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DERIVATIVES —

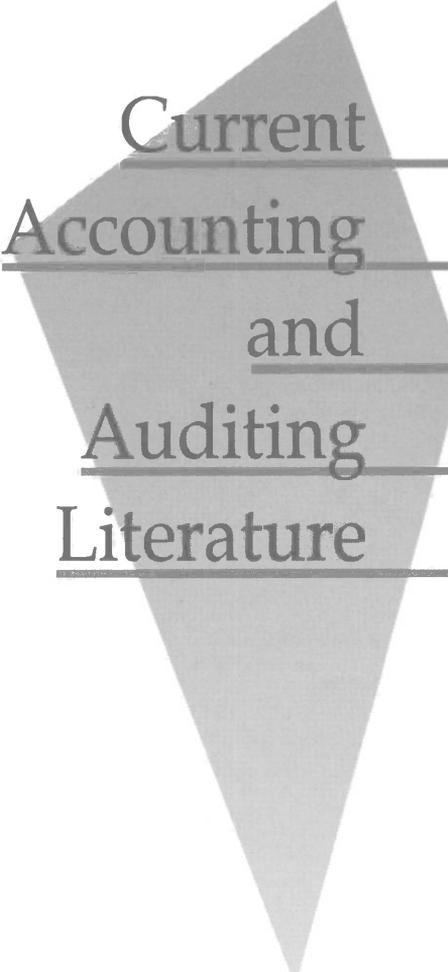
Current Accounting and Auditing Literature

*A Report Prepared by the Financial Instruments Task Force
of the Accounting Standards Executive Committee*

AICPA

American
Institute of
Certified
Public
Accountants

DERIVATIVES —



Current
Accounting
and
Auditing
Literature

*A Report Prepared by the Financial Instruments Task Force
of the Accounting Standards Executive Committee*

American Institute of Certified Public Accountants

NOTICE TO READERS

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PREFACE

Derivatives have become important financial management tools for many entities in the past decade, and the range and uses of derivatives have dramatically increased. However, recent losses incurred by various types of entities as a result of derivatives transactions have raised questions about the nature, suitability, and use of such instruments — including questions about accounting for derivatives transactions. Derivatives transactions are of concern to many parties, including the boards of directors and managements of entities that use such instruments, regulators (if any) in the related industries, investors, creditors, and other financial statement users, and auditors of the financial statements of those entities. The Financial Instruments Task Force of the AICPA's Accounting Standards Executive Committee was asked, with the assistance of representatives of the AICPA's Auditing Standards Board, to compile a reference to the existing guidance on accounting for and auditing of such transactions. This report is the result of the task force's efforts.

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INTRODUCTION

Derivatives — defined in this report as futures, forward, swap, or option contracts or other financial contracts with similar characteristics — have become important financial management tools for many entities. The past decade has witnessed an unprecedented growth in the use and acceptance of derivatives, resulting in a market involving aggregate notional amounts (as discussed herein) of trillions of dollars. Much of this growth can be ascribed to the fact that derivatives, when properly used and monitored, may help entities manage risks that they face in conducting their day-to-day business.

Another reason for the widespread acceptance of derivatives is their flexibility. Many derivatives are private contracts between two parties; therefore, the terms agreed to can address the specific risk management needs of the parties. Dealers and end users also can agree to a derivative that combines the economic characteristics of one or more basic derivatives. For example, an end user could combine a currency swap and an interest-rate swap. This allows the end user to manage more than one risk simultaneously. The combination of derivatives may be perfectly suitable for risk management purposes, depending on the risk profile of the end user. However, dealers can sell, or construct for end users, other derivatives with features that make those derivatives questionable or unsuitable for risk management. The growing use of derivatives and their potential complexity have pointed out (1) the importance of strong internal controls around derivatives activities, and (2) the need for improved financial accounting standards.

The risks and uncertainties associated with derivatives have raised questions about their use, including questions about the adequacy of related accounting guidance. Answers to these questions should consider the legal and economic environment in which derivatives transactions take place, including the —

- Importance of derivatives in domestic and international financial markets.
- Relative costs of further regulation and the economic effects of such costs.
- Variety, complexity, and fast-paced innovation of derivatives transactions.
- Legal enforceability of contracts, including netting arrangements (as discussed herein).
- Credit risk, market risk, legal risk, control risk, and other risks that exist in derivatives transactions.

Some of the questions raised include the following:

- Would further regulation of derivatives transactions be beneficial?
- Is oversight by the board of directors (or a similar governing body) adequate to ensure that derivatives activities are well managed and controlled?

- What features contribute to effective internal controls over derivatives activities?
- How should financial reporting of entities engaging in derivatives transactions inform investors, creditors, and other financial statement users about the risks and uncertainties associated with such transactions?
- Do current accounting principles provide adequate guidance on the recognition, measurement, and disclosure of derivatives?
- How should auditors of the financial statements of entities that are engaged in derivatives transactions approach the auditing of such transactions?

Of these questions, the latter four are within the purview of the accounting profession. Active projects to address issues raised by these four questions are under way by the appropriate bodies. Because (1) those projects will be completed over various terms and (2) in recognition of the importance of the questions, the Financial Instruments Task Force of the AICPA's Accounting Standards Executive Committee (AcSEC) was asked, with the assistance of representatives of the Auditing Standards Board, to compile a reference to the existing guidance on accounting for and auditing of derivatives transactions. This report is the product of the task force's efforts. It is intended to primarily benefit financial statement preparers and auditors. This report also may be useful to investors, creditors, and other financial statement users.

This report provides background information on basic contracts, risks, and other general considerations to provide a context for discussion of current authoritative accounting and auditing guidance. Additional background information and more detailed discussions are available in many recent studies and reports, some of which are listed in the Bibliography. Of particular note are the reports by the U.S. General Accounting Office and the Group of Thirty (a private-sector international financial policy organization).

The scope of this report has intentionally been kept narrow by—

1. Using the term *derivatives* to mean only that class of financial instruments whose values are derived from underlying instruments or market indexes and whose notional or contractual amounts are not recognized in the end user's statement of financial position (often referred to as off-balance-sheet transactions). As mentioned previously, these are futures, forward, swap, option, or other financial instruments with similar characteristics.¹
2. Focusing only on end uses of derivatives, rather than on the broader range of activities that includes the marketing of derivatives to others.

¹ Commodities futures contracts and certain other derivatives that are traded under uniform rules through an organized exchange do not meet the definition of *financial instrument* established in accounting literature. However, they are included herein because they are often used to achieve many of the same objectives.

3. Addressing only generally accepted accounting principles used in general-purpose financial reporting (and the related auditing guidance) in the United States, and not including guidance related to specialized reporting based on income-tax, regulatory, statutory, or international accounting principles or practices.

In limiting the definition of derivatives, it is acknowledged that other classes of financial instruments exist that may also be considered as derivatives (such as some asset-backed securities and structured notes generally recognized in the end user's statement of financial position). Asset-backed securities include, for example, collateralized mortgage obligations, interest-only or principal-only securities, and residual securities. The use of such instruments has also grown dramatically in the last decade. Asset-backed securities can provide a way for an investor to acquire certain cash flows of the collateral backing the securities—specifically, those cash flows that have the expected risk-and-reward profile that the investor desires most. Although asset-backed securities share some risks of the other derivatives described in this report, they have been excluded from the scope of this report to allow for its timely issuance. Existing accounting and auditing literature addresses many related issues in detail and those issues are more widely known.

Some entities, primarily large commercial banks and securities firms, act as market makers or dealers in derivatives that are not traded under uniform rules through an organized exchange. The primary goals of those activities are to make a market and earn income on the difference between the bid and offer prices. Although the volume of transactions often causes individual exposures to offset each other, such activities are subject to different permutations of risks and different accounting and auditing considerations. Such matters affect the financial statements of fewer entities and are, therefore, beyond the scope of this report. Two sources of information are the AICPA Audit and Accounting Guide *Audits of Brokers and Dealers in Securities* and the exposure draft of a proposed update of this guide, which was issued in August 1994.

Given the fast-changing market for derivatives and related projects under way, any summary of existing guidance risks being out-of-date upon its issuance. Accordingly, readers should be alert to (1) final guidance issued as a result of projects mentioned in this report and (2) projects initiated after the issuance of this report.²

² As this report was being completed, the last Financial Accounting Standards Board (FASB) Statement of Financial Accounting Standards issued was FASB Statement No. 119, *Disclosures about Derivative Financial Instruments and Fair Value of Financial Instruments*. The last issue under consideration by the FASB's Emerging Issues Task Force (EITF) was Issue No. 94-7, *Accounting for Financial Instruments Indexed to and Potentially Settled in a Company's Own Stock*. The last AICPA Statement on Auditing Standards (SAS) was SAS No. 73, *Using the Work of a Specialist* (AICPA, *Professional Standards*, vol. 1, AU sec. 336).

BACKGROUND

RISKS INHERENT IN DERIVATIVES

Risks inherent in derivatives — such as credit risk, market risk, legal risk, and control risk — are the same as risks inherent in more familiar financial instruments. However, derivatives often possess special features such as —

- Little or no cash outflows or inflows required at inception.
- No principal balance or other fixed amount to be paid or received.
- Potential risks and rewards substantially greater than the amounts recognized in the statement of financial position.

Also, many derivatives' values are more volatile than those of other financial instruments — potentially alternating between positive and negative values in a short period of time.

Given these features, a derivative's risks can be difficult to segregate because the interaction of such risks may be complex. This complexity is increased (1) when two or more basic derivatives are used in combination, (2) by the difficulty of valuing complex derivatives, and (3) by the volatile nature of markets for some derivatives. The economic interaction between an end user's position in derivatives and that end user's other on- or off-balance-sheet positions (whether assets or liabilities) is an important determinant of the total risk associated with an end user's derivatives use. Risk assessment, therefore, involves consideration of the specific instrument and its interaction with other on- and off-balance-sheet portfolios and activities. There is no list of risk characteristics that can cover all those complex interactions, but a discussion of the basic risk characteristics associated with derivatives follows.

Credit Risk. This risk relates to the economic losses an end user would suffer if the party on the other end of the contract (the *counterparty*) fails to meet its financial obligations under the contract. Entities often quantify this risk of loss as the derivative's replacement cost — that is, the current market value of an identical contract.³ The requirement that participants settle changes in the value of their positions daily mitigates the credit risk of many derivatives traded under uniform rules through an organized exchange (*exchange-traded derivatives*). *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

³ There is a fundamental difference between the credit risk associated with on-balance-sheet financial assets (such as notes receivable or debt securities) and that associated with derivatives — the amount of credit exposure in a derivative is volatile, as it will vary with changes in the derivative's market value. Generally, a derivative only has credit exposure when the derivative has positive market value. That value represents an obligation of the counterparty and, therefore, an economic benefit that can be lost if the counterparty fails to fulfill its obligation. Furthermore, the market value of a derivative may fluctuate quickly, alternating between positive and negative values.

according to its obligations under the contract. End users can reduce settlement risk through master netting agreements (see “Swaps” herein). *Counterparty risk* connotes the exposure to the aggregate credit risk posed by all transactions with one counterparty.

Market Risk. This risk relates broadly to economic losses due to adverse changes in the fair value of the derivative. Related risks include price risk, basis risk, liquidity risk, and valuation or model risk. *Price risk* relates to changes in the level of prices due to changes in (1) interest rates, (2) foreign exchange rates, or (3) other factors that relate to market volatilities of the rate, index, or price underlying the derivative. *Basis risk* relates to the differing effect market forces have on the performance or value of two or more distinct instruments used in combination (see the discussion of hedging that follows). *Liquidity risk* relates to changes in the ability to sell, dispose of, or close out the derivative, thus affecting its value. This may be due to a lack of sufficient contracts or willing counterparties. *Valuation or model risk* is the risk associated with the imperfection and subjectivity of models and the related assumptions used to value derivatives.⁴

Legal Risk. This 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. Such risk could arise, for example, 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 investing in certain types of financial instruments.

Control Risk. This risk relates to losses that result from the failure (or absence) of internal controls to prevent or detect problems (such as human error, fraud, or system failure) that hinder an end user from achieving its operational, financial reporting, or compliance objectives. Such failure could result, for example, in an end user failing to understand a contract’s economic characteristics. Lack of adequate control also could affect whether published financial information about derivatives was prepared reliably by a failure to prevent or detect errors or irregularities in financial reporting. Finally, the end user may be negatively affected if controls fail to prevent or detect instances of noncompliance with related contracts, laws, or regulations. Failure to understand derivatives used may lead to inadequate design of controls over their use. The sections “Auditing Literature” and “Internal Control Considerations” herein further discuss internal controls over derivatives, including financial reporting controls considered in financial statement audits.

⁴ Market risk can be measured using a methodology referred to as *value at risk*. Paragraph 69(e) of FASB Statement No. 119 defines value at risk as “the expected loss from an adverse market movement with a specified probability over a period of time.” The Group of Thirty report *Derivatives: Practices and Principles* discusses measurement of risk and the concept of value at risk.

TYPES OF DERIVATIVES

A key feature of derivatives, as defined in this report, is that resulting cash flows are decided by reference to —

1. Rates, indexes (which measure changes in specified markets), or other independently observable factors.
2. The value of underlying positions in the following:
 - a. Financial instruments such as government securities (interest-rate contracts), equity instruments (such as common stock), or foreign currencies
 - b. Commodities such as corn, gold bullion, or oil
 - c. Other derivatives

Derivatives can generally be described as either *forward-based* or *option-based*, or there can be combinations of the two. A traditional forward contract obligates one party to buy and a counterparty to sell an underlying financial instrument, foreign currency, or commodity at a future date at an agreed-on price. Thus, a *forward-based derivative* (examples are futures, forward, and swap contracts) is a two-sided contract in that each party potentially has a favorable or unfavorable outcome resulting from changes in the value of the underlying position or the amount of the underlying reference factor. A traditional option contract provides one party who pays a premium (the *option holder*) with a right, but not an obligation, to buy (call options) or sell (put options) an underlying financial instrument, foreign currency, or commodity at an agreed-on price on or before a predetermined date. The counterparty (the *option writer*) is obligated to sell (buy) the underlying position if the option holder exercises the right. Thus, an *option-based derivative* (examples are option contracts, interest-rate caps, and interest-rate floors) is one-sided in the sense that, in the event the right is exercised, only the holder can have a favorable outcome and the writer can have only an unfavorable outcome. If market conditions would result in an unfavorable outcome for the holder, the holder will allow the right to expire unexercised. The expiration of the option contract results in a neutral outcome for both parties (except for any premium paid to the writer by the holder). Although there are a variety of derivatives, they generally are variants or combinations of these two types of contracts.

Derivatives also are either *exchange-traded* or *over-the-counter* (OTC). End users and dealers trade futures, certain option, and other standardized contracts under uniform rules through an organized exchange. Most of the risk inherent in such exchange-traded derivatives relates to market risk rather than to credit risk. OTC derivatives are privately traded instruments (primarily swap, option, and forward contracts) customized to meet specific needs and for which the counterparty is not an organized exchange. As a result, although OTC derivatives are more flexible, they potentially involve higher credit and liquidity risk. The degree of risk depends on factors such as (1) the financial

strength of the counterparty, (2) the sufficiency of any collateral held, and (3) the liquidity of the specific instrument. The advantages of OTC derivatives are that they can be customized and may be easier to use.

A description of the basic contracts and variations follows.

Forwards. *Forward contracts* are contracts 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.⁵ Forward contracts are not traded on exchanges and, accordingly, may be less liquid and generally involve more credit and liquidity risk than futures contracts.

Forward-rate agreements, which are widely used to manage interest-rate risk, are forward contracts that specify a reference interest rate and an agreed-on interest rate (one to be paid and one to be received) on an assumed deposit of a specified maturity at a specified future date (the *settlement date*).⁶ The term of the assumed deposit may begin at a subsequent date; for example, the contract period may be for six months, commencing in three months. At the settlement date, the seller of the forward-rate agreement pays the buyer if interest calculated at the reference rate is higher than that calculated at the agreed-on rate; conversely, the buyer pays the seller if interest calculated at the agreed-on rate is higher than that calculated at the reference rate.

Futures. *Futures contracts* are forward-based 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.⁷ Futures are standardized contracts traded on an organized exchange. The deliverable financial instruments underlying *interest-rate futures contracts* are specified investment-grade financial instruments, such as U.S. Treasury securities or mortgage-backed securities. *Foreign-currency futures contracts* involve specified deliverable amounts of a particular foreign currency. The deliverable products under *commodities futures contracts* are specified amounts and grades of commodities, such as oil, gold bullion, or coffee.

Active markets exist for most financial and commodity futures contracts. Active markets provide a mechanism by which entities may transfer their exposures to price risk to other parties. Those parties may, in turn, be trying to manage their own financial risks or achieve gains through speculation. Recognized exchanges, such as the International Monetary Market (a division of the Chicago Mercantile Exchange) or the Chicago Board of Trade, establish conditions governing transactions in futures contracts. U.S. Treasury bond

⁵ Forward and futures contracts can also be based on an index, such as Standard & Poor's Composite Index of 500 Stocks (the S&P 500).

⁶ Examples of reference rates include the U.S. Treasury bill rate and the London Interbank Offered Rate (LIBOR), which is the international rate banks charge each other to borrow money.

⁷ See footnote 5.

(interest-rate) futures contracts are the most widely traded financial futures contracts. To ensure an orderly market, the exchanges specify maximum daily price fluctuations for each type of contract. If the change in price from the previous day's close reaches a specified limit, no trades at a higher or lower price are allowed. Consequently, trading in the contract is stopped until buy and sell orders can be matched either within the daily price limits or on the next business day. Such limits may affect liquidity and thereby hinder the effectiveness of futures contracts used as hedges.

Brokers require both buyers and sellers of futures contracts to deposit assets (such as cash, government securities, or letters of credit) with a broker. Such assets represent the initial margin (which is a good-faith deposit) at the time the contract is initiated. The brokers mark open positions to market daily, and either call for additional assets to be maintained on deposit when losses are experienced (a margin call) or credit customers' accounts when gains are experienced. This daily margin adjustment is called *variation margin*. Variation margin payments generally must be settled daily in cash or acceptable collateral, thus reducing credit risk. The broker returns the initial margin when the futures contract is closed out or the counterparty delivers the underlying financial instrument according to the terms of the contract.

Delivery of the commodity or financial instrument underlying futures contracts occurs infrequently, as contracts usually are closed out before maturity. This close-out process involves the participants entering a futures contract that is equal and opposite to a currently held futures contract. This provides the participant with equal and opposite positions and obligations, and eliminates any net obligation during the remaining lives of the futures contracts.

Swaps. *Swap contracts* are forward-based contracts in which two parties agree to swap streams of payments over a specified period. The payment streams are based on an agreed-on (or *notional*) principal amount. The term *notional* is used because swap contracts generally involve no exchange of principal at either inception or maturity. Rather, the notional amount serves as a basis for calculation of the payment streams to be exchanged.

Interest-rate swaps are the most prevalent type of swap contract. One party generally agrees to make periodic payments, which are fixed at the outset of the swap contract. The counterparty agrees to make variable payments based on a market interest rate (index rate). Swap contracts allow end users to achieve net payments similar to those that would be achieved if the end user actually changed the interest rate of designated assets or liabilities (the underlying cash position) from floating to fixed rate, or vice versa.

Interest-rate swap contracts are considered a flexible means of managing interest-rate risk. Because swap contracts are customized for end users, terms may be longer than futures contracts, which generally have delivery dates from three months to three years. Swap contract documentation usually is stan-

standardized and transactions can be concluded quickly, making it possible to rapidly take action against anticipated interest-rate movements.

Interest-rate swap contracts normally run to maturity. However, there may be circumstances that eliminate an end user's need for the swap contract before maturity. Accordingly, entities may cancel contracts, sell their position, or enter an offsetting swap contract and realize gains or losses, depending on the value of the swap.

Swap contracts are not exchange-traded but negotiated between two parties. Therefore, they are not as liquid as futures contracts. They also lack the credit risk protection provided by regulated exchanges. The failure by a counterparty to make payments under a swap contract usually results in an economic loss to an end user only if the underlying prices (for example, interest rates or foreign exchange rates) have moved in an adverse direction; that is, in the direction that the swap contract was intended to protect against. The economic loss corresponds to the cost to replace the swap contract. That cost would be the present value of any discounted net cash inflows that the swap contract would have generated over its term.

In some swap contracts, the timing of payments varies. For example, in an interest-rate swap contract, one party might pay interest quarterly while the counterparty pays interest semiannually. An added element of credit risk exists for the quarterly payer because of the risk that the semiannual payer may default. Here, the economic loss equals the lost quarterly payment and the cost of replacing the swap contract.

Many entities enter legally enforceable master netting agreements that may reduce total credit risk. Upon default by an applicable counterparty, the agreements provide that entities may set off (for settlement purposes) all their related payable and receivable swap contract positions.

Foreign-currency swaps (sometimes called *cross-currency exchange agreements*) are used to fix (for example, in U.S. dollar terms) the value of foreign exchange transactions that will occur in the future. Foreign-currency swap contracts are also used to transfer a stream of cash flows denominated in a particular currency or currencies into another currency or currencies. Basic features of foreign-currency swap contracts include the following:

- The principal amount is usually exchanged at the initiation of the swap contract.
- Periodic interest payments are made based on the outstanding principal amounts at the respective interest rates agreed to at inception.
- The principal amount is usually re-exchanged at the maturity date of the swap contract.

In *fixed-rate-currency swaps*, two counterparties exchange fixed-rate interest in one currency for fixed-rate interest in another currency. Currency coupon or

cross-currency interest-rate swap contracts combine the features of an interest-rate swap contract and a fixed-rate-currency swap contract. That is, the counterparties exchange fixed-rate interest in one currency for floating-rate interest in another currency.

Basis swaps are a variation on interest-rate swap contracts where both rates are variable but are tied to different index rates. For example, one party's rate may be indexed to three-month LIBOR while the other party's rate is indexed to six-month LIBOR.

Equity swaps are contracts in which the counterparties exchange a series of cash payments based on (1) an equity index and (2) a fixed or floating interest rate on a notional principal amount. Equity swap contracts typically are tied to a stock index, but sometimes they relate to a particular stock or a defined basket of stocks. One party (the *equity payer*) pays the counterparty (the *equity receiver*) an amount equal to the increase in the stock index at regular intervals specified in the contract. Conversely, the equity receiver must pay the equity payer if the stock index declines. The counterparties generally make quarterly payments. Whatever the index performance, the party designated as the equity receiver may also receive an amount representing dividends paid by the companies making up the index during the period.

The equity payer, on a floating-rate equity swap contract, typically receives LIBOR (plus or minus a notional spread) on the notional principal amount defined in the equity swap contract. This notional principal amount is based on the underlying equity index value at the contract's inception. The notional principal amount is adjusted at each payment date to reflect the settlement of the equity gain or loss. The floating rate is also reset on the periodic payment dates. A fixed-rate equity swap contract is essentially the same, except that the interest rate is fixed for the term of the contract.

Commodity swaps are contracts in which the counterparties agree to exchange cash flows based on the difference between an agreed-on, fixed price and a price that varies with changes in a specified commodity index, as applied to an agreed-on quantity of the underlying commodity.

Options. *Option contracts* are traded on an exchange or over the counter (that is, they are negotiated between two parties). Option contracts allow, but do not require, the holder (or *purchaser*) to buy (call) or sell (put) a specific or standard commodity, or financial or equity instrument, at a specified price during a specified period (an *American option*) or at a specified date (a *European option*).⁸ Furthermore, certain option contracts may involve cash settlements based on changes in specified indexes, such as stock indexes. Again, the principal differ-

⁸ Option-based derivatives do not necessarily include an explicit option that requires deliberate exercise by the holder. Instead, the holder receives the benefit automatically under the terms of the contract (for example, when the interest rate exceeds desired levels).

ence between option contracts and either futures or forward contracts is that an option contract does not require the holder to exercise the option, whereas performance under a futures or forward contract is mandatory.

At the inception of an option contract, the holder typically pays a fee, which is called a *premium*, to the writer (or *seller*) of the option. The premium includes two values, the intrinsic value and the time value. 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 (the *strike price* or the *exercise price*). The intrinsic value of a put 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. The other component of the premium's value is the time value. The *time value* reflects the probability that the price of the underlying item will move above the strike price (for a call) or below the strike price (for a put) during the exercise period.

The advantage of option contracts held is that they can be used to mitigate downside price risk without totally negating upside profit potential. This is because the loss on a purchased option contract is limited to the amount paid for the option contract. Profit on written option contracts is limited to the premium received but the loss potential is unlimited because the writer is obligated to settle at the strike price if the option is exercised.

Option contracts are frequently processed through a clearinghouse that guarantees the writer's performance under the contract. This reduces credit risk, much like organized exchanges reduce credit risk for futures contracts. Thus, such option contracts are primarily subject to market risk. However, for option contracts that are not processed through the clearinghouse, the holder may have significant credit and liquidity risks.

Different option contracts can be combined to transfer risks from one entity to another. Examples of such option-based derivatives are caps, floors, collars, and swaptions.

Interest-rate caps are contracts in which the cap writer, in return for a premium, agrees to limit, or *cap*, the cap holder's risk associated with an increase in interest rates. If rates go above a specified interest-rate level (the *strike price* or the *cap rate*), the cap holder is entitled to receive cash payments equal to the excess of the market rate over the strike price multiplied by the notional principal amount. Issuers of floating-rate liabilities often purchase caps to protect against rising interest rates, while retaining the ability to benefit from a decline in rates.

Because a cap is an option-based contract, the cap holder has the right but not the obligation to exercise the option. If rates move down, the cap holder has lost only the premium paid. Because caps are not exchange traded, however, they expose the cap holder to credit risk because the cap writer could fail to fulfill its obligations.

A cap writer has virtually unlimited risk resulting from increases in interest rates above the cap rate. However, the cap writer's premium may potentially provide an attractive return.

Interest-rate floors are similar to interest-rate caps. Interest-rate floors are contracts in which the floor writer, in return for a premium, agrees to limit the risk associated with a decline in interest rates based on a notional amount. If rates fall below an agreed rate, the floor holder will receive cash payments from the floor writer equal to the difference between the market rate and an agreed rate multiplied by the notional principal amount. Floor contracts allow floating-rate lenders to limit the risk associated with a decline in interest rates, while benefiting from an increase in rates. As with interest-rate caps, the floor holder is exposed to credit risk because the floor writer could fail to fulfill its obligations.

Interest-rate collars combine a cap and a floor (one held and one written). Interest-rate collars enable an end user with a floating-rate contract to lock into a predetermined interest-rate range.

Swaptions are option contracts to enter an interest-rate swap contract at some future date or to cancel an existing swap contract in the future. As such, a swaption contract may act as a floor or a cap for an existing swap contract, or be used as an option to enter, close out, or extend a swap contract in the future.

USES OF DERIVATIVES TO ALTER RISK

Financial market participants have created a large variety of derivatives. Not only are there basic contracts, but there are variants tailored to add, subtract, multiply, or divide the related risk and reward characteristics and thereby satisfy specific risk objectives of the parties to the transactions. Such innovation has been driven by the users' desire to cope with (or attempt to take advantage of) market volatility in foreign exchange rates, interest rates, and other market prices; deregulation; tax law changes; and other broad economic or business factors. An end user may attempt to alter such risks (1) at a general level (that is, the overall risk exposures faced by the end user), (2) at the level of specific portfolios of assets or liabilities, or (3) narrowly to a specific asset, liability, or anticipated transaction. Uses of derivatives to alter risks range from uses that help mitigate or control volatile risk exposures (activities that include the idea of taking defensive action against risk through hedging) to uses that increase exposures to risk and, by that, the potential rewards (the idea of offensive action, often considered as trading or speculation). However, distinguishing between activities that dampen or increase the volatility of risk exposures can be difficult.

Speculation. *Speculation* involves the objective of profiting by entering into an exposed position, that is, assuming risk in exchange for the opportunity to profit from anticipated market movements. A speculator believes that the cash

market price of an underlying commodity, financial instrument, or index will change so that the derivative produces net cash inflows or can be closed out in the future at a profit.

Risk Management. Some end users use the volatility of derivatives to increase or decrease risks associated with existing or anticipated on- or off-balance sheet transactions.⁹ End users often manage financial risks both generally (through management of the overall mix of financial assets and liabilities) and specifically (through hedges of specific risks or transactions).

Some entities continually analyze and manage financial assets and liabilities based on their payment streams and interest rates, the timing of their maturities, and their sensitivity to actual or potential changes in market prices or interest rates. Such activities fall under the broad definition of *asset/liability management*. Some end users purchase derivatives to help manage and select their total exposure to interest-rate risk. End users also purchase derivatives to create synthetic instruments. Those synthetic instruments can be used in the end user's asset/liability management activities to synthetically alter the interest income and expense flows of certain assets or liabilities. For example, an end user can convert the cash-flow pattern and market risk profile of floating-rate debt to those of fixed-rate debt by entering an interest-rate swap contract.

Hedging connotes a risk alteration activity to protect against the risk of adverse price or interest-rate movements on certain of an end user's assets, liabilities, or anticipated transactions.¹⁰ A *hedge* is a defensive strategy. It is used to avoid or reduce risk by creating a relationship by which losses on certain positions (assets, liabilities, or anticipated transactions) are expected to be counterbalanced in whole or in part by gains on separate positions in another market. For example, an end user may want to attempt to fix the value of an asset, the sales price of some portion of its future production, the rate of exchange for payments to its suppliers, or the interest rates of an anticipated issuance of debt.

The use of various financial instruments to reduce certain risks results in the hedger's assuming a different set of risks. Effective control and management of risks through hedging, therefore, require a thorough understanding of the market risks associated with the financial instrument that is part of the hedging program.

Basis risk is an important risk encountered with most hedging contracts. As introduced above, basis is the difference between the cash market price of the instrument or other position being hedged and the price of the related

⁹ Although risk management is often read to connote risk reduction, the distinction between certain risk management activities and speculative activities is not well defined.

¹⁰ This discussion of hedging is broader than, and should not be confused with, the criteria in generally accepted accounting principles (GAAP) that must be met to achieve hedge accounting. (See the "Accounting Literature" section herein.)

hedging contract. The end user is subject to the risk that the basis will change while the hedging contract is open (that is, the price correlation will not be perfect). Changes in basis can occur continually and may be significant. Changes in basis can occur even if the position underlying the hedging contract is the same as the position being hedged. However, entities often enter a hedging contract, such as a futures contract, on a position that is different from the position being hedged. Such *cross-hedging* increases the basis risk.

As cash market prices change, the prices of related hedging contracts change, but not necessarily to the same degree. *Correlation* is the degree to which hedging contract prices reflect the price movement in the cash market. The higher the correlation between changes in the cash market price and the hedging contract's price, the higher the precision with which the hedging contract will offset the price changes of the position being hedged.

Gains or losses on the hedge position will not exactly offset the exposed cash market positions when the basis changes. The end user might enter a hedge when (1) it is perceived that the risk of a change in basis is lower than the risk associated with the cash market price exposure or (2) there is the ability to monitor the basis and to adjust the hedge position in response to basis changes.

Basis changes in response to many factors. Among them are (1) economic conditions, (2) supply and demand for the position being hedged, (3) liquidity of the cash market and the futures market for the instrument, (4) the credit rating of the cash instrument, and (5) the maturity of the instrument being hedged as compared with the instrument represented in the hedging contract. A discussion of how these factors affect basis is beyond the scope of this report. However, convergence — a significant contributor to a change in the basis over time — warrants mention.

Convergence is the shrinking of the basis between the hedging contract's price and the cash market price as the contract delivery date approaches. The hedging contract's price includes an element related to the time value up to the expiration of the contract. Convergence results from the delivery feature of hedging contracts that encourages the price of an expiring contract to equal the price of the deliverable cash market instrument on the day that the contract expires. As the delivery day approaches, prices generally fluctuate less and less from the cash market prices because the effect of expectations related to time is diminishing.

The *correlation factor* represents the potential effectiveness of hedging a cash market instrument with a contract where the deliverable financial instrument differs from the cash market instrument. The correlation factor generally is determined by regression analysis or another method of technical analysis of market behavior. When a high degree of positive correlation has historically existed between the hedging instrument price and the cash market price of the instrument being hedged, the risk of price variance associated with a cross-

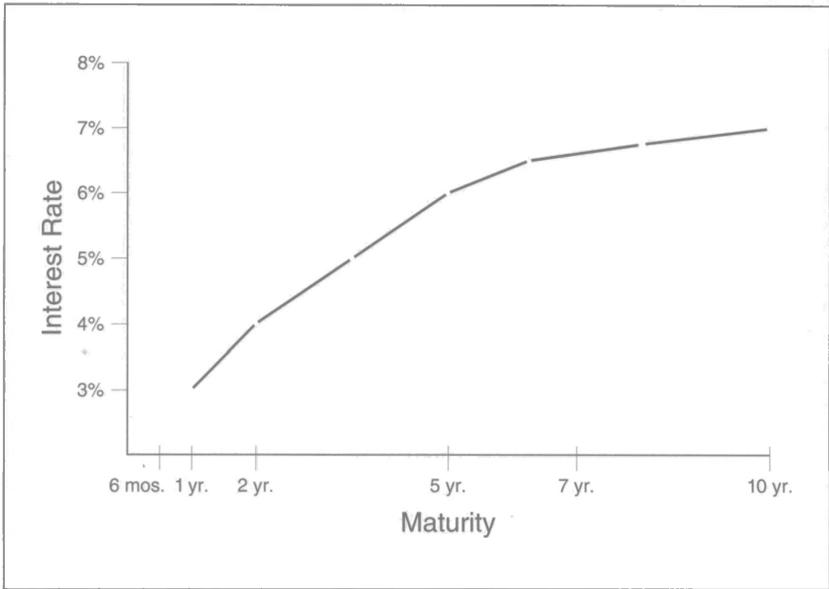


Exhibit 1: Interest-rate swap yield curve.

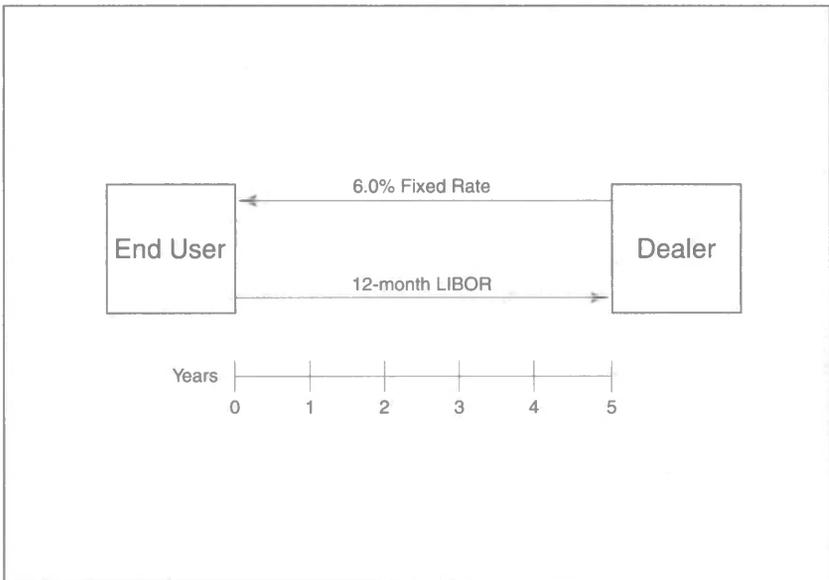


Exhibit 2: A five-year interest-rate swap contract with a \$100 million notional amount.

hedge is expected to be lower than the risk of not being hedged. End users usually employ the correlation factor to analyze cross-hedging risk at the inception of the hedge, while actual changes in the relative values of the hedge instrument and the hedged item usually are employed throughout the hedge period to measure correlation.

VARIATIONS ON BASIC DERIVATIVES

Some derivatives combine two or more basic contracts and thereby the risk and reward characteristics of several different products. Written options and other variations embedded in certain contracts can magnify interest-rate and other risks assumed by the end user. Included may be variations affecting the term, notional amount, interest rate, or specified payments. These variations have the potential to produce higher cash inflows or outflows than similar instruments that do not contain the option feature. This follows the general rule that the higher the potential return, the higher the risk.

Embedded Written Options. Some swap contracts involve the end user's writing of options that the counterparty issuer may exercise if certain changes occur in the index rate or under other specified circumstances. For example, the counterparty issuer may be given the option to¹¹ —

- Extend or shorten the term of the contract.
- Require the end user to purchase securities at a fixed price.
- Put a cap on variable payments to be received by the end user.

As with most option contracts (and allowing for the effect of the premium paid for the contract) the holder of the option (here, the counterparty) has a potentially favorable (or neutral) outcome, while the writer of the option (here, the end user) has a potentially unfavorable (or neutral) outcome if the option is exercised. For example, the counterparty will exercise an option to sell securities to the end user at a specified price only when that price exceeds the current market prices. Accordingly, the end user must analyze such contracts carefully to understand the nature of the derivative and how it will work under various interest rate and other conditions.

Several examples can help to explain the importance of such analysis.¹² For purposes of the examples, the graph in exhibit 1 plots the yields on swap contracts from the shortest to the longest maturity, thereby showing the *term structure* of interest rates on swap contracts. Longer maturities often relate to higher rates because the counterparty wishes to be compensated more as it puts its funds at risk for a longer period of time. This causes the resulting *yield curve* generally to be higher for longer-term rates and lower for shorter-term rates.

¹¹ See footnote 8 herein.

¹² The interest rates and spreads used in the examples are for illustrative purposes only and are not necessarily economically feasible.

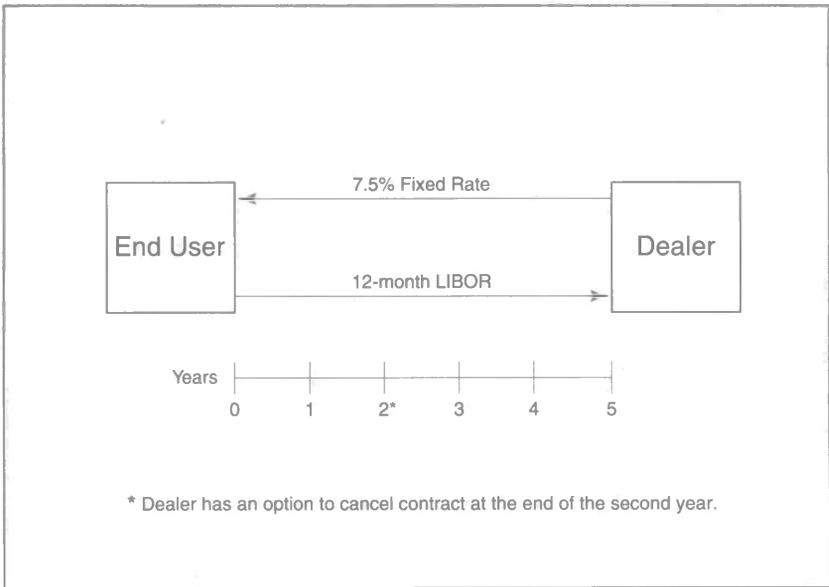


Exhibit 3: A five-year interest-rate swap contract with a \$100 million notional amount. The dealer has the option to cancel the swap contract at the end of the second year.

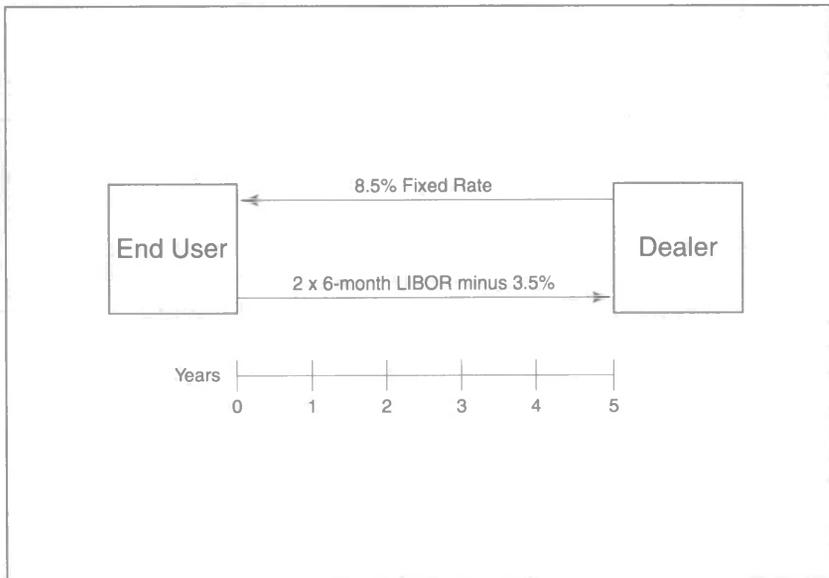


Exhibit 4: A five-year interest-rate swap contract with a \$100 million stated notional amount and a \$200 million effective notional amount.

Similarly, the interest-rate swap yield curve in exhibit 1 is positive; that is, the shorter-term swap contracts carry lower interest rates. Again, this is because the counterparties are compensated for the extra risk they take by committing to fixed payments over a longer period.

Assume an end user has a portfolio of variable-rate assets that reprice frequently. The principal balance of the portfolio is over \$100 million. The end user wishes to use an interest-rate swap contract to synthetically convert at least \$100 million of the portfolio to a fixed rate for a five-year period. Exhibit 2 provides an example of a basic (*plain vanilla*) swap contract.

The end user agrees to make semiannual, floating interest payments, based on twelve-month LIBOR and a \$100 million notional amount, over a period of five years. Semiannual interest payments will be made to the end user based on the same notional amount at an annual fixed rate of 6 percent, as shown on the yield curve. The end user has synthetically established a fixed interest rate for \$100 million of its portfolio during the swap contract's five-year term. The only interest-rate volatility created by the swap contract relates to changes in twelve-month LIBOR. The end user will receive net payments from the dealer (the counterparty) when twelve-month LIBOR drops below 6 percent. The end user must make net payments to the dealer when twelve-month LIBOR exceeds 6 percent.

Exhibit 3 provides an example of a swap contract embedded with an option written by the end user.

The end user will receive interest at the fixed rate of 7.5 percent. The end user has written an option that allows the dealer to cancel the swap contract at the end of the second year. Upon further analysis, this swap contract can be viewed economically as two transactions: (1) a two-year swap contract and (2) a written option for a three-year swap contract beginning in two years. The premium the end user receives for writing the option is equal to the difference between the (1) stated 7.5 percent fixed rate and (2) 4 percent fixed rate that would have been earned if the derivative were a separate two-year swap contract. (Refer to the yield curve charted in exhibit 1.) At the end of the second year, if interest rates favor the end user, it will be to the dealer's advantage to exercise its option. That is, the dealer would not elect to extend the swap contract unless the fixed rate the dealer must pay is less than the market rate.

Exhibit 4 illustrates the flexibility of the terms of a swap contract. On analysis, the swap may be viewed as one featuring twice the notional amount specified in the agreement.

Under this example, the end user has agreed to make variable payments based on a multiple (or *leverage factor*) of six-month LIBOR. For ease of analysis, the 3.5 percent characterized by the contract as a reduction of the end user payments should, instead, be added back to the fixed receipts of 8.5%. This reveals that the end user will effectively receive fixed payments of 12 percent (8.5 per-

cent plus 3.5 percent). Thus, when compared with the 6 percent fixed receipts under the plain-vanilla swap contract illustrated in exhibit 2, this swap contract effectively delivers 6 percent fixed receipts on a \$200 million notional amount. The end user could achieve an offsetting increase in interest income on its portfolio of repricing assets only if that portfolio totaled at least \$200 million.

Other Variations. Other variations built into derivatives may require the end user to take certain actions or may result in changes in terms if specified events or conditions occur. For example, such variations might involve —

- Increases or decreases in the notional amount based on certain changes in interest rates.
- Increases or decreases in interest rates based on a multiplier.
- Additional payments required under specified conditions.
- A settlement payment required upon the expiration of a contract.

Some swap contracts magnify changes in the specified index rate by tying floating payments to an exponent of the index rate over a specified denominator. The risks of this variation are similar to the risks posed by written options. Consider a contract that specifies the floating rate as three-month LIBOR squared and divided by 5 percent. Assume that three-month LIBOR is 5 percent at inception. Were three-month LIBOR to climb five basis points to 5.05 percent, the increase would be magnified. The floating rate would increase ten basis points to approximately 5.10 percent (5.05 percent squared and divided by 5 percent). Thus, at this level of interest rates, an increase of one basis point in the index rate for the contract would result in an increase of two basis points in the contractual rate. In other words, one basis point on twice the stated notional amount.

Finally, the notional principal amount of certain swap contracts changes with changes in the rate to which the floating payments are indexed. These are called *index amortizing swaps*. For example, the notional principal amount may decrease when interest rates decline. Thus, the floating-rate payer would lose some of the benefit of declining interest rates but would not get a corresponding benefit if interest rates increase.

ACCOUNTING LITERATURE

Authoritative pronouncements that establish accounting for derivatives generally involve consideration of (1) designation of derivatives as hedges, (2) effectiveness of the hedge strategy, and (3) the recognition and measurement of the instrument based on items (1) and (2). Although the accounting for futures and foreign-currency forward contracts is fairly consistent and well-defined, the accounting for option, swap, and other forward contracts is more diverse and is continuing to evolve. Further, guidance does not exist for many customized instruments and authoritative accounting literature that addresses hedge accounting is limited. The EITF has dealt with a variety of issues related to certain derivatives, but not comprehensively.

In 1985, the chief accountant of the SEC wrote to the FASB to “strongly encourage a macro-level review of the accounting and financial disclosure issues” raised by financial instruments. He added that “such a project as we envision it would entail a fundamental re-examination of the recognition and measurement issues involved in financial assets and transactions which cross over industry lines.”

In January 1986, the chairs of the AcSEC and its Financial Instruments Task Force expressed similar views in a letter to the FASB, saying:

AcSEC and its task force believe the FASB’s goal for the project should be to establish broad principles for all types of financial instruments, both those that exist now and those that may emerge in the future, rather than to focus on issues regarding specific instruments as they arise.

The FASB added such a project to its agenda in May 1986. The first phase of the FASB’s project focused on disclosure of information about the extent, nature, and terms of financial instruments with off-balance-sheet credit or market risk and about concentrations of credit risk for all financial instruments. The second phase considered disclosure of fair value of financial instruments.

Recognition and measurement issues are currently being considered in other phases of the overall project.¹³ Those efforts could result in significant changes in the way futures, forward, option, swap, and other similar financial contracts are recognized and measured. The project might also develop consistent and comprehensive standards for hedge accounting. A related FASB research report, *Hedge Accounting: An Exploratory Study of the Underlying Issues*, examines hedging in detail to identify and analyze the accounting issues that stem from those activities. Readers should be alert to any final pronouncements issued as a result of the financial instruments project.

SAS No. 69, *The Meaning of Present Fairly in Conformity With Generally Accepted Accounting Principles in the Independent Auditor’s Report* (AICPA,

¹³ In November 1991, the FASB issued a Discussion Memorandum, *Recognition and Measurement of Financial Instruments*, setting forth the issues under consideration.

Professional Standards, vol. 1, AU sec. 411), describes the hierarchy of sources of established accounting principles that are generally accepted in the United States. Summarized below is a reference of accounting literature for derivatives, and further descriptions of specific pronouncements. The summaries are intended to help readers be aware of the specified authoritative literature and are not a substitute for careful reading of that literature.

Although the principles that are summarized are generally applicable only to nongovernmental entities, some may also apply to certain state and local governmental entities. Governmental Accounting Standards Board (GASB) Statement No. 20, *Accounting and Financial Reporting for Proprietary Funds and Other Governmental Entities That Use Proprietary Fund Accounting*, provides that proprietary activities should apply all FASB Statements and Interpretations issued on or before November 30, 1989, that do not conflict with or contradict GASB pronouncements. Furthermore, proprietary activities may apply all FASB Statements and Interpretations issued after November 30, 1989, that do not conflict with or contradict GASB pronouncements. (That is, they may apply all or none of the relevant FASB Statements and Interpretations issued after November 30, 1989.) The proposed GASB Technical Bulletin No. 94-a, *Disclosures about Derivatives and Similar Debt and Investment Transactions*, which was exposed on October 10, 1994, would provide for disclosures about derivatives by all state and local governmental entities.

The accounting and financial reporting provisions of AICPA Audit and Accounting Guides generally describe authoritative literature or describe practice where no such literature exists. Further, in August 1994, the AICPA exposed for public comment (by November 1994) two proposed AICPA Audit and Accounting Guides, *Banks and Savings Institutions* and *Audits of Brokers and Dealers in Securities*. Both proposed guides contain extensive discussion of derivatives and related accounting and auditing guidance. Readers should be alert to issuance of the final guides.

FOREIGN CURRENCY FUTURES AND FORWARDS

FASB Statement No. 52. FASB Statement No. 52, *Foreign Currency Translation*, provides guidance on accounting for forwards, futures, and swaps involving foreign currencies. Gains and losses on those foreign currency transactions are generally included in determining net income for the period in which exchange rates change unless the transaction hedges a foreign currency commitment or a net investment in a foreign entity. Contracts, transactions, or balances that meet FASB Statement No. 52's criteria as effective hedges of foreign exchange risk are accounted for as hedges without regard to their form. Specifically, paragraph 21 of FASB Statement No. 52 states, in part, that —

A foreign currency transaction shall be considered a hedge of an identifiable foreign currency commitment provided both of the following conditions are met:

- a. The foreign currency transaction is designated as, and is effective as, a hedge of a foreign currency commitment.
- b. The foreign currency commitment is firm.

EITF Discussions. The EITF has discussed the following issues related to foreign currency forwards.¹⁴

- Issue No. 86-25, *Offsetting Foreign Currency Swaps*, addresses how the effect of a change in exchange rates on a foreign currency swap contract should be displayed in the balance sheet.
- Issue No. 87-2, *Net Present Value Method of Valuing Speculative Foreign Exchange Contracts*, addresses whether a discounting (or net present value) approach should be used in calculating the gain or loss on unsettled speculative foreign currency forward exchange contracts under FASB Statement No. 52.
- Issue No. 87-26, *Hedging of Foreign Currency Exposure with a Tandem Currency*, addresses whether a net investment in a foreign subsidiary may be hedged using a tandem currency (that is, a currency for which the exchange rate generally moves in tandem with the exchange rate for the exposed currency).
- Issue No. 88-18, *Sales of Future Revenues*, addresses certain transactions in which an entity receives cash from an investor and agrees to make certain payments to the investor based on future revenue or income denominated in a foreign currency.
- Issue No. 91-1, *Hedging Intercompany Foreign Currency Risks*, addresses whether intercompany transactions present foreign exchange risk that may be hedged for accounting purposes, including whether that conclusion would be affected by the type of hedging instrument used (for example, forward exchange contracts or purchased foreign currency options).

FUTURES AND FORWARDS OTHER THAN FOREIGN CURRENCY FUTURES AND FORWARDS

FASB Statement No. 80. FASB Statement No. 80, *Accounting for Futures Contracts*, establishes standards of accounting for exchange-traded futures other than contracts for foreign currencies, which are addressed by FASB Statement

¹⁴ See also Issue Nos. 90-17 and 91-4 in the section "Options and Other Option-Based Derivatives" herein.

No. 52, *Foreign Currency Translation*.¹⁵ FASB Statement No. 80 requires that a change in the market value of an open futures contract be recognized as a gain or loss in the period of the change unless the contract qualifies as a hedge of certain exposures to price or interest rate risk. Immediate gain or loss recognition is also required by FASB Statement No. 80 if the futures contract is intended to hedge an item that is reported at fair value (which frequently will be the case for futures contracts used as hedges by investment companies, pension plans, and broker-dealers).

If the hedge criteria specified in FASB Statement No. 80 are met, a change in the market value of the futures contract is either reported as an adjustment of the carrying amount of the hedged item or included in the measurement of a qualifying subsequent transaction. FASB Statement No. 80 requires that entities cease accounting for a contract as a hedge if high correlation of changes in the market value of the futures contract and the effects of price or interest rate changes on the hedged item has not occurred.

Hedge accounting under FASB Statement No. 80 differs from hedge accounting under FASB Statement No. 52 in three significant ways.

1. Paragraph 21(b) of FASB Statement No. 52 precludes a foreign currency transaction from being considered a hedge unless the foreign currency commitment is firm. Paragraph 9 of FASB Statement No. 80 permits hedge accounting for certain anticipated transactions without the existence of such a firm commitment.
2. The idea of risk reduction is applied in FASB Statement No. 52 at the transaction level, but in FASB Statement No. 80 at the level of the entity's overall exposure to risk.
3. FASB Statement No. 80 permits cross-hedging. FASB Statement No. 52 generally requires that the hedge instrument be denominated in the same currency as the item being hedged.

EITF Discussions. The EITF has discussed many issues related to forward and futures contracts, including the following.

- Issue No. 84-14, *Deferred Interest Rate Setting*, addresses accounting for deferred interest-rate setting arrangements.
- Issue No. 85-6, *Futures Implementation Questions*, involves discussion of issues surrounding implementation of FASB Statement No. 80 that were

¹⁵ Paragraph 34 of the "Background Information and Basis for Conclusions" section of FASB Statement No. 80 says:

Exclusion of forward contracts from the Statement should not be construed as either acceptance or rejection by the Board of current practice for such contracts, nor should the exclusion be interpreted as an indication that the general principles of this Statement might not be appropriate in some circumstances for certain forward contracts. At some future date, the Board may address the accounting for particular types of forward contracts, and it may address the conceptual aspects of accounting for executory contracts generally.

subsequently addressed in the June 1985 issue of the FASB publication *Highlights*.

- Issue No. 86-26, *Using Forward Commitments as a Surrogate for Deferred Rate Setting*, involved discussion of accounting for the change in value of a forward commitment entered into simultaneously with the issuance of fixed-rate debt.
- Issue No. 86-34, *Futures Contracts Used as Hedges of Anticipated Reverse Repurchase Transactions*, addresses accounting for such contracts.

AICPA Audit and Accounting Guides. Paragraphs 49 through 63 of chapter 2 of the Audit and Accounting Guide *Audits of Investment Companies* address accounting by those entities for commodity and financial futures contracts, forward placement commitment contracts, and standby commitments.

SWAPS

FASB Statement No. 52 addresses accounting for foreign currency swaps. There is no comprehensive guidance on accounting for noncurrency swaps.

EITF Discussions. EITF discussions of related swap issues include the following.

- Issue No. 84-7, *Termination of Interest Rate Swaps*, addresses recognition of gain or loss on the sale or the termination of an interest-rate swap.
- Issue No. 84-36, *Interest Rate Swap Transactions*, involves discussion of accounting for interest-rate swaps, including whether hedge criteria should apply and terminations. Related issues were subsequently addressed in the article "Interest Rate Swaps — Your Rate or Mine?" written by two FASB staff members, Keith Wishon and Lorin S. Chevalier, published in the September 1985 issue of the *Journal of Accountancy*.
- Issue No. 87-1, *Deferral Accounting for Cash Securities That Are Used to Hedge Rate or Price Risk*, addresses accounting for hedges of interest-rate swap portfolios using cash securities.
- Issue No. 88-8, *Mortgage Swaps*, addresses various issues related to the recognition and measurement of mortgage swaps.

AICPA Audit and Accounting Guides. Paragraphs 76 and 77 of chapter 16 of the AICPA Audit and Accounting Guide *Audits of Savings Institutions* state:

Interest-rate swaps that are designed to reduce interest-rate risk associated with specific assets or liabilities are not generally marked to market value. Rather, the interest payments receivable and payable under the terms of the swap are accrued over the period to which the payment relates. The interest payments accrued on the swap (either the net receivable or net payable) and any swap fees paid at the inception of the swap are treated as an adjustment of interest income or expense related to the assets or liabilities being hedged.

Interest-rate swaps that are not designated as hedges should be marked to market value. Changes in the market value of the swap are recognized in income of the current period.

OPTIONS AND OTHER OPTION-BASED DERIVATIVES

There is no authoritative comprehensive accounting guidance for options and other option-based derivatives. Practice is somewhat diverse and controversial, especially in light of the differences between FASB Statements No. 52 and No. 80. AICPA Issues Paper No. 86-2, *Accounting for Options*, discusses options. However, the issues paper contains viewpoints that differ in certain respects from the conclusions in FASB Statement Nos. 52 and 80. The advisory conclusions expressed in the issues paper are not authoritative, and the FASB has advised that the existing authoritative accounting pronouncements should be followed.

EITF Discussions. EITF discussions of related issues include the following.

- Issue No. 90-17, *Hedging Foreign Currency Risk with Purchased Options*, addresses the appropriateness of hedge accounting for purchased foreign currency options under various circumstances.
- Issue No. 91-4, *Hedging Foreign Currency Risk with Complex Options and Similar Transactions*, addresses the use of hedge accounting and disclosures for other purchased foreign-currency options, written options, options purchased and written as a unit, and similar transactions.
- Issue No. 94-7, *Accounting for Financial Instruments Indexed to, and Potentially Settled in, a Company's Own Stock*, addresses financial instruments that may be settled with a specified number of shares of an entity's stock or with a cash amount calculated on the basis of the value of a specified number of shares of an entity's stock, including (1) whether the instrument should be classified as an asset or an equity instrument, (2) how gains and losses are reported, (3) whether the instrument should be accounted for separately if it is embedded in another financial instrument, and (4) how to treat the instrument for earnings per share computations.

AICPA Audit and Accounting Guides. Paragraphs 64 through 73 of chapter 2 of the AICPA Audit and Accounting Guide *Audits of Investment Companies* address accounting for options by those entities.

Paragraph 80 of chapter 16 of the AICPA Audit and Accounting Guide *Audits of Savings Institutions* states:

Interest-rate caps, floors, and collars are essentially the same as options, and they are accounted for in similar ways. Premiums paid for interest-rate caps, floors, and collars that reduce interest-rate risk are generally analogous to insurance premiums and are usually charged to expense over the term of the agreement. Premiums received for writing caps, floors, and collars are analogous to premiums received on written options. Such premiums should be deferred, and the

written cap, floor, or collar should thereafter be marked to market value. Changes in the market value of the written cap, floor, or collar are recognized in the current period.

DISCLOSURES

In addition to the disclosure provisions of the pronouncements discussed elsewhere herein, several authoritative pronouncements directly set forth disclosure requirements.¹⁶

FASB Statement No. 119. FASB Statement No. 119, *Disclosure about Derivative Financial Instruments and Fair Value of Financial Instruments*, requires disclosures about amounts, nature, and terms of derivative financial instruments that are not subject to FASB Statement No. 105 because they do not result in off-balance-sheet risk of accounting loss. It requires that a distinction be made between financial instruments held or issued for trading purposes (including dealing and other trading activities measured at fair value with gains and losses recognized in earnings) and financial instruments held or issued for purposes other than trading. FASB Statement No. 119 also amends FASB Statement Nos. 105 and 107 to require such distinction in certain disclosures required by those statements.

For entities that hold or issue derivative financial instruments for trading purposes, FASB Statement No. 119 requires disclosure of average fair value and of net trading gains or losses. For entities that hold or issue derivative financial instruments for purposes other than trading, it requires disclosure about those purposes and about how the instruments are reported in financial statements. For entities that hold or issue derivative financial instruments and account for them as hedges of anticipated transactions, FASB Statement No. 119 requires disclosure about the anticipated transactions, the classes of derivative financial instruments used to hedge those transactions, the amounts of hedging gains and losses deferred, and the transactions or other events that result in recognition of the deferred gains or losses in earnings. FASB Statement No. 119 also encourages, but does not require, quantitative information about market risks of derivative financial instruments, and also of other assets and liabilities, that is consistent with the way the entity manages or adjusts risks and that is useful for comparing the results of applying the entity's strategies to its objectives for holding or issuing the derivative financial instruments.

FASB Statement No. 119 is effective for financial statements issued for fiscal years ending after December 15, 1994, except for entities with less than \$150 million in total assets. For those entities, the statement is effective for financial statements issued for fiscal years ending after December 15, 1995.

FASB Statement No. 105. FASB Statement No. 105, *Disclosure of Information about Financial Instruments with Off-Balance-Sheet Risk and Financial Instruments*

¹⁶ Readers should be alert to any GASB Technical Bulletin as discussed on page 22 herein.

with *Concentrations of Credit Risk*, establishes requirements for all entities to disclose information principally about financial instruments with off-balance-sheet risk of accounting loss. The Statement extended disclosure practices of some entities for some financial instruments by requiring all entities to disclose the following information about financial instruments with off-balance-sheet risk of accounting loss:

- The face, contract, or notional principal amount
- The nature and terms of the instruments and a discussion of their credit and market risk, cash requirements, and related accounting policies
- The accounting loss the entity would incur if any party to the financial instrument failed completely to perform according to the terms of the contract and the collateral or other security, if any, for the amount due proved to be of no value to the entity
- The entity's policy for requiring collateral or other security on financial instruments it accepts and a description of collateral on instruments presently held

FASB Statement No. 105 also requires disclosure of information about significant concentrations of credit risk from an individual counterparty or groups of counterparties for all financial instruments.

FASB Statement No. 119 amends FASB Statement No. 105 to require disaggregation of information about financial instruments with off-balance-sheet risk of accounting loss by class, business activity, risk, or other category that is consistent with the entity's management of those instruments.

Paragraph 82 of the AICPA Audit and Accounting Guide *Audits of Savings Institutions* suggests that consideration also be given "to disclosure of the number of futures contracts open and unrecognized gains and losses on open and closed futures contracts at the balance-sheet date."

FASB Statement No. 107. FASB Statement No. 107, *Disclosures about Fair Value of Financial Instruments*, extended fair value disclosure practices for some instruments by requiring all entities to disclose the fair value of financial instruments, both assets and liabilities recognized and not recognized in the statement of financial position, for which it is practicable to estimate fair value.¹⁷ If estimating fair value is not practicable, FASB Statement No. 107 requires disclosure of descriptive information pertinent to estimating the value of a financial instrument. Disclosures about fair value are not required for certain financial instruments. (See paragraph 8 of FASB Statement No. 107.)

Paragraph 11 of FASB Statement No. 107 requires that fair values be estimated for financial instruments with no quoted prices. Paragraph 24 of the Statement

¹⁷ For entities with less than \$150 million in total assets in the current statement of financial position, the effective date of FASB Statement No. 107 is for financial statements issued for fiscal years ending after December 15, 1995.

suggests that an estimate of the fair value of a customized interest-rate swap or foreign currency contract might be based on the quoted market price of a similar financial instrument (adjusted as appropriate for the effects of the tailoring) or, alternatively, on the estimated current replacement cost of that instrument. Paragraph 25 of the Statement suggests that an estimate of the fair value of customized options (for example, put and call options on stock, foreign currency, or interest-rate contracts) may be valued using one of a variety of pricing models that are used regularly to value options.

FASB Statement No. 119 amends FASB Statement No. 107 to require that fair value information be presented without combining, aggregating, or netting the fair value of derivative financial instruments with the fair value of non-derivative financial instruments and be presented together with the related carrying amounts in the body of the financial statements, a single footnote, or a summary table in a form that makes it clear whether the amounts represent assets or liabilities.

AICPA Audit and Accounting Guides. Paragraph 84 of chapter 16 of the AICPA Audit and Accounting Guide *Audits of Savings Institutions* states:

In addition to the information required by FASB Statement No. 105. . . disclosure of information about options and interest-rate swaps might include the following:

- Options
 - The market value of options purchased and written, and the market value of option premiums paid or received
 - For options accounted for as hedges, the nature of the assets or liabilities that are being hedged
- Interest-Rate Swaps
 - The nature and purpose of the swap, including a determination of whether the swap is speculative or is intended to hedge or modify the terms of an existing asset or liability
 - The treatment of any fees received or paid
 - Interest rates on the swap at the balance-sheet date, including disclosure of whether the institution pays or receives a fixed or variable rate
 - The original and remaining term to maturity of the swap
 - Swap terminations, including the amount and method of accounting for gains and losses on swap terminations
 - The nature of any other commitments made by the institution, such as the commitment to take delivery of mortgage-backed securities at a specified price on a mortgage swap

Securities and Exchange Commission Staff Views. The staff of the SEC has increased the number of comments on and questions about disclosures in filings by public companies. Specifically, the SEC staff is requesting more detail about derivatives holdings and about companies' internal policies for monitoring and controlling derivatives activities. In a January 11, 1994, speech at the

AICPA National Conference on Current SEC Developments, an SEC staff member said that, for registrants that use derivatives as end users for asset/liability management purposes, the SEC staff was, at that time, asking for additional disclosures, including¹⁸ —

- A disaggregated description of the outstanding derivative instruments, including a description of the type, amount expected at maturity, and fair value of these instruments;
- A reconciliation of the notional or contract amounts from the beginning of the period to the end of the period — that is, a summary of the change in the notional or contract amounts resulting from new, terminated, and matured or expired contracts;
- Disclosures of the amount of deferred gains and losses from hedging or risk-adjusting activities and the expected amortization of such amounts on a period-by-period basis; and
- The current period impact of derivatives activities on either net interest income, if applicable (for example, if the registrant is a financial institution), or income from continuing operations.

In a speech given September 8, 1994, to the AICPA National Conference on Savings Institutions, an SEC staff member noted that the staff “monitors disclosures of derivatives activities in connection with its reviews of filings, and, through the comment process, may request expanded disclosures in filings where necessary [to understand] the type, extent and potential effects of such activities.” The staff member said:¹⁹

In addition to disclosures currently required by generally accepted accounting principles and those proposed in the FASB exposure draft [on disclosures about derivative financial instruments], disclosures which the staff believes should be provided concerning a registrant’s activities involving derivative instruments include —

- Revenues from derivatives trading, quantified and separately identifying revenues from foreign exchange, interest, equity and other major types of derivative products.
- A description of the registrant’s significant end user activities indicating the specific risk being managed and the type of instrument and strategy used to manage the risk (for example, “foreign currency swaps [specify currency, for example, yen, mark] to manage exchange rate risk in export sales”) including quantified information related to the on balance sheet position being managed and the related derivative positions.
- Outstanding end user positions at each balance sheet date including major types and terms of instruments (for example, “\$30 million

¹⁸ As a matter of policy, the SEC disclaims responsibility for any private statements by any of its employees. The views expressed in the speech were those of the staff member and do not necessarily represent the views of the SEC or the speaker’s colleagues on the SEC staff.

¹⁹ See footnote 18 herein.

notional swap/pay fixed xx%, receive LIBOR + x% — through June 1996”).

- Management methods and quantified parameters used to monitor and control risk management strategies, including stress testing and sensitivity analyses.

The SEC staff member added that “the disclosures provided by individual registrants will necessarily reflect differences in the risk management activities. As monitoring of disclosures continues the staff will consider the need for issuance of guidance on such disclosures.”

At the same conference, another SEC staff member offered the following remarks about written options that are embedded in interest rate swaps:

Several registrants have recognized sizable losses from interest rate swaps that have significant embedded written options. These swaps, which for purposes of these remarks are called “leveraged swaps,” contain embedded written options that enhance the performance of the swap in certain circumstances and dramatically reduce the performance of the swap in other circumstances. That is, these swaps, because of their written option features, are asymmetrical — they have limited upside opportunity and significant or unlimited downside risk, particularly when multiplied by the leveraged feature. In addition, the downside risks of these swaps often are not offset by upside opportunities from any designated on-balance-sheet instruments (for example, instruments with embedded purchased options). Therefore, if certain circumstances occur and the obligations under the embedded written option are triggered, the company incurs an economic loss and that loss is not offset by gains from other instruments (for example, there are no offsetting purchased options).

Needless to say, because of (i) the asymmetrical nature of these instruments, (ii) the significant downside risks associated with these instruments, and (iii) the fact that the company may incur an economic loss that is not offset by gains from other instruments (for example, there are no offsetting purchased options), most, if not all, believe that leveraged swaps should be accounted for at fair value, with changes in that fair value recognized immediately in income.

At that time, the SEC staff member also encouraged registrants to disclose descriptive numerical information about swaps and other instruments that have embedded written options.

OTHER PRONOUNCEMENTS

FASB Statement No. 115. Paragraph 115 of FASB Statement No. 115, *Accounting for Certain Investments in Debt and Equity Securities*, discusses the effect that Statement may have on the accounting for derivatives that are hedges of securities whose accounting is changed by FASB Statement No. 115.

FASB Interpretation No. 39. Accounting Principles Board (APB) Opinion No. 10, *Omnibus Opinion — 1966*, paragraph 7, says that “it is a general principle of accounting that the offsetting of assets and liabilities in the balance sheet is improper except where a right of setoff exists.” FASB Interpretation No. 39,

Offsetting of Amounts Related to Certain Contracts, defines *right of setoff* and specifies what conditions must be met to have that right. It also addresses the applicability of that general principle to forward, interest-rate swap, currency swap, option, and other conditional or exchange contracts and clarifies the circumstances in which it is appropriate to offset amounts recognized for those contracts in the statement of financial position. In addition, it permits offsetting of fair value amounts recognized for multiple forward, swap, option, and other conditional or exchange contracts executed with the same counterparty under a master netting arrangement.²⁰

FASB Statement No. 104. FASB Statement No. 104, *Statement of Cash Flows—Net Reporting of Certain Cash Receipts and Cash Payments and Classification of Cash Flows from Hedging Transactions*, amended FASB Statement No. 95, *Statement of Cash Flows*, to permit cash flows resulting from futures contracts, forward contracts, option contracts, or swap contracts that are accounted for as hedges of identifiable transactions or events to be classified in the same category as the cash flows from the items being hedged, provided that accounting policy is disclosed.

²⁰ In September 1994, the FASB issued an exposure draft of a Proposed Interpretation, *Offsetting of Amounts Related to Certain Repurchase and Reverse Repurchase Agreements*. Readers should be alert to any final interpretation issued.

AUDITING LITERATURE

As discussed in this report, derivatives may be complex and volatile, and it is sometimes difficult to understand their features, risks, and intended uses. Further, accounting issues involving derivatives can be contentious. Also, management's intentions may affect the applicable accounting. Instruments' reported financial statement amounts may involve accounting estimates that are based on subjective factors. Those matters may increase audit risk in audits of the financial statements of end users of all kinds of derivatives. This section discusses the auditing literature applicable to derivatives in the context of an audit of financial statements performed in accordance with generally accepted auditing standards (GAAS). GAAS embraces a concept that requires an auditor to plan and perform the audit to obtain reasonable assurance that an entity's financial statements, taken as a whole, are free of material misstatement. Thus the general discussions of auditing contained in this report are descriptive only and cannot take the place of a careful reading of the specified authoritative literature. This section is subdivided into discussions of audit objectives and planning, consideration of internal controls over financial reporting of derivatives activities, and substantive tests.

OBJECTIVES AND PLANNING

Learning About the Extent of Derivatives Use. SAS No. 22, *Planning and Supervision* (AICPA, *Professional Standards*, vol. 1, AU sec. 311), addresses the considerations and procedures involved in planning and supervising financial statement audits, including preparation of an audit program and obtaining knowledge of the entity's business. SAS No. 22 recognizes that the nature, timing, and extent of planning vary with the size and complexity of the entity whose financial statements are being audited, as well as with the auditor's experience with the entity and knowledge of the entity's business.

A key question for addressing the audit of derivatives is whether (and to what extent) the entity engages in derivatives activities. One source of information to consider would be past derivatives activities. However, entrance into derivatives markets by a growing number of participants — such as commercial enterprises, insurance companies, not-for-profit entities, and state and local governments — may be recent. Accordingly, the absence of past derivatives activities by an entity may not be a reliable indicator of whether the entity currently engages in such derivatives activities. In general, a good starting point would be to gather information about the nature and extent of an entity's derivatives through direct inquiry of management, particularly those in the treasury or finance function. It may also be helpful, when planning in this area, to review minutes of the board of directors or its audit, finance, or other committees, and reports prepared by the entity's internal audit function that address an entity's treasury or finance function. Review of activity in typical

transaction accounts (for example, investments) and inspection of actual contracts may also be helpful. Interim financial statements may be an added source of information in this area.

Depending on the extent of derivatives activities, the auditor may decide to involve in the audit process personnel knowledgeable about derivatives. After assessing risk, the auditor may decide also that it is necessary to use the work of specialists.

Assessing Risk. Once the auditor has gathered information about the nature and extent of derivatives activities, such information can be used in assessing audit risk and otherwise carrying out the engagement in accordance with GAAS. Audit risk is defined in SAS No. 47, *Audit Risk and Materiality in Conducting an Audit* (AICPA, *Professional Standards*, vol. 1, AU sec. 312), as “the risk that the auditor may unknowingly fail to appropriately modify his [or her] opinion on financial statements that are materially misstated.” SAS No. 47 explains that audit risk and materiality are considered with other matters in determining the nature, timing, and extent of auditing procedures and in evaluating the results of those procedures. SAS No. 47 further describes audit risk as the product of three component risks:

1. *Inherent risk* involves the susceptibility of an assertion to a material misstatement in the absence of internal controls.
2. *Control risk* is the risk that a material misstatement will not be prevented or detected by internal controls.
3. *Detection risk* is the risk that the auditor will not detect a material misstatement.

(The information contained in the section “Risk Inherent in Derivatives Transactions” herein may be helpful to the auditor in assessing audit risk associated with derivatives.) Further, factors such as the following may indicate higher than normal audit risk:

- Sudden or rapid growth in derivatives activities
- Significant use of derivatives without relevant expertise within the entity
- High volatility in interest rates, currencies, or other factors affecting the values of derivatives
- Inclusion of embedded options or other complex contractual terms
- Uncertainty regarding the financial stability of a counterparty
- Concentrations of credit risk with one counterparty
- Transactions involving derivatives having thin markets
- Large one-time transactions
- Little involvement by senior management or the board of directors in authorization of significant derivatives activities

- Absence of authorized limits for derivatives activities or noncompliance with such limits
- Failure to adequately segregate duties involving the execution of derivatives transactions from the accounting and internal audit functions
- Dependence on one individual for all organizational expertise on derivatives activities
- Inadequate information to effectively monitor derivatives transactions, including inadequate or untimely information about derivatives values

Of course, these factors should be considered in the context of the complexity and extent of the entity's derivatives activities and the entity's financial statements taken as a whole.

Defining Audit Objectives. Financial statement assertions about derivatives activities are similar to assertions for other transactions — completeness, existence, accuracy, valuation, ownership, and disclosure. But because the notional or contractual amounts for derivatives generally are not recognized in the statement of financial position (that is, they are off-balance-sheet), the approach to achieving audit objectives may differ. Objectives of audit procedures for derivatives transactions might include those designed to test that —

- Derivatives contracts have been executed and processed according to management's authorizations.
- Income on derivatives, including premiums and discounts, is properly measured and recorded.
- Derivatives accounted for as hedges meet the applicable criteria for hedge accounting.
- Changes in the market value of derivatives have been appropriately accounted for in the circumstances (whether or not hedge accounting is used).
- Information about derivatives in the financial statements is accurate and complete, and has been properly classified, described, and disclosed.

INTERNAL CONTROL STRUCTURE

SAS No. 55, *Consideration of the Internal Control Structure in a Financial Statement Audit* (AICPA, *Professional Standards*, vol. 1, AU sec. 319), provides guidance on the auditor's consideration of an entity's internal control structure in an audit of financial statements performed in accordance with GAAS.²¹ It describes the ele-

²¹ The Auditing Standards Board plans to issue, in late 1994, an exposure draft of a proposed SAS which would reconcile SAS No. 55 with the Committee of Sponsoring Organizations of the Treadway Commission's (COSO's) report entitled *Internal Control—Integrated Framework* (see the "Internal Control Considerations" section herein). Readers should be alert to any final pronouncement.

ments of an internal control structure and explains how an auditor should consider the internal control structure in planning and performing an audit. SAS No. 55 requires that, in all audits, the auditor obtain sufficient understanding of each of the three elements (the control environment, accounting system, and control procedures) to plan the audit by performing procedures to understand the design of policies and procedures relevant to audit planning and whether they have been placed in operation.

The level of sophistication of an entity's internal control structure as it relates to derivatives activities generally varies. Determinants include the extent of the entity's use of derivatives and the relative complexity of the instruments used. An effective internal control structure over financial reporting of derivatives transactions generally would include adequate segregation of duties, management oversight, and other policies and procedures designed to reasonably assure that —

- Derivatives transactions are executed in accordance with the entity's written policies (as approved by the board of directors or its committees).
- Information relating to derivatives is complete and accurate when entered into the accounting system.
- Misstatements in the processing of accounting information for derivatives are prevented or detected in a timely manner.
- Derivatives activities are monitored on an ongoing basis to recognize and measure events affecting related financial statement assertions.

If the nature of the entity's derivatives use is considered to involve more than normal risk, the auditor may decide to assess control risk at the maximum level and take a primarily substantive approach.²²

The Appendix to this report contains specific questions the AICPA has developed about derivatives activities. Many answers to the questions in the Appendix contain internal control considerations an entity might use in establishing effective policies and procedures. Paragraph 87 of chapter 16 of the AICPA Audit and Accounting Guide *Audits of Savings Institutions* describes written policies and procedures concerning derivatives for savings institutions.

Several publications listed in the Bibliography to this report contain discussions of controls over derivatives activities. Although some recommendations go beyond financial reporting controls to discuss operational and

²² Although the auditor may be able to assess internal control risk as low (thereby modifying the nature, timing, or extent of substantive testing considered necessary) derivatives transactions often are not homogeneous. It may be more efficient and effective to adopt a primarily substantive approach. Such an approach may be particularly efficient where the number of contracts or transactions is few.

compliance controls, the discussion may be helpful in understanding a particular entity's internal control structure over financial reporting.²³

The auditor may consider applying procedures such as inquiry, observation, and inspection of documents to obtain an understanding of internal control policies and procedures. Ultimately, the auditor must decide on the nature, timing, and extent of substantive tests to be applied.

SUBSTANTIVE TESTS

Many derivatives are negotiated contracts between the end user and its counterparty (for example, most interest-rate swaps). Because such transactions usually are not routine, a substantive audit approach may be the most effective means of achieving the planned audit objectives. Procedures performed in other financial statement areas might also provide evidence about the completeness of derivatives transactions. These procedures may include tests of subsequent cash receipts and payments, cutoff bank statements, and the search for unrecorded liabilities. Examples of other substantive procedures that may be applied specifically to derivatives transactions are illustrated below. The auditor is responsible for determining the extent of substantive testing considered necessary, based on the nature and significance of the related transactions and the assessment of audit risk. SAS No. 31, *Evidential Matter* (AICPA, *Professional Standards*, vol. 1, AU sec. 326), provides guidance on evaluating evidential matter and relating it to assertions in an entity's financial statements.

Propriety of Accounting. A primary audit objective usually addressed through substantive procedures is determining the propriety of the entity's accounting for derivatives. To do so, the auditor gains an understanding of management's objectives in engaging in derivatives transactions. For derivatives accounted for as hedges, the auditor generally tests whether the applicable hedging criteria are met. (The literature containing those criteria is discussed in the section "Accounting Literature" herein.) This might include tests of the entity's documentation of correlation results and determining that the end user is appropriately distinguishing between speculating and hedging. The auditor also may examine support for completed transactions to ascertain that they have been accounted for appropriately. For example, the auditor might review transactions that resulted in deferrals of losses during the period to determine whether they qualified for deferral accounting. Similarly, the auditor might review gains recognized during the period to determine whether they were hedging gains that should have been deferred.

²³ Inadequate or deficient controls should be considered in the context of SAS No. 60, *Communication of Internal Control Structure Related Matters Noted in an Audit* (AICPA, *Professional Standards*, vol. 1, AU sec. 325). SAS No. 60 provides guidance on identifying and reporting conditions that relate to an entity's internal control structure over financial reporting observed during an audit of financial statements in accordance with GAAS.

Review of Contracts. If the entity's derivatives are not exchange traded or otherwise standardized, the auditor may consider inspecting the contracts and related transactions tickets to understand the terms of the transaction. Developing an understanding of the contract terms by reading the contract might include identifying nonstandard features, such as the existence of embedded options. Nonstandard features may significantly increase the risks and complexities of the transactions and may involve the potential accounting and disclosure consequences.

Analytical Procedures. SAS No. 56, *Analytical Procedures* (AICPA, *Professional Standards*, vol. 1, AU sec. 329), provides guidance on the use of analytical procedures in the planning and review stages of audit engagements.²⁴ Analytical procedures might also be effectively used as a substantive test to obtain evidential matter about particular assertions related to derivatives transactions.

Confirmation. SAS No. 67, *The Confirmation Process* (AICPA, *Professional Standards*, vol. 1, AU sec. 330), discusses the relationship of confirmation procedures to the assessment of audit risk, the design of confirmation requests, the performance of alternative procedures, and the evaluation of confirmation results.²⁵ Guidance on the extent and timing of confirmation procedures is found in SAS No. 39, *Audit Sampling* (AICPA, *Professional Standards*, vol. 1, AU sec. 350), SAS No. 47, *Audit Risk and Materiality in Conducting an Audit* (AICPA, *Professional Standards*, vol. 1, AU sec. 312), and SAS No. 45, *Omnibus Statement on Auditing Standards—1983* (AICPA, *Professional Standards*, vol. 1, AU sec. 313).

Auditing Fair Values and Other Estimates. SAS No. 57, *Auditing Accounting Estimates* (AICPA, *Professional Standards*, vol. 1, AU sec. 342), provides guidance on auditing accounting estimates (such as estimates of fair values). SAS No. 57 discusses how an auditor obtains an understanding of how management developed estimates, concentrating on the key factors and assumptions used. It also discusses how the auditor may review and test the process used by management to develop an estimate.

The fair value of certain derivatives, such as exchange-traded options, is generally readily available from independent pricing sources. Such sources include financial publications or brokers and dealers independent of the entity. Determining the fair value of other derivatives can be difficult, however, particularly where the transaction has been customized for an end user. Calculation of the fair value of customized interest-rate swaps, for example, may require various quantitative assumptions and complex mathematical modeling. Calculations of such fair values also are complicated by subjective value

²⁴ Paragraphs 90 and 91 of chapter 16 of the AICPA Audit and Accounting Guide *Audits of Savings Institutions* provide related examples of analytical procedures that might be useful in the audit of financial statements of those entities.

²⁵ Paragraph 92 of chapter 16 of the AICPA Audit and Accounting Guide *Audits of Savings Institutions* provides specific guidance related to audits of the financial statements of those entities.

considerations that depend on the specifics of the transaction (such as the credit risk associated with a specific counterparty). Complex valuation models also involve the risk of errors in either data entry or assumptions, or that the model is not appropriately designed or tested. The auditor might consider it necessary to involve specialists in assessing the entity's fair value estimates or related models. SAS No. 73 provides guidance on using the work of a specialist. As described in paragraph 3, the guidance of SAS No. 73 applies when an auditor uses a specialist's work as evidential matter in performing substantive tests to evaluate material financial statement assertions.

EVALUATION OF AUDIT TEST RESULTS

In summary, the auditor, as a result of testing derivatives transactions, should evaluate the results in the context of the entity's financial statements as a whole. SAS No. 53, *The Auditor's Responsibility to Detect and Report Errors and Irregularities* (AICPA, *Professional Standards*, vol. 1, AU sec. 316), provides guidance on the evaluation of audit test results. Paragraph 14 of SAS No. 57 and paragraph 29 of SAS No. 47 discuss further that the auditor is to evaluate the reasonableness of estimates in relationship to the financial statements taken as a whole.

INTERNAL CONTROL CONSIDERATIONS

As members of the Committee of Sponsoring Organizations of the Treadway Commission (COSO), the AICPA, the Financial Executives Institute, the American Accounting Association, the Institute of Internal Auditors, and the Institute of Management Accountants issued *Internal Control—Integrated Framework* in September 1992. That report, in four parts, includes a *Framework* volume that defines internal control, describes its components, and provides criteria against which managements, boards, or others can assess their control systems.²⁶ The COSO framework, therefore, is a good starting point for management evaluation of controls over derivatives activities. An entity's internal controls over derivatives activities may relate to three different but interrelated questions:

1. To what extent are operational objectives concerning derivatives being achieved?
2. Is published financial information about derivatives being prepared reliably and in conformity with GAAP?
3. Is the entity complying with related laws, regulations, and contractual agreements governing its derivatives activities?

The COSO has a project under way to develop tools by which entities can use the framework to develop or assess controls over derivatives activities that are responsive to these questions.

²⁶ In May 1994, COSO issued an addendum to the volume entitled *Reporting to External Parties*. The addendum discusses the issue of, and provides a vehicle for, expanding the scope of a management report on internal control to address additional controls pertaining to safeguarding of assets, as defined in the addendum.

APPENDIX: DETAILED QUESTIONS ABOUT DERIVATIVES*

Following are specific questions the AICPA has developed about derivatives activities. The AICPA hopes these questions can help top management and boards of directors of all types of enterprises gain a better understanding of their entity's derivatives activities.

The extent of the entity's use of derivatives and the relative complexity of the instruments used are important determinants of the necessary level of sophistication of the entity's control and monitoring systems for derivatives activities.

1. Has the board established a clear and internally consistent risk management policy, including risk limits (as appropriate)?

Are our objectives and goals for derivatives activities clearly stated and communicated? To what extent are our operational objectives for derivatives being achieved? Are derivatives used to mitigate risk or do they create additional risk? If 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?

2. Are management's strategies and implementation policies consistent with the 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?

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

Internal controls over derivatives activities should be monitored on an ongoing basis, and should also be subject to separate evaluations. Who is evaluating controls over derivatives activities? Do they bring the appropriate technical expertise to bear? Are deficiencies being identified and reported upstream? Are duties involving execution of derivatives transactions segregated from other duties (for example, the accounting and internal audit functions)?

* This document was released in a press briefing on June 15, 1994, and was originally published in the *CPA Letter* in July/August 1994.

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

What are the entity's risk exposures, including derivatives? Internal analyses should include quantitative and qualitative information about the entity's derivatives activities. Analyses should address the risks associated with derivatives, which include —

- Credit risk (the possible financial loss resulting from a counterparty's failure to meet its financial obligations)
- Market risk (the possible financial loss resulting from adverse movements in the price of a financial asset or commodity)
- Legal risk (the possible financial loss resulting from a legal or regulatory action that could invalidate a financial contract)
- Control risk (the possible financial loss resulting from inadequate internal control structure)

Are our derivatives transactions standard for their class (that is, plain vanilla) or are they more complex? Is the complexity of derivatives transactions inconsistent with the risks being managed? The entity's risk assessment should result in a determination about how to manage identified risks of derivatives activities. Has management anticipated how it will manage potential derivatives risks before assuming them?

5. Are personnel with authority to engage in and monitor derivative 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? The complexity of derivatives activities should be accompanied by development of personnel. For example, do employees involved in derivatives activities have the appropriate technical and professional expertise? 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 activities? How do we ensure the integrity, ethical values, and competence of personnel involved with derivatives activities?

6. Do the right people have the right information to make decisions?

What information about derivatives activities are we identifying and capturing, and how is it being communicated? The information should address both external and internal events, activities, and conditions. For example, are we capturing and communicating information about market changes affecting derivatives transactions and about changes in our strategy for the mix of assets and liabilities that are the focus of risk management activities involving derivatives? Is this information being communicated to all affected parties?

Are the analysis and internal reporting of risks the company is managing and the effectiveness of its strategies comprehensive, reliable, and well-designed to facilitate oversight? The board should consider derivatives activities in the context of how related risks affect the achievement of the entity's objectives—economic, regulatory, industry, or operating. For example, do derivatives activities increase the entity's exposure to risks that might frustrate, rather than further, achievement of these objectives?

Do we mark our derivatives transactions to market regularly (and, if not, why not)? Do we have good systems for marking transactions to market? Have the systems been tested by persons independent of the derivatives function? Do we know how the value of our derivatives will change under extreme market conditions? Is our published financial information about derivatives being prepared reliably and in conformity with generally accepted accounting principles?

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