Chapter 1

A FRAMEWORK FOR BUSINESS ANALYSIS AND VALUATION USING FINANCIAL STATEMENTS

This chapter outlines a comprehensive framework for financial statement analysis. Because financial statements provide the most widely available data on public corporations' economic activities, investors and other stakeholders rely on financial reports to assess the plans and performance of firms and corporate managers.

A variety of questions can be addressed by business analysis using financial statements, as shown in the following examples:

- A security analyst may be interested in asking: "How well is the firm I am following performing? Did the firm meet my performance expectations? If not, why not? What is the value of the firm's stock given my assessment of the firm's current and future performance?"
- A loan officer may need to ask: "What is the credit risk involved in lending a certain amount of money to this firm? How well is the firm managing its liquidity and solvency? What is the firm's business risk? What is the additional risk created by the firm's financing and dividend policies?"
- A management consultant might ask: "What is the structure of the industry in which the firm is operating? What are the strategies pursued by various players in the industry? How have these factors affected the relative performance of different firms in the industry?"
- A corporate manager may ask: "Is my firm properly valued by investors? Is our investor communication program adequate to facilitate this process?" or "Is this firm a potential takeover target? How much value can be added if we acquire this firm? How can we finance the acquisition?"
- An independent auditor would want to ask: "Are the accounting policies and accrual estimates in this company's financial statements consistent with my understanding of this business and its recent performance? Do these financial reports communicate the current status and significant risks of the business?"

The structure of state economies during the twentieth and early twenty-first centuries has generally fallen into one of two distinct and broad ideologies for channeling savings into business investments—capitalism and central planning. The capitalist market model broadly relies on the market mechanism to govern economic activity, and decisions regarding investments are made privately. Centrally planned economies have used central planning and government agencies to pool national savings and to direct investments in business enterprises. The failure of the central planning model is evident from the fact that at this point most of

these economies have partly or entirely abandoned it in favor of the market model. As a result, in almost all countries in the world today, capital markets play an important role in channeling financial resources from savers to business enterprises that need capital.

Financial statement analysis is a valuable activity when managers have in-depth information on a firm's strategies and performance and a variety of institutional factors make it unlikely that they fully disclose this information. In this setting, outside analysts attempt to create "inside information" from analyzing financial statement data, thereby gaining valuable insights about the firm's current performance and future prospects.

To understand the contribution that financial statement analysis can make, it is important to understand the role of financial reporting in the functioning of capital markets and the institutional forces that shape financial statements. Therefore, we first present a brief description of these forces followed by a discussion of the steps that an analyst must perform to extract information from financial statements and provide meaningful forecasts.

THE ROLE OF FINANCIAL REPORTING IN CAPITAL MARKETS

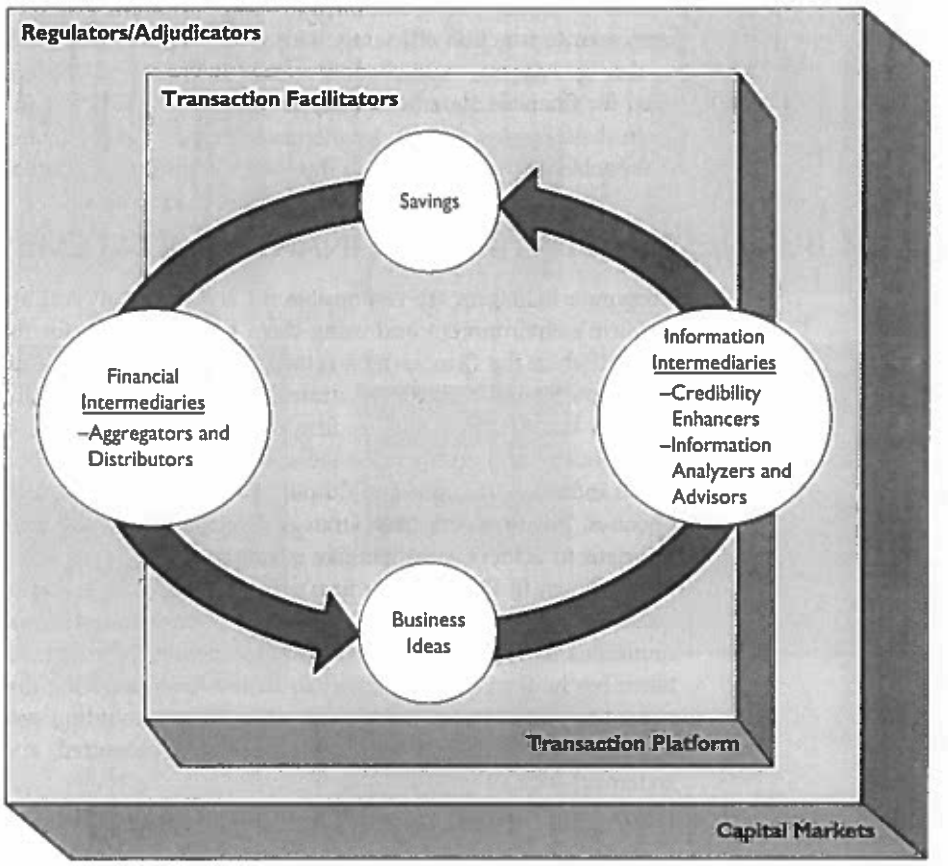
A critical challenge for any economy is the allocation of savings to investment opportunities. Economies that do this well can exploit new business ideas to spur innovation and create jobs and wealth at a rapid pace. In contrast, economies that manage this process poorly tend to dissipate their wealth and fail to support business opportunities.

Figure 1-1 provides a schematic representation of how capital markets typically work in a broad sense. Savings in an economy are widely distributed among households. There are usually many new entrepreneurs and existing companies that would like to attract these savings to fund their business ideas. While both savers and entrepreneurs would like to do business with each other, matching savings to business investment opportunities is complicated for at least three reasons. First, entrepreneurs typically have better information than savers on the value of business investment opportunities. Second, communication by entrepreneurs to investors is not completely credible because investors know entrepreneurs have an incentive to inflate the value of their ideas. Third, savers generally lack the financial sophistication needed to analyze and differentiate among the various business opportunities.

These information and incentive problems lead to what economists call the "lemons" problem, which can potentially break down the functioning of capital markets.[1] It works like this: Consider a situation where half the business ideas are "good" and the other half are "bad." If investors cannot distinguish between the two types of business ideas, entrepreneurs with bad ideas will try to claim that their ideas are as valuable as the good ideas. Realizing this possibility, investors value both good and bad ideas at an average level. Unfortunately, this penalizes good ideas, and entrepreneurs with good ideas find the terms on which they can get financing to be unattractive. As these entrepreneurs leave the capital market, the proportion of bad ideas in the market increases. Over time, bad ideas "crowd out" good ideas, and investors lose confidence in this market.

The emergence of the institutions that make up a fully formed capital market system can prevent such a market breakdown. Financial intermediaries such as venture capital and private equity firms, banks, mutual funds, and insurance companies focus on aggregating funds from individual investors and distributing those funds to businesses seeking sources of capital. Information intermediaries such as auditors and company audit committees serve as credibility enhancers to provide an independent assessment of business claims. Information analyzers and advisors such as financial analysts, credit rating agencies and the financial press are another type of information intermediary that collect and analyze business information used to make business decisions. Transaction facilitators such as stock exchanges and brokerage houses play a crucial role in capital markets by providing a platform that facilitates buying and selling in markets. Finally, regulators

FIGURE 1-1 Capital Markets



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such as the Securities and Exchange Commission (SEC) and the Financial Accounting Standards Board (FASB) in the United States create appropriate regulatory policy that establishes the legal framework of the capital market system, while adjudicators such as the court system resolve disputes that arise between participants.[2] In a well-functioning capital market, the market institutions described above add value by both helping investors distinguish good investment opportunities from bad ones and by directing funding to those business ideas deemed most promising.

Financial reporting plays a critical role in the effective functioning of the capital markets. Information intermediaries attempt to add value by either enhancing the credibility of financial reports (as auditors do) or by analyzing the information in financial statements (as analysts and the rating agencies do). Financial intermediaries rely on the information in financial statements to analyze investment opportunities, and they supplement this with information from other sources, including the analysis and perspective of the information intermediaries.

Ideally, the different intermediaries serve as a system of checks and balances to ensure the efficient functioning of the capital markets system. However, this is not always the case, as on occasion they mutually reinforce rather than counterbalance each other. This can arise from imperfections in financial and information intermediaries' incentives, governance issues within the intermediary organizations themselves, and conflicts of interest, as evidenced by the spectacular failures of companies such as Enron and WorldCom in the

early part of the new century,[3] and more recently companies such as Lehman Brothers, New Century Financial, and a host of others during the recent global financial crisis.

The examples above demonstrate that while this market mechanism over time has been seen to function efficiently with prices reflecting all available information on a particular investment, individual securities may still be mispriced, thereby justifying the need for financial statement analysis.

In the following section, we discuss key aspects of the financial reporting system design that enable it to effectively play this vital role in the functioning of the capital markets.

FROM BUSINESS ACTIVITIES TO FINANCIAL STATEMENTS

Corporate managers are responsible for acquiring physical and financial resources from the firm's environment and using them to create value for the firm's investors. Value is created when the firm earns a return on its investment in excess of the cost of capital. Managers formulate business strategies to achieve this goal, and they implement them through business activities. A firm's business activities are influenced by its economic environment and its own business strategy. The economic environment includes the firm's industry, its input and output markets, and the regulations under which the firm operates. The firm's business strategy determines how the firm positions itself in its environment to achieve a competitive advantage.

As shown in Figure 1-2, a firm's financial statements summarize the economic consequences of its business activities. The firm's business activities in any time period are too numerous to be reported individually to outsiders. Further, some of the activities undertaken by the firm are proprietary in nature, and disclosing these in detail could be a detriment to the firm's competitive position. The accounting system provides a mechanism through which business activities are selected, measured, and aggregated into financial statement data.

INFLUENCES OF THE ACCOUNTING SYSTEM ON INFORMATION QUALITY

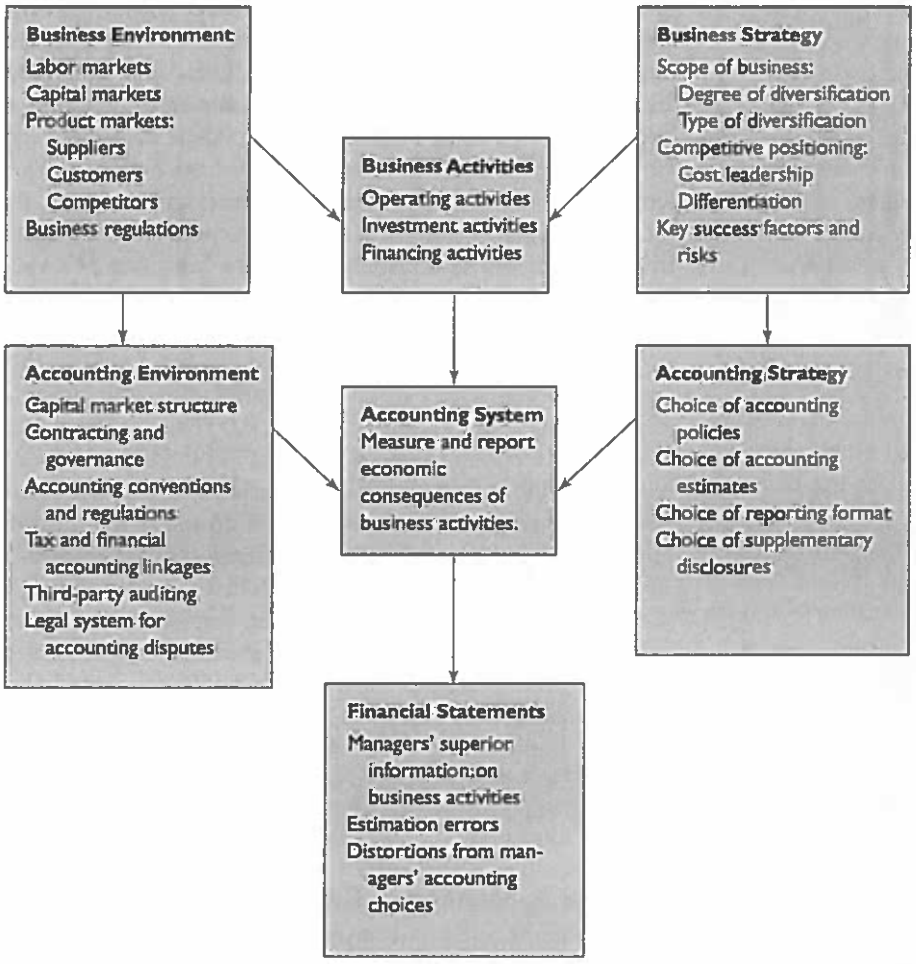
Intermediaries using financial statement data to do business analysis have to be aware that financial reports are influenced both by the firm's business activities and by its accounting system. *A key aspect of financial statement analysis, therefore, involves understanding the influence of the accounting system on the quality of the financial statement data being used in the analysis.* The institutional features of accounting systems discussed below determine the extent of that influence.

Feature 1: Accrual Accounting

One of the fundamental features of corporate financial reports is that they are prepared using accrual rather than cash accounting. Unlike cash accounting, accrual accounting distinguishes between the recording of costs and benefits associated with economic activities and the actual payment and receipt of cash. Net income is the primary periodic performance index under accrual accounting. To compute net income, the effects of economic transactions are recorded on the basis of *expected*, not necessarily *actual*, cash receipts and payments. Expected cash receipts from the delivery of products or services are recognized as revenues, and expected cash outflows associated with these revenues are recognized as expenses.

The need for accrual accounting arises from investors' demand for financial reports on a periodic basis. Because firms undertake economic transactions on a continual

FIGURE 1-2 From Business Activities to Financial Statements



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basis, the arbitrary closing of accounting books at the end of a reporting period leads to a fundamental measurement problem. Since cash accounting does not report the full economic consequence of the transactions undertaken in a given period, accrual accounting is designed to provide more complete information on a firm's periodic performance.

Feature 2: Accounting Conventions and Standards

The use of accrual accounting lies at the center of many important complexities in corporate financial reporting. Because accrual accounting deals with *expectations* of future cash consequences of current events, it is subjective and relies on a variety of assumptions. Who should be charged with the primary responsibility of making these assumptions? In the current system, a firm's managers are entrusted with the task of making the appropriate estimates and assumptions to prepare the financial statements because they have intimate knowledge of their firm's business.

The accounting discretion granted to managers is potentially valuable because it allows them to reflect inside information in reported financial statements. However,

since investors view profits as a measure of managers' performance, managers have incentives to use their accounting discretion to distort reported profits by making biased assumptions. Further, the use of accounting numbers in contracts between the firm and outsiders provides another motivation for management manipulation of accounting numbers. Income management distorts financial accounting data, making them less valuable to external users of financial statements. Therefore, the delegation of financial reporting decisions to corporate managers has both costs and benefits.

A number of accounting conventions have evolved to ensure that managers use their accounting flexibility to summarize their knowledge of the firm's business activities and not disguise reality for self-serving purposes. For example, the measurability and conservatism conventions are accounting responses to concerns about distortions from managers' potentially optimistic bias. Both these conventions attempt to limit managers' optimistic bias by imposing their own pessimistic bias.

Accounting standards, promulgated by the FASB in the United States and similar standard-setting bodies in other countries, also limit potential distortions that managers can introduce into reported numbers. These uniform standards, such as Generally Accepted Accounting Principles (GAAP) in the United States and the International Financial Reporting Standards (IFRS) internationally, attempt to reduce managers' ability to record similar economic transactions in dissimilar ways, either over time or across firms.

Increased uniformity from accounting standards, however, comes at the expense of reduced flexibility for managers to reflect genuine business differences in their firms' financial statements. Rigid accounting standards work best for economic transactions whose accounting treatment is not predicated on managers' proprietary information. However, when there is significant business judgment involved in assessing a transaction's economic consequences, rigid standards that prevent managers from using their superior business knowledge would be counterproductive. Further, if accounting standards are too rigid, they may induce managers to expend economic resources to restructure business transactions to achieve a desired accounting result.

Feature 3: Managers' Reporting Strategy

Because the mechanisms that limit managers' ability to distort accounting data add noise, it is not optimal to use accounting regulation to eliminate managerial flexibility completely. Therefore, real-world accounting systems leave considerable room for managers to influence financial statement data. A firm's reporting strategy, i.e., the manner in which managers use their accounting discretion, has an important influence on the firm's financial statements.

Corporate managers can choose accounting and disclosure policies that make it more or less difficult for external users of financial reports to understand the true economic picture of their businesses. Accounting rules often provide a broad set of alternatives from which managers can choose. Further, managers are entrusted with making a range of estimates in implementing these accounting policies. Accounting regulations usually prescribe *minimum* disclosure requirements, but they do not restrict managers from *voluntarily* providing additional disclosures.

A superior disclosure strategy will enable managers to communicate the underlying business reality to outside investors. One important constraint on a firm's disclosure strategy is the competitive dynamics in product markets. Disclosure of proprietary information about business strategies and their expected economic consequences may hurt the firm's competitive position. Subject to this constraint, managers can use financial statements to provide information useful to investors in assessing their firm's true economic performance.

Managers can also use financial reporting strategies to manipulate investors' perceptions. Using the discretion granted to them, managers can make it difficult for investors to identify poor performance on a timely basis. For example, managers can choose accounting policies and estimates to provide an optimistic assessment of the firm's true performance. They can also make it costly for investors to understand the true performance by controlling the extent of information that is disclosed voluntarily.

The extent to which financial statements reveal the underlying business reality varies across firms and across time for a given firm. This variation in accounting quality provides both an important opportunity and a challenge in doing business analysis. The process through which analysts can separate noise from information in financial statements, and gain valuable business insights from financial statement analysis, is discussed in the following section.

Feature 4: Auditing

Auditing, broadly defined as a verification of the integrity of the reported financial statements by someone other than the preparer, ensures that managers use accounting rules and conventions consistently over time and that their accounting estimates are reasonable. Therefore, auditing improves the quality of accounting data.

Third-party auditing may also reduce the quality of financial reporting because it constrains the kind of accounting rules and conventions that evolve over time. For example, the FASB considers the views of auditors in the standard-setting process. Auditors are likely to argue against accounting standards producing numbers that are difficult to audit, even if the proposed rules produce relevant information for investors.

The legal environment in which accounting disputes between managers, auditors, and investors are adjudicated can also have a significant effect on the quality of reported numbers. The threat of lawsuits and resulting penalties has the beneficial effect of improving the accuracy of disclosure. However, the potential for a significant legal liability might also discourage managers and auditors from supporting accounting proposals requiring risky forecasts, such as forward-looking disclosures.

The governance structure of firms includes an audit committee of the board of directors. The audit committee is expected to be independent of management, and its key roles include overseeing the work of the auditor and ensuring that financial statements are properly prepared. This governance mechanism further serves to enhance the quality and accountability of financial reporting.

LEGISLATION AFFECTING FINANCIAL REPORTING AND AUDITING

In the United States, the Sarbanes-Oxley Act of 2002 made important changes in financial reporting and auditing. The Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 introduced new regulations for the banking sector, including several new requirements likely to affect financial reporting and auditing.

Sarbanes-Oxley Act

In the aftermath of the collapse of the dot-com bubble and high-profile accounting scandals such as Enron and WorldCom, the U.S. Congress passed the bipartisan Sarbanes-Oxley Act (SOX as it has come to be known) in July 2002. The margin by which the bill was enacted—it passed by a vote of 424 to 3 in the House of Representatives and a vote of 99 to 0 in the Senate—and the far-reaching nature of the reforms reflected the degree to which the public's confidence in the quality of corporate financial reporting had been undermined.

SOX mandated certain fundamental changes to corporate governance as related to financial reporting and altered the relationship between a firm and its auditor. Some of the highlights included:

- Creation of a not-for-profit accounting oversight board, the Public Company Accounting Oversight Board (PCAOB), to ensure standards for auditing and the ethics and independence of public accounting firms;
- Mandating stricter guidelines for the composition and role of the audit committee of the Board of Directors, including director independence and financial expertise;
- Enhancing corporate responsibility for financial reporting by requiring the CEO and CFO to personally certify the appropriateness of periodic reports;
- Requiring management to assess and report on the adequacy of internal controls, which then needs to be certified by the auditor;
- Providing greater whistleblower protection;
- Allowing for the imposition of stiffer penalties, including prison terms and fines, for securities fraud;
- Prohibiting accounting firms from providing certain non-audit services contemporaneously with an audit and mandating audit partner rotation;
- Prescribing conflict of interest rules for equity research analysts; and
- Increasing the funding available to the Securities and Exchange Commission to ensure compliance.

Since the adoption of SOX, similar legislation has been passed in Japan, the EU, Canada, Israel, Australia, and France, among others, indicating general agreement on the importance of tighter reporting standards.

Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010

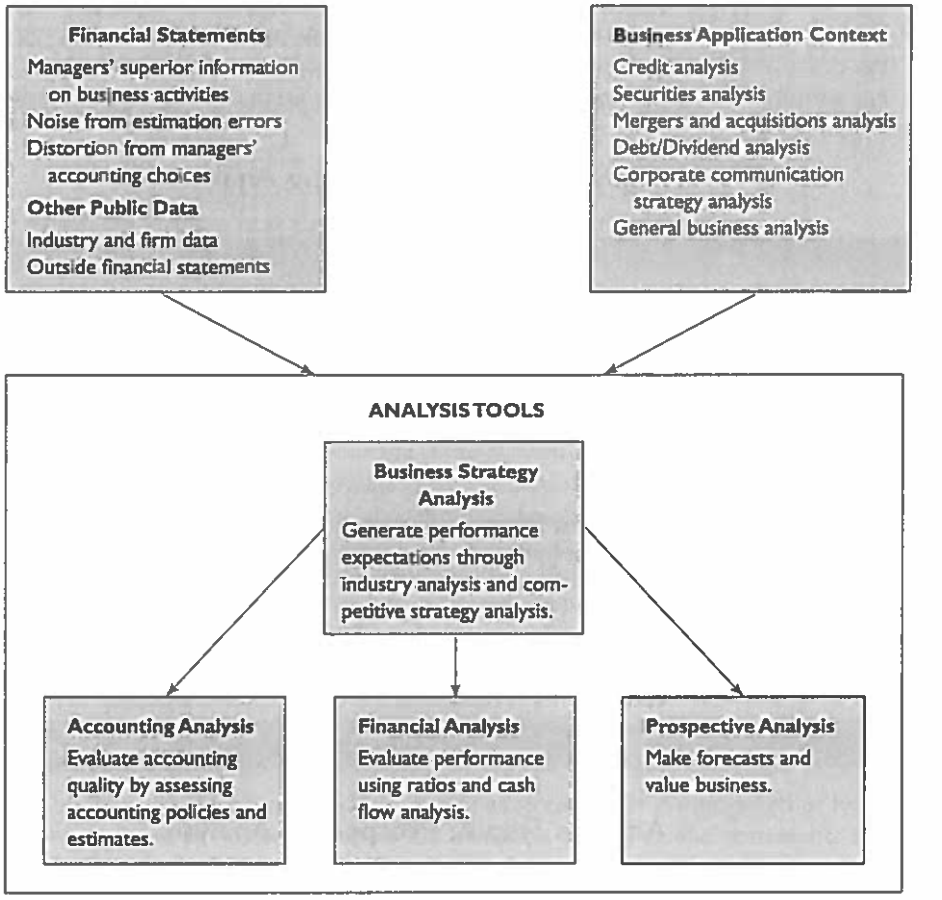
The Dodd-Frank Act was passed in 2010 in response to the financial crisis on Wall Street. The new legislation mandated important new changes in the governance of banks, including:

- The creation of a new independent consumer protection agency to ensure that consumers receive the information they need to shop for financial products;
- Increased monitoring of banks, including restrictions on proprietary trading;
- New procedures to facilitate the orderly liquidation of failed banks;
- Increased transparency of the trading of financial instruments, which should facilitate fair value accounting for these instruments;
- Increased oversight of ratings agencies;
- Provisions for shareholders to have a non-binding vote on executive compensation; and
- Increased disclosures on the assets underlying complex financial securities.

FROM FINANCIAL STATEMENTS TO BUSINESS ANALYSIS

Because managers' insider knowledge is a source of both value and distortion in accounting data, it is difficult for outside users of financial statements to separate information from distortion and noise. Not being able to undo accounting distortions completely, investors "discount" a firm's reported accounting performance. In doing so, they make a probabilistic assessment of the extent to which a firm's reported numbers reflect its economic performance. As a result, investors frequently have an imprecise assessment of an individual firm's performance. Financial and information intermediaries can add value by improving investors' understanding of a firm's current performance and its future prospects.

FIGURE 1-3 Analysis Using Financial Statements



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Effective financial statement analysis is valuable because it attempts to get at managers' inside information from public financial statement data. Since intermediaries do not have direct or complete access to this inside information, they rely on their knowledge of the firm's industry and its competitive strategies to interpret financial statements. Successful intermediaries have at least as good an understanding of the industry economics as the firm's managers do, as well as a reasonably good understanding of the firm's competitive strategy. Although outside analysts have an information disadvantage relative to the firm's managers, they are more objective in evaluating the economic consequences of the firm's investment and operating decisions. Figure 1-3 provides a schematic overview of how business intermediaries use financial statements to accomplish four key steps: (1) business strategy analysis, (2) accounting analysis, (3) financial analysis, and (4) prospective analysis.

Analysis Step 1: Business Strategy Analysis

The purpose of business strategy analysis is to identify key profit drivers and business risks, and to assess the company's profit potential at a qualitative level. Business strategy analysis involves analyzing a firm's industry and its strategy to create a sustainable

competitive advantage. This qualitative analysis is an essential first step because it enables the analyst to better frame the subsequent accounting and financial analysis. For example, identifying the key success factors and key business risks allows the identification of key accounting policies. Assessment of a firm's competitive strategy facilitates evaluating whether current profitability is sustainable. Finally, business analysis enables the analyst to make sound assumptions in forecasting a firm's future performance.

Analysis Step 2: Accounting Analysis

The purpose of accounting analysis is to evaluate the degree to which a firm's accounting captures its underlying business economics. By identifying places where there is accounting flexibility, and by evaluating the appropriateness of the firm's accounting policies and estimates, analysts can assess the degree of distortion in a firm's reported numbers. Another important step in accounting analysis is to "undo" any distortions by recasting a firm's accounting numbers to create unbiased accounting data. Sound accounting analysis improves the reliability of conclusions from financial analysis, the next step in financial statement analysis.

Analysis Step 3: Financial Analysis

The goal of financial analysis is to use financial data to evaluate the current and past performance of a firm and to assess its sustainability. There are two important skills related to financial analysis. First, the analysis should be systematic and efficient. Second, it should allow the analyst to use financial data to explore business issues. Ratio analysis and cash flow analysis are the two most commonly used financial tools. Ratio analysis focuses on evaluating a firm's product market performance and financial policies, while cash flow analysis focuses on a firm's liquidity and financial flexibility.

Analysis Step 4: Prospective Analysis

Prospective analysis, which focuses on forecasting a firm's future, is the final step in business analysis. Two commonly used techniques in prospective analysis are financial statement forecasting and valuation. Both these tools allow the synthesis of the insights from business analysis, accounting analysis, and financial analysis in order to make predictions about a firm's future.

While the intrinsic value of a firm is a function of its future cash flow performance, it is also possible to assess a firm's value based on the firm's current book value of equity and its future return on equity (ROE) and growth. Strategy analysis, accounting analysis, and financial analysis, the first three steps in the framework discussed above, provide an excellent foundation for estimating a firm's intrinsic value. Strategy analysis, in addition to enabling sound accounting and financial analysis, also helps in assessing potential changes in a firm's competitive advantage and their implications for the firm's future ROE and growth. Accounting analysis provides an unbiased estimate of a firm's current book value and ROE. Financial analysis allows an in-depth understanding of what drives the firm's current ROE.

The predictions from a sound business analysis are useful to a variety of parties and can be applied in various contexts. The exact nature of the analysis will depend on the context. The contexts that we will examine include securities analysis, credit evaluation, mergers and acquisitions, and the assessment of corporate communication strategies. The four analytical steps described above are useful in each of these contexts. Appropriate use of these tools, however, requires a familiarity with the economic theories and institutional factors relevant to the context.

There are several ways in which financial statement analysis can add value, even when capital markets are reasonably efficient. First, there are many applications of financial statement analysis whose focus is outside the capital market context—credit analysis, competitive benchmarking, and analysis of mergers and acquisitions, to name a few. Second, markets become efficient precisely because some market participants rely on analytical tools such as the ones we discuss in this book to analyze information and make investment decisions. This in turn imposes greater discipline on corporate managers to develop an appropriate disclosure and communication strategy.

SUMMARY

Financial statements provide the most widely available data on public corporations' economic activities; investors and other stakeholders rely on them to assess the plans and performance of firms and corporate managers. Accrual accounting data in financial statements are noisy, and unsophisticated investors can assess firms' performance only imprecisely. Financial analysts who understand managers' disclosure strategies have an opportunity to create inside information from public data, and they play a valuable role in enabling outside parties to evaluate a firm's current and prospective performance.

This chapter has outlined the framework for business analysis with financial statements, using four key steps: business strategy analysis, accounting analysis, financial analysis, and prospective analysis. The remaining chapters in this book describe these steps in greater detail and discuss how they can be used in a variety of business contexts.

DISCUSSION QUESTIONS

1. John, who has just completed his first finance course, is unsure whether he should take a course in business analysis and valuation using financial statements since he believes that financial analysis adds little value, given the efficiency of capital markets. Explain to John when financial analysis can add value, even if capital markets are generally seen as being efficient.
2. In 2009, Larry Summers, former Secretary of the Treasury, observed that "in the past 20-year period, we have seen the 1987 stock market crash. We have seen the Savings & Loan debacle and commercial real estate collapse of the late 80's and early 90's. We have seen the Mexican financial crisis, the Asian financial crisis, the Long Term Capital Management liquidity crisis, the bursting of the NASDAQ bubble and the associated Enron threat to corporate governance. And now we've seen this [global economic crisis], which is more serious than any of that. Twenty years, seven major crises. One major crisis every three years." How could this happen given the large number of financial and information intermediaries working in financial markets throughout the world? Can crises be averted by more effective financial analysis?
3. Accounting statements rarely report financial performance without error. List three types of errors that can arise in financial reporting.
4. Joe Smith argues that "learning how to do business analysis and valuation using financial statements is not very useful, unless you are interested in becoming a financial analyst." Comment.
5. Four steps for business analysis are discussed in the chapter (strategy analysis, accounting analysis, financial analysis, and prospective analysis). As a financial analyst, explain why each of these steps is a critical part of your job and how they relate to one another.