Financial reporting for financial instruments and institutions is undergoing a period of unprecedented change and salience for financial analysis. In the past five years, the Financial Accounting Standards Board (FASB), the primary accounting standards setter in the United States, has issued major standards on derivatives and hedging and on transfers of financial instruments including securitizations. Aspects of these standards reflect the FASB’s attempt to address the limitations of prior accounting and disclosure rules that provided the setting for the unexpected huge losses recorded by firms that ineffectively hedged using derivatives during the interest rate run-up in 1994 (e.g., Orange County, California; Gibson Greetings; Procter & Gamble; and Metallgesellschaft) or that held subordinated residual interests from securitizations during the hedge fund crisis of 1998 (e.g., subprime mortgage banks). The Securities and Exchange Commission (SEC) developed extensive market risk disclosure requirements during this period for much the same reasons. This change will continue for the foreseeable future, with the FASB and the Joint Working Group of Standards Setters (a group of 14 international standards setters) recently proposing and providing possible frameworks for fair value accounting for essentially all financial instruments.

This rapid evolution of financial reporting for financial instruments has provided users of financial reports with substantial new information but with two significant drawbacks that can obscure how firms, especially financial institutions, generate or destroy value using such instruments. First, current accounting for financial instruments reflects a “mixed attribute” model, with some instruments recognized at fair value and others at amortized cost. This model obscures the economics of natural hedges in which the two sides of the hedge are recognized using different valuation attributes, yielding excess volatility in owners’ equity and net income. For example, commercial banks often hold investment securities recognized at fair value that are natural hedges of deposits or debt recognized at amortized cost. While financial report users can address this problem using required footnote disclosures...
of the fair values of all financial instruments, these disclosures are invariably poorly integrated with the other information in the report, forcing users to perform this integration.

Second, fair value accounting, while preferable to amortized cost accounting, does not constitute a complete description of financial instruments. For financial instruments other than securities that are publicly traded in liquid markets, fair values typically include nontrivial estimation subjectivity and noise. These estimation errors are of particular concern for financial instruments that are highly sensitive to valuation assumptions, such as subordinated residual interests from securitizations or complex derivatives. Thus, the fair values of financial instruments need to be supplemented with information about their sensitivity to valuation assumptions. Relatedly, financial instruments can be risky and financial transactions often involve complex partitioning of risk among various parties. Thus, the fair values of financial instruments need to be analyzed jointly with information about their market and other risks. While financial reports do contain some information in this regard, the quality, comparability across firms, and integration of this information are again poor, forcing users to rework and integrate this information.

The primary purpose of this book is to provide users with the tools to exploit fully the various sources of information about the fair values and risks of financial instruments provided in financial reports, in order to construct the most coherent possible story about how firms generate or destroy value using financial instruments. In serving this purpose, the focus is on financial institutions, which provide the best available settings in which to learn disciplined analysis of financial instruments for two reasons.

1. The value and risk of financial instruments depend on the economic contexts in which they are embedded. Financial institutions constitute specific understandable contexts that primarily involve financial instruments or transactions. Moreover, financial institutions frequently are required by industry regulators to provide extensive risk disclosures, which elucidate their contexts.

2. Financial institutions generally have more extensive ranges and lengthier histories of specific financial transactions than nonfinancial firms, and so are more likely to have experienced the significant issues that apply to those transactions. For example, readers interested in securitizations of trade receivables by nonfinancial firms will surely find that the examples of mortgage banks’ securitizations of residential mortgages in Chapter 8 generalize to their concerns, since these examples clearly indicate the conditions under which securitization accounting works well and those under which it is fragile.

The remainder of this chapter provides important perspectives and terminology regarding financial instruments and institutions. The first section
explains the four main ingredients involved in using financial report information to construct the most coherent possible story about how firms generate or destroy value using financial instruments. As discussed above, the two most important ingredients are fair value accounting for financial instruments and disclosures of the estimation sensitivity and risk of these instruments. The third ingredient pertains to financial transactions, such as securitizations, leasing, and reinsurance, in which the value and risk of underlying financial instruments are partitioned among various parties. While the simplest and most natural way to view these transactions is using a fair value partitioning (financial components) perspective, in cases of disproportionate risk retention by the firm under consideration, users need to temper this by a risk partitioning perspective. Finally, users need to describe financial transactions as financial, even though in many cases, such as leasing and insurance, they are treated as operating under current financial reporting rules. These four ingredients are applied repeatedly in the various financial analyses described in this book.

The second section describes the various activities and risks of financial institutions and mentions specific useful sources of information provided in financial reports about these activities and risks. Financial report users need to recognize that historically distinct types of financial institutions increasingly perform the same or similar activities, and so it is most important to distinguish institutions based on the activities and risks in which they engage. Financial analyses using the specific types of information described in this section are illustrated throughout this book. In the last section, the valuation of financial institutions in practice is discussed.

**MAIN INGREDIENTS OF THE ANALYSIS OF FINANCIAL INSTRUMENTS**

**Fair Value Accounting**

This section explains why and how fair value accounting describes financial instruments better than amortized cost accounting, especially when the firm under consideration is a financial institution. Definitions for financial instruments, fair value accounting, and amortized cost accounting that are used throughout the book are also provided.

The term “financial instruments” as defined by the FASB and as used in this book includes financial assets and liabilities but not the firm’s own equity. The firm’s own equity is a financial instrument, of course, just not one for which fair valuation is contemplated. Financial assets are contractual claims to receive cash or another financial instrument on favorable terms or ownership interests in another firm. Financial liabilities are contractual claims to pay cash or another financial instrument on unfavorable terms.
The fair value of a financial instrument is an estimate of the price at which the instrument could be traded between two willing parties at the current time, and so it reflects current expectations of the cash flows and priced risks of the instrument. Fair values can be estimated either by observing the market prices for the financial instrument or similar instruments or by using an accepted valuation model.

Full fair value accounting involves three aspects. On the balance sheet, it involves recognition of financial instruments at fair value. In the United States, this aspect of fair value accounting currently is required only for trading and available-for-sale securities, derivatives, and hedged items in designated effective fair value hedges. On the income statement, full fair value accounting involves the recognition of unrealized gains and losses on financial instruments in net income in the period they occur, which often is prior to their realization through the sale or repurchase of the instruments. This aspect of fair value accounting currently is required in the United States only for trading securities, derivatives other than those involved in effective cash flow hedges, and hedged items under fair value hedges. In particular, this aspect is not required for available-for-sale securities or derivatives involved in effective cash flow hedges, despite the fact that they are recognized at fair value on the balance sheet. Also on the income statement, full fair value accounting involves calculating interest revenue or expense as the fair value of the financial instrument times the applicable current market interest rate during the period. This aspect of fair value accounting is not required for any financial instrument under current financial reporting rules in the United States. Interest usually is calculated on an amortized cost basis; when it is not, it is combined with gains and losses, and the total change in the value of the financial instrument is reported on a single line on the income statement, as is often the case for trading securities and derivatives.

Fair value accounting for financial instruments is increasingly feasible for two reasons:

1. The markets for financial instruments have become much richer over time. For example, risky assets, such as commercial loans that previously were difficult to trade, now can be securitized.

2. Financial theory, such as options pricing, has developed and been applied successfully in many contexts by practitioners.

The fair value of most financial instruments now can be estimated with a reasonable degree of precision either through observation of the market prices of similar instruments or through the use of accepted valuation models. For financial instruments that currently cannot be fairly valued with a reasonable degree of precision, the proper mind-set is not that amortized cost is unconditionally preferable to fair value accounting but rather that markets or valuation models simply need more time to develop sufficiently for those instruments to be fairly valued.
Financial institutions typically hold sizable portfolios of financial instruments. These instruments often have correlated values—that is, they hedge or accentuate risks at the portfolio level. Fair value accounting for all of the financial instruments in a portfolio is the simplest way to account for these correlations. In particular, gains and losses on effective hedges of one financial instrument by another will offset in net income. In contrast, gains and losses on ineffective hedges or speculative positions will not so offset.

The alternative to fair value accounting, amortized cost accounting, uses expectations of cash flows and priced risks determined at initiation to account for financial instruments throughout their life. Amortized cost accounting has three undesirable features compared to fair value accounting. First, amortized cost accounting uses old information and so provides untimely measures of the value of financial instruments on the balance sheet. This untimeliness resolves only as financial instruments amortize or when they are sold or repurchased.

Second, since financial institutions typically hold portfolios of financial instruments initiated at different times, amortized cost accounting provides measures of the values of these instruments that reflect expectations of cash flows and priced risks at different times. This yields noncomparability problems on both balance sheet and income statement. For example, net interest income for a commercial bank may include interest revenue that is based on older interest rates than those reflected in interest expense; if so, net interest income does not reflect the bank’s interest rate spread at any point in time, and so it is likely to be a poor predictor of future net interest income. Admittedly, hedge accounting may mitigate these limitations of amortized cost accounting, but hedge accounting is more complex and less transparent than fair value accounting for all financial instruments. Moreover, hedge accounting applied to specific hedging relationships within a portfolio, as is required in most cases under current accounting rules, need not capture the effects of hedging at the portfolio level.

Third, amortized cost accounting provides firms with the ability to manipulate net income through realizing gains and losses on the sale of financial assets or repurchase of financial liabilities. For all three reasons, amortized cost provides a poor basis for accounting for financial instruments and institutions, especially given the existence of increasingly complex and sensitive financial instruments whose values are subject to rapidly changing information and market prices for risk.

Advocates of amortized cost accounting for financial instruments by financial institutions usually make two related arguments on its behalf.

1. They argue that the managers of financial institutions often do not manage the fair values of financial instruments, since these values reflect changes in interest rates and other market prices that are outside their control. Instead they manage investment and financing decisions that
yield income on financial assets that is expected to exceed the expense associated with financing those instruments over their whole lives.

2. They argue that these managers conceptualize financial institutions’ risk not as the variability of their value over short periods but rather as the variability of their net income or cash flows over long periods.

Neither of these arguments makes much sense for most financial institutions. The current interest rates and other market prices embedded in the fair values of financial instruments are empirically better predictors of future market prices than are the differentially old market prices embedded in amortized costs. Thus, the managers of financial institutions that do not pay attention to the current fair values of their financial instruments are likely to find that they are unable to generate income or cash flow going forward. As discussed, most financial institutions hold portfolios of financial instruments, and these instruments usually trade in reasonably liquid markets. If financial institutions require liquidity, they usually can sell their financial assets. In this regard, fair value is the best available estimate of the sales price of assets and thus of financial institutions’ liquidity. More generally, value variability, not income or cash flow variability, is clearly the right risk concept for all but the most illiquid financial institutions.

The current state of accounting for financial instruments and instruments in the United States typically is described as reflecting a “mixed attribute” model, meaning it is partially fair value and partially amortized cost-based. In fact, accounting for financial instruments still is primarily amortized cost-based, with an incomplete form of fair value accounting used only for trading and available-for-sale securities subject to FASB Statement of Financial Accounting Standards (SFAS) No. 115, Accounting for Certain Investments in Marketable Securities (1993), derivatives and hedged items under designated effective fair value hedges subject to SFAS No. 133, Accounting for Derivative Instruments and Hedging Activities (1998) and a few other minor items. The state of disclosure is somewhat better with SFAS No. 107, Disclosures about Fair Value of Financial Instruments (1991) requiring footnote disclosure of the fair values of most financial instruments. These disclosures are invariably poorly integrated with the management discussion and analysis and other portions of the financial report, however, and so are not as informative as recognizing financial instruments at fair value in the financial statements.

Things should improve in the not-too-distant future, however. The increasing feasibility of fair value accounting for financial instruments has led the FASB to the conclusion, stated in its Preliminary Views on Major Issues Related to Reporting Financial Instruments and Certain Related Assets and Liabilities at Fair Value, that essentially all financial instruments should be recognized in the financial statements at fair value once the conceptual and measurement uncertainties are resolved. This conclusion implies that fair
value accounting for financial instruments will evolve and expand over time. Thus, it is important for financial report users to develop a robust intuition about the nature, strengths, and weaknesses of fair value accounting, so that they can understand and use the information provided by new standards as they arise. Developing such intuition is a primary purpose of this book.

While preferable to amortized cost accounting, fair value accounting does not provide a full description of financial instruments. Three general threats to the economic descriptiveness of fair value accounting exist.

1. When estimates are required to calculate fair values, as usually is the case for financial instruments other than securities that are publicly traded in liquid markets, a degree of subjectivity and noise is inevitably involved. This degree varies substantially across types of financial instruments, and financial instruments do exist for which fair value accounting is more problematic than amortized cost accounting.

2. Fair value estimation errors are effectively leveraged in transactions such as risky asset securitizations in which a low risk claim to underlying financial instruments is transferred to another party while a risky residual claim is retained. The fair value assigned to the residual claim typically includes most or all of the estimation error in the fair value of the underlying financial instruments.

3. Even for financial institutions, it is unlikely that all their economic assets and liabilities are or will ever be fair valued, either because of estimation difficulties or because some of these assets and liabilities are real, intangible, or do not meet criteria for accounting recognition. If so, fair value accounting will not capture the value of all economic assets and liabilities of financial institutions, which will yield nondescriptive volatility in owners’ equity and net income when these exposures hedge each other.

The first two limitations of fair value accounting are mitigated by its self-correcting nature, however, since fair values must be reestimated each period. This situation is in marked contrast to the predetermined nature of amortized cost values. The third limitation will be mitigated in the future by the expansion of fair value accounting to a broader set of financial instruments. All three limitations can be addressed through appropriate disclosures, as discussed in the next section.

**Estimation Sensitivity and Risk Disclosures**

Subjectivity and noise in estimating fair values, even when leveraged through the retention of risky residual claims, can be mitigated through clear disclosure of estimation assumptions and the sensitivity of fair values to those assumptions. For example, estimation sensitivity disclosures are required for retained interests in securitizations under SFAS No. 140, *Accounting for*
Transfers and Servicing of Financial Assets and Extinguishments of Liabilities (2000). Unfortunately, these disclosures tend to follow boilerplate presentations that do not clearly reflect the economics of retained interests. For example, the effects of changes in interest rate and prepayment assumptions on prepayment-sensitive residual interests typically are disclosed separately and independently, even though interest rate decreases drive prepayment increases.

Fair values are point estimates of the current value of financial instruments. Realized values can differ substantially from estimated values, especially for risky financial instruments such as residual interests from securitizations and complex derivatives. Thus, fair values should be analyzed jointly with market, credit, and other risk disclosures. Risk disclosures are required under various FASB standards and SEC rules. In addition, for financial institutions, industry regulators often require additional risk disclosures.

A key aspect of this book is its emphasis on the importance of joint analysis of fair value accounting and estimation sensitivity and risk disclosures to construct the most coherent story possible about how firms generate or destroy value using financial instruments. This analysis invariably involves piecing together and consistently interpreting information from various places in the financial reports of financial institutions. While burdensome, this analysis often provides a very different perspective on a financial institution’s activities from what is conveyed in the financial statements or in management discussion and analysis. For example, it is not difficult to find financial institutions that properly apply hedge accounting under SFAS No. 133 (1998) to specific hedging relationships and that smooth their net income as a result but that are antihedging or substantially overhedging their aggregate exposures. Unfortunately, clear discussions of the effect of hedging on aggregate exposures in financial reports are infrequent for all but the simplest financial institutions.

Limitations arising from non–fair valuation of certain assets and liabilities can be mitigated through separate presentation of unrealized gains and losses on the income statement and through management discussion of the existence of economic hedges of non–fair-valued exposures. In this respect, fair value accounting prods the managements of financial institutions to explain their economic exposures better than does amortized cost accounting.

**Fair Value versus Risk Partitioning Perspectives on Financial Transactions**

Many financial transactions, such as securitizations, leasing, and reinsurance, involve partitioning the fair value and risks of underlying financial instruments (or, in the case of leasing, real assets) among various parties, often through the use of special-purpose entities. A financial components perspective, in which the claims to the underlying financial instruments are accounted
for based on their relative fair value, is the simplest and most natural way to describe these transactions. This perspective is also desirable because it is consistent with fair value accounting for financial instruments generally. This perspective is adopted in SFAS No. 140 (2000), which governs securitizations. It has not yet been applied broadly to financial transactions, although it is likely to be applied more broadly in the future. For example, the G4+1 Group of Accounting Standards Setters proposes that a financial components perspective be applied to leases in its special report *Leases: Implementation of a New Approach* (2000).³

While a financial components perspective has desirable attributes, users of financial reports should be aware that it is not the only meaningful way to describe these types of transactions. A risk-partitioning perspective is also important in cases of disproportionate risk retention. It is possible to transfer most of the fair value of underlying financial instruments while retaining most of the risk. The breakdown of securitization accounting for subprime mortgage banks and other securitizers of risky financial assets during the hedge fund crisis in the second half of 1998 occurred because these issuers sold most of the fair value of the underlying financial assets while retaining most of the risk.

**Financial Transactions Are Financial**

It is evident that financial transactions should be described as such in financial reports. Unfortunately, many financial transactions, such as operating leases and traditional insurance, are described as operating under current financial reporting rules. A nontrivial benefit of adopting fair value accounting is that it would make transparent the financial nature of these transactions and the financial institutions that engage in them.

For example, lessors that primarily engage in operating leases appear to be capital asset management companies under current accounting rules, with rent revenue and depreciation expense dominating their income statements. This is despite the fact that they often lease long-lived equipment or real estate under long-term contracts that are clearly primarily financing arrangements. Fair value accounting would require that the economic lease receivables arising in these transactions be recognized on the balance sheet, with interest revenue on these receivables recognized on the income statement. Thus, fair value accounting would make it clear that leasing is primarily an interest rate spread business, similar to banking.

**Activities and Risks of Financial Institutions**

Each of the financial institutions discussed in this book could be divided into subtypes that perform different activities. Moreover, due to deregulation,
mergers and acquisitions, internal diversification, and new product development, many financial institutions have expanded the set of activities that they perform so that these activities overlap with those provided by other institutions. For example, some property-casualty insurers now offer products that allow firms to hedge business and accounting risks in much the same way as the financial derivatives offered by securities firms and commercial banks. Thus, usually the best way to characterize and distinguish financial institutions is through descriptions of the sets of activities they perform and the risk-return trade-offs these activities yield, not through their historical distinct types.

This section describes nine nonmutually exclusive activities performed by financial institutions. The first four activities—funds aggregation, trading and investment, yield curve speculation, and risk management—apply to many types of financial institutions and are of broad economic importance. These activities are examined in detail, focusing on the risk-return trade-offs that they yield and the financial report information that is relevant to the evaluation of those trade-offs. The remaining five activities pertain to sources of fee income important for specific types of financial institutions, and so these activities are discussed more briefly. This set of activities, while fairly comprehensive, is by no means exhaustive. Moreover, some of these activities are complementary, while others are not.

Funds Aggregation

Many types of financial institutions raise funds from many relatively small depositors, investors, or other customers that they reinvest in larger chunks. Examples of funds aggregators are thrifts and commercial banks with retail branch networks, securities firms offering cash management accounts, life insurers offering annuities, and mutual funds. The funds raised may be very liquid, as is the case with most deposits, or less so, as is the case with most annuities. When the funds they raise are more liquid than their assets, funds aggregators are exposed to liquidity risk, for which they should earn an interest rate spread.

Funds aggregators exist to exploit some form of economy of scale in investing. Sources of economies of scale include transactions costs that fall in percentage terms with trade size, the sizable up-front costs of performing financial research, the expanded investment opportunity set available to larger investors, and the greater ability of larger investors to diversify investments. Some funds aggregators invest on their own accounts and provide a contractually specified return to their providers of funds (e.g., commercial banks), while others invest directly on behalf of their providers of funds (e.g., mutual funds). When they invest on their own account, funds aggregators attempt to generate income by earning more on their assets than the cost (including noninterest costs) of the funds they raise. When they invest directly on behalf
of the providers of funds, funds aggregators earn fees that may be contingent on investment returns. These investment activities are described in more detail in the sections “Trading and Investment” and “Other Sources of Fee Income.” Funds aggregators must maintain their stock of funds for their earnings to persist. Doing this can be difficult given the many investment opportunities available to providers of funds. For example, thrifts and commercial banks have found it increasingly difficult to raise core deposits, because of the increasing availability of liquid market-rate alternatives such as cash management accounts.

Funds aggregators are strongly affected by their ability to attract low-cost funds. A useful disclosure about the cost of funds is provided under the SEC’s Industry Guide 3, which requires the financial reports of thrifts and commercial banks to include detailed disclosures of the determinants of the levels of and changes in interest expense during the year.

Since they transact with many small sources of funds, funds aggregators are usually also strongly affected by their ability to process transactions in a cost-efficient manner. Financial institutions typically have highly aggregated disclosures regarding operating expenses.

### Trading and Investment

Financial institutions often trade or invest in financial assets on their own accounts. A financial institution usually holds a trading portfolio because it believes it has some advantage over its trading partners in valuing financial instruments that will yield trading gains. It also may hold a trading portfolio to facilitate or as a result of its other activities. For example, derivatives dealers hold trading portfolios of derivatives.

Financial institutions invest in financial assets to generate investment income. Financial institutions other than the yield curve speculators discussed in the next section usually try to match the timing of the cash flows of their financial assets and liabilities to mitigate interest rate risk. For example, insurers usually match the payoffs of their financial assets to those on their claim liabilities. In the absence of perfect matching of financial assets and liabilities, trading and investment portfolios are subject to the same sort of interest rate risks as yield curve speculators.

The performance of financial institutions that invest is strongly affected by their ability to screen potential investments in order to accept credit risk only when it is desirable to do so. Under the SEC’s Industry Guide 3, the financial reports of thrifts and commercial banks include information that allows users of financial reports to assess their current credit risk exposure and past ability to manage credit risk in four ways.

1. Their financial reports include detailed disclosures of the types of loans made and securities held by the firm. Different types of financial assets can have very different exposures to credit risk.
2. Their financial reports include detailed decompositions of the allowance for loan losses (the contra-asset reflecting expected future loan losses) and gross charge-offs and recoveries of prior charge-offs by type of loan.

3. Their financial reports include disclosures of nonperforming assets.

4. Under SFAS Nos. 115 (1993) and 133 (1998), trading and available for sale securities and derivatives are recognized at fair value on the balance sheet, which should reflect the realizations of both interest rate and credit risks.

Yield Curve Speculation

The values of fixed-rate (and imperfectly floating-rate) financial instruments are sensitive to changes in the appropriate interest rates. The value of a fixed-rate financial instrument varies inversely with interest rates, with the absolute magnitude of the value change rising with the financial instrument’s duration, a measure of the weighted-average time to the cash flows or next repricing of the instrument. Increases in the appropriate interest rates yield losses on financial assets and gains on financial liabilities. Decreases in the appropriate interest rates yield gains on financial assets and losses on financial liabilities.

A yield curve is a function relating the yields to maturity (internal rates of return) on financial instruments with comparable non-interest rate risks and cash flow configurations to the maturities of the instruments. For example, Treasury notes and bonds are essentially credit riskless and pay coupons during their terms and face values at maturity; their yields can be plotted meaningfully against their maturities on a single yield curve. In stable economic times, interest rates tend to rise with maturity, so the yield curve tends to slope upward. The yield curve can move up or down and change slope or shape, however, subject to economic uncertainty. Financial institutions speculate on the yield curve when they invest in financial assets with durations different from those of their financial liabilities. There are various approaches to speculating on the yield curve that expose the financial institution to different types of interest rate risk.

The simplest and historically most common approach is to invest in long-term assets using funds provided by short-term liabilities. Since the yield curve tends to slope upward, this approach tends to yield a positive interest rate spread. In fact, prior to the mid-1970s, the yield curve sloped upward so reliably that virtually all thrifts and commercial banks as well as many other financial institutions employed this approach, which barely constituted speculation.

Changes in the level, slope, and shape of the yield curve strongly affect the value of financial institutions speculating on an upward-sloping yield curve by holding long-term financial assets and short-term financial liabilities. For example, these institutions benefit when the yield curve falls by a
constant amount over its whole range (a parallel downward shift), because they gain more on their long-term assets than they lose on their short-term liabilities. The opposite is true for a parallel upward shift in the yield curve. Financial institutions speculating on an upward-sloping yield curve bear more interest rate risk when the mismatch between the duration of their financial assets and liabilities is larger and when movements in the yield curve are more variable. In this regard, movements in the yield curve have been much more variable since the mid-1970s than they were before.

Upward-sloping yield curve speculators, especially thrifts, suffered large losses when the yield curve rose or sloped downward at various points in the 1970s and 1980s. Reflecting this experience, upward-sloping yield curve speculators are now less common and, insofar as they remain, are typically less aggressive. They have been aided in this evolution by the rise of the loan syndication, securitization and derivatives markets in the 1980s and 1990s, which allow financial institutions to sell off long-term assets and to hedge their remaining exposures more easily. Financial institutions that now speculate on an upward-sloping yield curve to a lesser extent typically attempt to make up for the lost income by charging fees for performing services or processing transactions, or by generating gains on the sale or securitization of their assets. These activities are discussed in the section “Other Sources of Fee Income.”

More elaborate approaches to speculating on the yield curve employed by some financial institutions are to exploit the existing shape of the yield curve or to bet on changes in the level, slope, or shape of the yield curve. These approaches are subject to interest rate risk in complex ways that are discussed in Chapter 4.

Financial reports allow the assessment of financial institutions’ current interest rate exposure and past performance in managing interest rate risk in four ways.

1. Under SEC Industry Guide 3, the financial reports of thrifts and commercial banks must include information about the maturity or repricing intervals of securities, loans, and deposits, and they often include voluntary repricing gap disclosures that summarize this information for all financial instruments.

2. All firms must report the SEC’s market risk disclosures in one of three allowed approaches: (a) the tabular format is similar to repricing gap, (b) the sensitivity approach indicates the expected loss associated with a specific adverse interest rate movement, and (c) the value-at-risk approach indicates the loss with a certain probability associated with interest rate movements.

3. Under the SEC’s Industry Guide 3, the financial statements of thrifts and commercial banks include detailed disclosures of the determinants of the levels of and changes in interest revenue and expense during the year.
4. Under various FASB standards, the financial statements of all firms include either financial statement recognition or footnote disclosure of the fair values of all financial instruments. As mentioned above, the fair values of fixed-rate financial instruments move inversely with the appropriate interest rates.

**Risk Management**

Risk managers adjust the risk exposures of their clients, usually—but by no means always—downward. They may do this by absorbing the risk themselves and diversifying across clients (e.g., insurers may hold the insurance they write) or by transferring the risk to a third party (e.g., a reinsurer or counterparty in a derivatives transaction). The primary examples of risk managers are insurers, but commercial banks and securities firms offer derivative securities and other products to manage risks, and virtually any financial instrument issued or purchased by a financial institution modifies its counterparty’s risk exposure to some extent. For example, firms that securitize financial assets and hold subordinated residual securities and lessors that hold the rights to the residual value of leased assets absorb these risks for the purchasers of senior asset-backed securities and lessees, respectively. Recently developed “alternative risk transfer” products such as catastrophe bonds and credit derivatives that pay off on discrete events increasingly blur the distinction between insurance and other financial instruments.

Risk managers attempt to generate income by charging a premium for absorbing risk. Assuming competitive markets, this risk premium should fall with the risk manager’s ability to diversify the risk. For example, in life insurance, mortality risk is generally diversifiable, since it is uncorrelated across a large number of insured individuals in the absence of an epidemic. In contrast, hurricane insurance in Florida is much harder to diversify, since a single hurricane results in many highly correlated claims, and climactic conditions yield no major hurricanes hitting Florida in most years, while several have hit in certain years.

Financial reports allow the assessment of financial institutions’ current risk exposure and past ability to manage risk in five ways.

1. Under SEC Exchange Act Industry Guide 4, property-casualty insurers must provide “loss reserve development” disclosures indicating how claim payments and expected remaining losses for the business written in each of the last nine prior years have evolved over time. These disclosures provide unique insight into the historical bias and accuracy of reported claim loss liabilities for property-casualty insurers.

2. Under Regulation S-X, all insurers are required to disclose premiums earned in the current year by type of insurance policy. As mentioned above, some types of policies have riskier, harder-to-diversify claims.
Similarly, under SEC Industry Guide 3, thrifts and commercial banks must disclose the carrying amount of loans of various types.

3. Under SFAS Nos. 115 (1993) and 133 (1998), all investment securities and derivatives must be recognized at fair value, and the fair values of other types of financial instruments must be either recognized or disclosed. Fair value accounting reflects the realization of risk on a timelier basis than does amortized cost accounting. SFAS No. 133 (1998) also requires disclosures regarding hedge effectiveness.


5. The SEC market risk disclosures discussed in the section “Yield Curve Speculation” are required for all market risks, including interest rate, foreign exchange, commodity price, and equity price risk.

Risk managers also attempt to generate income by implicitly or explicitly charging fees. A portion of a property-casualty insurance premium is an implicit fee for setting up the policy and for expected future claim adjustment services. Securities firms and commercial banks selling derivative securities may charge either explicit fees or implicit fees tucked into the interest rates offered. This fact implies that the financial statement classification of fee income often depends on whether the fee is explicit or implicit.

As in any high-volume business such as insurance, efficiency at obtaining business is important. Risk managers typically have fairly normal disclosures regarding operating expenses.

Other Sources of Fee Income

Syndication, Securitization, and Reinsurance. Syndication and securitization reverse the investment activities of financial institutions. Syndication refers to splitting individually large financial assets and selling the pieces to other firms. Securitization refers to pooling financial assets with similar features and selling asset-backed securities that convey rights to specified portions of the cash flows generated by the pool to investors. Similarly, reinsurance reverses the ceding insurer’s risk management role, with the ceding insurer paying the reinsurer to assume the obligation to pay claims. Financial institutions that consistently syndicate or securitize their assets or that reinsure the insurance they write do so to generate fees for originating business and gains on sale without assuming the ongoing risks that business entails. Such financial institutions are cash flow-oriented businesses that require continuous origination to maintain their profitability and liquidity.

Market Making and Brokerage. Securities firms and large banks may make markets in or broker the trading of financial instruments.
generate income either through a bid-ask spread or through the return on holding inventory in their trading portfolios. Brokers receive commissions. Spreads and commissions tend to be largest for new or unique products.

**Deal Making.** Securities firms and large banks may execute or advise on various financial deals (e.g., mergers and acquisitions and major security transactions) and receive commissions. They also may generate trading or investment income by holding a portion of the securities that are issued or by offering bridge financing up to the completion of the deal.

**Asset Management and Investment Advice.** Many financial institutions manage or provide advice regarding clients’ investments for fees. For example, thrifts and commercial banks offer trust services. These fees can be fixed, a percentage of assets managed, based on the performance of the portfolio, or mixtures of these options.

**Transactions Processing.** The performance of any financial institution with a high transactions volume depends on its ability to process transactions efficiently in its “back office.” For example, large thrifts, commercial banks, and securities firms may process millions of transactions in a given day. Some of these transactions result in explicit fee income. Some financial institutions specialize in performing these processing tasks for other firms for a fee. Financial institutions that process high volumes of transactions make substantial investments in information technology.

The fee income from these sources is usually but not always disaggregated in financial reports. Disaggregation is useful because fee income from different sources can have very different risk and persistence. For example, deals tend to be concentrated in bull markets. Sources of fee income may be correlated, however, since financial institutions aggressively “cross-sell” their services and so can gain or lose multiple sources of fee income when a major customer is added or dropped or when the firm becomes more or less competitive in a given market.

Table 1.1 provides a useful matrix for organizing one’s thinking about a specific financial institution. The matrix displays financial institutions’ activities horizontally and risks vertically.

**VALUATION OF FINANCIAL INSTITUTIONS IN PRACTICE**

The value of financial institutions stems from two sources:

1. A portfolio of financial instruments that are or will be valued on the balance sheet at fair value. Most financial instruments are (or quickly
become) commodities in which new investments have approximately zero net present value.

2. A set of future streams of noninterest income and expense with various degrees of risk and persistence. If the firm has market power in a given area, some of these sources of fee income could reflect positive present value prospects.

In general, the values of these future fee income streams are not recorded on the balance sheet.

Reflecting these two streams, most financial analysts adopt a two-pronged approach to valuing financial institutions. They value:

1. The institution’s financial instruments using a balance sheet approach based on fair value.

2. Its future income streams using a discounted cash flow or (residual) income approach.

The relative importance of the two approaches in the valuation of a given financial institution depends on the types of activities it performs.

This book does not attempt to prescribe how overall valuations for financial institutions should be performed, since history has shown that the market’s approach to these valuations changes over time as financial institutions and the economy evolve. In contrast, the specific analyses presented should remain useful for as long as financial institutions provide the types of services that they do today.

### TABLE 1.1 Financial Institutions’ Activities and Sources of Risk and Return

<table>
<thead>
<tr>
<th>Main Activity</th>
<th>Funds Aggregation</th>
<th>Trading and Investment</th>
<th>Yield Curve Speculation</th>
<th>Risk Management</th>
<th>Fee Generation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main Source of Risk and Return</td>
<td></td>
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<tr>
<td>Liquidity risk</td>
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<td>Interest rate risk</td>
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<td>Cash flow risk</td>
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<td>Persistence of income</td>
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<td>Cost effectiveness</td>
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</tr>
</tbody>
</table>

Valuation of Financial Institutions in Practice
NOTES


2. Published by the Financial Accounting Standards Board.

3. Ibid.