>● For selected transactions, trace to proper recording in the trading system and general ledger, with emphasis on classification (that is, earnings or other comprehensive income).</li> </ul>	Interim date

(continued)

<u>Audit Objective</u>	<u>Procedures, Including Those Designed to Gather Evidential Matter About the Operating Effectiveness of Controls</u>	<u>Timing</u>
All options transactions have been captured and recorded in the entity's information in the proper accounting period.	<ul style="list-style-type: none"> <li>● Review general ledger, trading system, and cash reconciliations.</li> </ul>	Year end
	<ul style="list-style-type: none"> <li>● Test controls on completeness, for example, independent review of deal information and reconciliations.</li> </ul>	Interim date
	<ul style="list-style-type: none"> <li>● For a sample of transactions, review for recording in the proper period.</li> </ul>	Year end
	<ul style="list-style-type: none"> <li>● Send blind confirmations to dealers and compare options in the responses to amounts recorded.</li> </ul>	Year end
Hedge accounting has been properly applied.	<ul style="list-style-type: none"> <li>● Review open options contracts and determine whether forecasted foreign currency-denominated transactions qualify for hedge accounting.</li> </ul>	Interim and year end
	<ul style="list-style-type: none"> <li>● Test process by which hedge effectiveness is determined and monitored.</li> </ul>	Interim and year end
	<ul style="list-style-type: none"> <li>● Determine that options transactions continue to qualify as foreign currency cash flow hedges.</li> </ul>	Interim and year end
	<ul style="list-style-type: none"> <li>● Determine that the fair value of the options and the changes in the fair value thereof are properly reported in the financial statements.</li> </ul>	Year end
The options and hedged transaction are measured at fair value consistent with the requirements of FASB Statement No. 133.	<ul style="list-style-type: none"> <li>● By reference to independent sources, verify the valuation of the options.</li> </ul>	Year end
	<ul style="list-style-type: none"> <li>● Test valuation of the hedged transactions.</li> </ul>	Year end
Presentation and disclosure are appropriate.	<ul style="list-style-type: none"> <li>● Read the financial statements and compare the presentation and disclosure with the requirements of FASB Statement No. 133.</li> </ul>	Year end

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