

## Chapter 3

# Overview of Accounting Analysis

The purpose of accounting analysis is to evaluate the degree to which a firm's accounting captures its underlying business reality.<sup>1</sup> 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 accounting numbers. Having identified accounting distortions, analysts can then adjust a firm's accounting numbers using cash flow and footnote information to "undo" the distortions. Sound accounting analysis improves the reliability of conclusions from financial analysis, the next step in financial statement analysis.

### THE INSTITUTIONAL FRAMEWORK FOR FINANCIAL REPORTING

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There is typically a separation between ownership and management in public corporations. Financial statements serve as the vehicle through which owners keep track of their firms' financial situation. On a periodic basis, firms typically produce three primary financial reports: (1) an income statement that describes the operating performance during a time period, (2) a balance sheet that states the firm's assets and how they are financed, and (3) a cash flow statement (or in some countries, a funds flow statement) that summarizes the cash (or fund) flows of the firm. These statements are accompanied by footnotes that provide additional details on the financial statement line items, as well as by management's narrative discussion of the firm's performance in the Management Discussion and Analysis section.

To evaluate effectively the quality of a firm's financial statement data, the analyst needs to first understand the basic features of financial reporting and the institutional framework that governs them, as discussed in the following sections.

#### 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.

While there are many rules and conventions that govern a firm's preparation of financial statements, there are only a few conceptual building blocks that form the

foundation of accrual accounting. The following definitions are critical to the income statement, which summarizes a firm's revenues and expenses<sup>2</sup>:

- Revenues are economic resources earned during a time period. Revenue recognition is governed by the realization principle, which proposes that revenues should be recognized when (a) the firm has provided all, or substantially all, the goods or services to be delivered to the customer and (b) the customer has paid cash or is expected to pay cash with a reasonable degree of certainty.<sup>3</sup>
- Expenses are economic resources used up in a time period. Expense recognition is governed by the matching and the conservatism principles. Under these principles, expenses are resource costs (a) directly associated with revenues recognized in the same period, (b) associated with benefits that are consumed in this time period, or (c) whose future benefits are not reasonably certain.
- Profit is the difference between a firm's revenues and expenses in a time period.<sup>4</sup>

The following fundamental relationship is therefore reflected in a firm's income statement:

$$\text{Profit} = \text{Revenues} - \text{Expenses}$$

In contrast, the balance sheet is a summary at one point in time. The principles that define a firm's assets, liabilities, and equity are as follows:

- Assets are economic resources owned by a firm that are (a) likely to produce future economic benefits and (b) measurable with a reasonable degree of certainty.
- Liabilities are economic obligations of a firm arising from benefits received in the past that (a) are required to be met with a reasonable degree of certainty and (b) whose timing is reasonably well defined.
- Equity is the difference between a firm's assets and its liabilities.

The definitions of assets, liabilities, and equity lead to the fundamental relationship that governs a firm's balance sheet:

$$\text{Assets} = \text{Liabilities} + \text{Equity}$$

### Delegation of Reporting to Management

While the basic definitions of the elements of a firm's financial statements are simple, their application in practice often involves complex judgments. For example, how should revenues be recognized when a firm sells land to customers and also provides customer financing? If revenue is recognized before cash is collected, how should potential defaults be estimated? Are the outlays associated with research and development activities, whose payoffs are uncertain, assets or expenses when incurred? Are contractual commitments under lease arrangements or post-retirement plans liabilities? If so, how should they be valued?

Because corporate managers have intimate knowledge of their firms' businesses, they are entrusted with the primary task of making the appropriate judgments in portraying myriad business transactions using the basic accrual accounting framework. 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 an incentive 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 a motivation for management manipulation of accounting numbers.

This earnings management distorts financial accounting data, making it less valuable to external users of financial statements. Therefore, the delegation of financial reporting decisions to managers has both costs and benefits. Accounting rules and auditing are mechanisms designed to reduce the cost and preserve the benefit of delegating financial reporting to corporate managers. The Sarbanes-Oxley Act increased the involvement of the audit committee of a firm's board of directors and required the personal certification of the CEO and CFO as to the appropriateness of financial reports as a way of reducing the costs of this delegation. The legal system is used to adjudicate disputes between managers, auditors, and investors.

### Generally Accepted Accounting Principles

Given that it is difficult for outside investors to determine whether managers have used accounting flexibility to signal their proprietary information or merely to disguise reality, a number of accounting conventions have evolved to mitigate the problem. For example, in most countries financial statements are prepared using the historical cost convention, where assets and liabilities are recorded at historical exchange prices rather than fair values, replacement values, or values in use. This reduces managers' ability to overstate the value of the assets that they have acquired or developed, or to understate the value of liabilities. Of course, historical cost also limits the information that is available to investors about the potential of the firm's assets, since exchange prices are usually different from fair values or values in use.<sup>5</sup>

Accounting standards and rules also limit management's ability to misuse accounting judgment by regulating how particular types of transactions are recorded. For example, accounting standards for leases stipulate how firms are to record contractual arrangements to lease resources. Similarly, pension and other post-employment benefit standards describe how firms are to record commitments to provide pensions and other retirement benefits for employees. These accounting standards, which are designed to convey quantitative information on a firm's performance, are complemented by a set of disclosure principles. The disclosure principles guide the amount and kinds of information that is disclosed and require a firm to provide qualitative information related to the assumptions, policies, and uncertainties that underlie the quantitative data presented.

In the United States, the Securities and Exchange Commission (SEC) has the legal authority to set accounting standards. The SEC typically relies on private sector accounting bodies to undertake this task. Since 1973 accounting standards in the United States have been set by the Financial Accounting Standards Board (FASB); and Generally Accepted Accounting Principles (GAAP) denotes the standards, conventions, rules, and procedures that FASB requires firms to apply in preparing their financial statements. There are similar private sector or public sector accounting standard-setting bodies in many other countries. More recently, the International Accounting Standards Board (IASB) and its predecessor, the International Accounting Standards Committee (IASC), have been attempting to set worldwide accounting standards. Those standards, the International Financial Reporting Standards (IFRS), are gaining increasing acceptance throughout Europe and in many developed and emerging markets across the globe. While IFRS is not applicable to U.S. companies, experts anticipate that GAAP and IFRS are likely to ultimately converge. At present, foreign companies registered with the SEC have to file a Form 20-F, which shows a reconciliation between the company's IFRS or local accounts and U.S. GAAP.

Uniform accounting standards attempt to reduce managers' ability to record similar economic transactions in dissimilar ways, either over time or across firms. Thus they create a uniform accounting language and increase the credibility of financial statements by limiting a firm's ability to distort them. Increased uniformity from accounting standards, however, comes at the expense of reduced flexibility for managers to reflect genuine business differences in a firm's accounting decisions. 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 are likely to be dysfunctional for some companies because they prevent managers from using their superior knowledge of the business to determine how best to report the economics of key business events. 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 or to forego transactions that may be difficult to report on.

### External Auditing

External 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. In the U.S., all listed companies are required to have their financial statements audited by an independent public accountant. The standards and procedures to be followed by independent auditors are known as Generally Accepted Auditing Standards (GAAS). Under the Sarbanes-Oxley Act, the responsibility for overseeing audit firms and for ensuring that they are complying with GAAS resides with the Public Company Accounting Oversight Board (PCAOB), a new U.S. regulatory body. All public accounting firms are required to register with the PCAOB, which has the power to inspect and investigate audit work, and if needed to discipline auditors.

The Sarbanes-Oxley Act also specifies the relationship between a company and its external auditor, requiring auditors to report to, and be overseen by, a company's audit committee rather than its management. In addition, the Act prohibits public accounting firms from providing non-audit services, such as bookkeeping, information systems design and implementation, valuation and a range of other consulting services, to a company that it audits. Finally, the Act requires that audit firms rotate the lead and reviewing audit partner every five years. These changes are expected to affect the economics of audit firms and to increase the cost of audits.

While auditors issue an opinion on published financial statements, it is important to remember that the primary responsibility for the statements still rests with corporate managers. Auditing improves the quality and credibility of accounting data by limiting a firm's ability to distort financial statements to suit its own purposes. However, as recent audit failures at companies such as Enron and WorldCom show, auditing is imperfect. Audits cannot review all of a firm's transactions. They can also fail because of lapses in quality, or because of lapses in judgment by auditors who fail to challenge management for fear of losing future business.

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 that produce numbers which are difficult to audit, even if the proposed rules produce relevant information for investors.

### Legal Liability

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 significant legal liability might also discourage managers and auditors from supporting accounting proposals requiring risky forecasts, for example, forward-looking disclosures. The U.S. auditing community often expresses this type of concern.

## FACTORS INFLUENCING ACCOUNTING QUALITY

Because the mechanisms that limit managers' ability to distort accounting data themselves add noise, it is not optimal to use accounting regulation to completely eliminate managerial flexibility. Therefore, real-world accounting systems leave considerable room for managers to influence financial statement data. The net result is that information in corporate financial reports is noisy and biased, even in the presence of accounting regulation and external auditing.<sup>6</sup> The objective of accounting analysis is to evaluate the degree to which a firm's accounting captures its underlying business reality and to "undo" any accounting distortions. When potential distortions are large, accounting analysis can add considerable value.<sup>7</sup>

There are three potential sources of noise and bias in accounting data: (1) that introduced by rigidity in accounting rules, (2) random forecast errors, and (3) systematic reporting choices made by corporate managers to achieve specific objectives. Each of these factors is discussed below.

### Noise from Accounting Rules

Accounting rules introduce noise and bias because it is often difficult to restrict management discretion without reducing the information content of accounting data. For example, the Statement of Financial Accounting Standards (SFAS) No. 2 issued by the FASB requires firms to expense research outlays when they are incurred. Clearly, some research expenditures have future value while others do not. However, because SFAS 2 does not allow firms to distinguish between the two types of expenditures, it leads to a systematic distortion of reported accounting numbers. Broadly speaking, the degree of distortion introduced by accounting standards depends on how well uniform accounting standards capture the nature of a firm's transactions.

### Forecast Errors

Another source of noise in accounting data arises from pure forecast error, because managers cannot predict future consequences of current transactions perfectly. For example, when a firm sells products on credit, accrual accounting requires managers to make a judgment about the probability of collecting payments from customers. If payments are deemed "reasonably certain," the firm treats the transactions as sales, creating accounts receivable on its balance sheet. Managers then make an estimate of the proportion of receivables that will not be collected. Because managers

do not have perfect foresight, actual customer defaults are likely to be different from estimated defaults, leading to a forecast error. The extent of errors in managers' accounting forecasts depends on a variety of factors including the complexity of the business transactions, the predictability of the firm's environment, and unforeseen economy-wide changes.

### Managers' Accounting Choices

Corporate managers also introduce noise and bias into accounting data through their own accounting decisions. Managers have a variety of incentives to exercise their accounting discretion to achieve certain objectives<sup>8</sup>:

- *Accounting-based debt covenants.* Managers may make accounting decisions to meet certain contractual obligations in their debt covenants. For example, firms' lending agreements with banks and other debt holders require them to meet covenants related to interest coverage, working capital ratios, and net worth, all defined in terms of accounting numbers. Violation of these agreements may be costly because lenders can trigger penalties including demanding immediate repayment of their loans. Managers of firms close to violating debt covenants have an incentive to select accounting policies and estimates to reduce the probability of covenant violation. The debt covenant motivation for managers' accounting decisions has been analyzed by a number of accounting researchers.<sup>9</sup>
- *Management compensation.* Another motivation for managers' accounting choice comes from the fact that their compensation and job security are often tied to reported profits. For example, many top managers receive bonus compensation if they exceed certain prespecified profit targets. This provides motivation for managers to choose accounting policies and estimates to maximize their expected compensation.<sup>10</sup> Stock option awards can also potentially induce managers to manage earnings. Options provide managers with incentives to understate earnings prior to option grants to lower the firm's current stock price and hence the option exercise price, and to inflate earnings and stock prices at the time of option exercise.<sup>11</sup>
- *Corporate control contests.* In corporate control contests, including hostile takeovers and proxy fights, competing management groups attempt to win over the firm's shareholders. Accounting numbers are used extensively in debating managers' performance in these contests. Therefore, managers may make accounting decisions to influence investor perceptions in corporate control contests.<sup>12</sup>
- *Tax considerations.* Managers may also make reporting choices to trade off between financial reporting and tax considerations. For example, U.S. firms are required to use LIFO inventory accounting for shareholder reporting in order to use it for tax reporting. Under LIFO, when prices are rising, firms report lower profits, thereby reducing tax payments. Some firms may forgo the tax reduction in order to report higher profits in their financial statements.<sup>13</sup>
- *Regulatory considerations.* Since accounting numbers are used by regulators in a variety of contexts, managers of some firms may make accounting decisions to influence regulatory outcomes. Examples of regulatory situations where accounting numbers are used include antitrust actions, import tariffs to protect domestic industries, and tax policies.<sup>14</sup>
- *Capital market considerations.* Managers may make accounting decisions to influence the perceptions of capital markets. When there are information asymmetries between managers and outsiders, this strategy may succeed in influencing investor perceptions, at least temporarily.<sup>15</sup>
- *Stakeholder considerations.* Managers may also make accounting decisions to influence the perception of important stakeholders in the firm. For example, since labor unions can use healthy profits as a basis for demanding wage

increases, managers may make accounting decisions to decrease income when they are facing union contract negotiations. In countries like Germany, where labor unions are strong, these considerations appear to play an important role in firms' accounting policy. Other important stakeholders that firms may wish to influence through their financial reports include suppliers and customers.<sup>16</sup>

- *Competitive considerations.* The dynamics of competition in an industry might also influence a firm's reporting choices. For example, a firm's segment disclosure decisions may be influenced by its concern that disaggregated disclosure may help competitors in their business decisions. Similarly, firms may not disclose data on their margins by product line for fear of giving away proprietary information. Finally, firms may discourage new entrants by making income-decreasing accounting choices.

In addition to accounting policy choices and estimates, the level of disclosure is also an important determinant of a firm's accounting quality. Corporate managers can choose disclosure policies that make it more or less costly for external users of financial reports to understand the true economic picture of their businesses. Accounting regulations usually prescribe minimum disclosure requirements, but they do not restrict managers from voluntarily providing additional disclosures. Managers can use various parts of the financial reports, including the Letter to the Shareholders, Management Discussion and Analysis, and footnotes, to describe the company's strategy, its accounting policies, and its current performance. There is wide variation across firms in how managers use their disclosure flexibility.<sup>17</sup>

## STEPS IN PERFORMING ACCOUNTING ANALYSIS

In this section we discuss a series of steps that an analyst can follow to evaluate a firm's accounting quality.

### **Step 1: Identify Principal Accounting Policies**

As discussed in the chapter on business strategy analysis, a firm's industry characteristics and its own competitive strategy determine its key success factors and risks. One of the goals of financial statement analysis is to evaluate how well these success factors and risks are being managed by the firm. In accounting analysis, therefore, the analyst should identify and evaluate the policies and the estimates the firm uses to measure its critical factors and risks.

Key success factors in the banking industry include interest rate and credit risk management; in the retail industry, inventory management is important; and for a manufacturer competing on product quality and innovation, research and development, and product defects after sale are major areas of concern. A significant success factor in the leasing business is to make accurate forecasts of residual values of the leased equipment at the end of the lease terms. In each of these cases, the analyst has to identify the accounting measures the firm uses to capture these business constructs, the policies that determine how the measures are implemented, and the important estimates embedded in these policies. For example, the accounting measure a bank uses to capture credit risk is its loan loss reserves, and the accounting measure that captures product quality for a manufacturer is its warranty expenses and reserves. For a firm in the equipment leasing industry, one of the most important accounting policies is the way residual values are recorded. Residual values influence the company's reported profits and its asset base. If residual values are overestimated, the firm runs the risk of having to take large write-offs in the future.

## Step 2: Assess Accounting Flexibility

Not all firms have equal flexibility in choosing their accounting policies and estimates. Some firms' accounting choice is severely constrained by accounting standards and conventions. For example, even though research and development is a key success factor for biotechnology companies, managers have no accounting discretion in reporting on this activity. Similarly, even though marketing and brand building are essential to the success of consumer goods firms, they are required to expense all their marketing outlays. In contrast, managing credit risk is one of the critical success factors for banks, and bank managers have the freedom to estimate expected defaults on their loans. Similarly, software developers have the flexibility to decide at what points in their development cycles the outlays can be capitalized.

If managers have little flexibility in choosing accounting policies and estimates related to their key success factors (as in the case of biotechnology firms), accounting data are likely to be less informative for understanding the firm's economics. In contrast, if managers have considerable flexibility in choosing the policies and estimates (as in the case of software developers), accounting numbers have the potential to be informative, depending upon how managers exercise this flexibility.

Regardless of the degree of accounting flexibility a firm's managers have in measuring their key success factors and risks, they have some flexibility with respect to several other accounting policies. For example, all firms have to make choices with respect to depreciation policy (straight-line or accelerated methods), inventory accounting policy (LIFO, FIFO, or Average Cost), and policies regarding the estimation of pension and other post-employment benefits (expected return on plan assets, discount rate for liabilities, and rate of increase in wages and health care costs). Since all these policy choices can have a significant impact on the reported performance of a firm, they offer an opportunity for the firm to manage its reported numbers and should be the focus of analysis in this step.

## Step 3: Evaluate Accounting Strategy

When managers have accounting flexibility, they can use it either to communicate their firm's economic situation or to hide true performance. Some of the strategy questions one could ask in examining how managers exercise their accounting flexibility include the following:

- How do the firm's accounting policies compare to the norms in the industry? If they are dissimilar, is it because the firm's competitive strategy is unique? For example, consider a firm that reports a lower warranty allowance than the industry average. One explanation is that the firm competes on the basis of high quality and has invested considerable resources to reduce the rate of product failure. An alternative explanation is that the firm is merely understating its warranty liabilities.
- Do managers face strong incentives to use accounting discretion to manage earnings? For example, is the firm close to violating bond covenants? Or are the managers having difficulty meeting accounting-based bonus targets? Does management own significant stock? Is the firm in the middle of a proxy fight or union negotiations? Managers may also make accounting decisions to reduce tax payments or to influence the perceptions of the firm's competitors.
- Has the firm changed any of its policies or estimates? What is the justification? What is the impact of these changes? For example, if warranty expenses decreased, is it because the firm made significant investments to improve quality?
- Have the company's policies and estimates been realistic in the past? For example, firms may overstate their revenues and understate their expenses during the year



by manipulating quarterly reports, which are not subject to a full-blown external audit. However, the auditing process at the end of the fiscal year forces such companies to make large fourth-quarter adjustments, providing an opportunity for the analyst to assess the quality of the firm's interim reporting. Similarly, firms that depreciate fixed assets too slowly will be forced to take a large write-off later. A history of write-offs may be, therefore, a sign of prior earnings management.

- Does the firm structure any significant business transactions so that it can achieve certain accounting objectives? For example, leasing firms can alter lease terms (the length of the lease or the bargain purchase option at the end of the lease term) so that the transactions qualify as sales-type leases for the lessors. Enron structured acquisitions of joint venture interests and hedging transactions with special purpose entities to avoid having to show joint venture liabilities, and to avoid reporting investment losses in its financial statements.<sup>18</sup> Such behavior may suggest that the firm's managers are willing to expend economic resources merely to achieve an accounting objective.

#### Step 4: Evaluate the Quality of Disclosure

Managers can make it more or less easy for an analyst to assess the firm's accounting quality and to use its financial statements to understand business reality. While accounting rules require a certain amount of minimum disclosure, managers have considerable choice in the matter. Disclosure quality, therefore, is an important dimension of a firm's accounting quality.

In assessing a firm's disclosure quality, an analyst could ask the following questions:

- Does the company provide adequate disclosures to assess the firm's business strategy and its economic consequences? For example, some firms use the Letter to the Shareholders in their annual report to clearly lay out the firm's industry conditions, its competitive position, and management's plans for the future. Others use the letter to puff up the firm's financial performance and gloss over any competitive difficulties the firm might be facing.
- Do the footnotes adequately explain the key accounting policies and assumptions and their logic? For example, if a firm's revenue and expense recognition policies differ from industry norms, the firm can explain its choices in a footnote. Similarly, when there are significant changes in a firm's policies, footnotes can be used to disclose the reasons.
- Does the firm adequately explain its current performance? The Management Discussion and Analysis (MD&A) section of the annual report provides an opportunity to help analysts understand the reasons behind a firm's performance changes. Some firms use this section to link financial performance to business conditions. For example, if profit margins went down in a period, was it because of price competition or because of increases in manufacturing costs? If the selling and general administrative expenses went up, was it because the firm is investing in a differentiation strategy, or because unproductive overhead expenses were creeping up? Based on a review of the Fortune 500 companies, the SEC released in 2003 a circular indicating that companies should provide more discussion in MD&A about their critical accounting policies.<sup>19</sup> Companies were encouraged to disclose the most difficult and judgmental estimates and accounting policies they used, among other guidance.
- If accounting rules and conventions restrict the firm from measuring its key success factors appropriately, does the firm provide adequate additional disclosure to help outsiders understand how these factors are being managed? For example, if a firm invests in product quality and customer service, accounting rules do not allow the management to capitalize these outlays, even when the future benefits are certain. The firm's MD&A can be used to highlight how

these outlays are being managed and their performance consequences. For example, the firm can disclose physical indexes of defect rates and customer satisfaction so that outsiders can assess the progress being made in these areas and the future cash flow consequences of these actions.

- If a firm is in multiple business segments, what is the quality of segment disclosure? Some firms provide excellent discussion of their performance by product segments and geographic segments. Others lump many different businesses into one broad segment. The level of competition in an industry and management's willingness to share desegregated performance data influence a firm's quality of segment disclosure.
- How forthcoming is the management with respect to bad news? A firm's disclosure quality is most clearly revealed by the way management deals with bad news. Does it adequately explain the reasons for poor performance? Does the company clearly articulate its strategy, if any, to address the company's performance problems?
- How good is the firm's investor relations program? Does the firm provide fact books with detailed data on the firm's business and performance? Is management accessible to analysts?

### Step 5: Identify Potential Red Flags

In addition to the preceding steps, a common approach to accounting quality analysis is to look for "red flags" pointing to questionable accounting. These indicators suggest that the analyst should examine certain items more closely or gather more information on them. Some common red flags are the following:

- *Unexplained changes in accounting, especially when performance is poor.* This may suggest that managers are using their accounting discretion to "dress up" their financial statements.<sup>20</sup>
- *Unexplained transactions that boost profits.* For example, firms might undertake balance sheet transactions, such as asset sales or debt for equity swaps, to realize gains in periods when operating performance is poor.<sup>21</sup>
- *Unusual increases in accounts receivable in relation to sales increases.* This may suggest that the company is relaxing its credit policies or artificially loading up its distribution channels to record revenues during the current period, a practice commonly referred to as "channel stuffing." If credit policies are relaxed unduly, the firm may face receivable write-offs in subsequent periods as a result of customer defaults. If the firm accelerates shipments to its distributors, it may face either product returns or reduced shipments in subsequent periods.
- *Unusual increases in inventories in relation to sales increases.* If the inventory build-up is due to an increase in finished goods inventory, it could be a sign that demand for the firm's products is slowing down, suggesting that the firm may be forced to cut prices (and hence earn lower margins) or write down its inventory. A build-up in work-in-progress inventory tends to be good news on average, probably signaling that managers expect an increase in sales. If the build-up is in raw materials, it could suggest manufacturing or procurement inefficiencies, leading to an increase in cost of goods sold (and hence lower margins).<sup>22</sup>
- *An increasing gap between a firm's reported income and its cash flow from operating activities.* While it is legitimate for accrual accounting numbers to differ from cash flows, there is usually a steady relationship between the two if the company's accounting policies remain the same. Therefore, any *change* in the relationship between reported profits and operating cash flows might indicate subtle changes in the firm's accrual estimates. For example, a firm undertaking large construction contracts might use the percentage-of-completion method to record revenues. While earnings and operating cash flows are likely to differ for such a firm, they should bear a steady relationship to each other. Now suppose

the firm increases revenues in a period through an aggressive application of the percentage-of-completion method. Then its earnings will go up, but its cash flow remains unaffected. This change in the firm's accounting quality will be manifested by a *change* in the relationship between the firm's earnings and cash flows.

- *An increasing gap between a firm's reported income and its tax income.* Once again, it is quite legitimate for a firm to follow different accounting policies for financial reporting and tax accounting as long as the tax law allows it.<sup>23</sup> However, the relationship between a firm's book and tax accounting is likely to remain stable over time unless there are significant changes in tax rules or accounting standards. Thus, an increasing gap between a firm's reported income and its tax income may indicate that financial reporting to shareholders has become more aggressive. For example, warranty expenses are estimated on an accrual basis for financial reporting, but they are recorded on a cash basis for tax reporting. Unless there is a big change in the firm's product quality, these two numbers bear a consistent relationship to each other. Therefore, a change in this relationship can be an indication either that product quality is changing significantly or that financial reporting estimates are changing.
- *A tendency to use financing mechanisms such as research and development partnerships, special-purpose entities, and the sale of receivables with recourse.* While these arrangements may have a sound business logic, they can also provide management with an opportunity to understate the firm's liabilities and/or overstate its assets.<sup>24</sup>
- *Unexpected large asset write-offs.* This may suggest that management is slow to incorporate changing business circumstances into its accounting estimates. Asset write-offs may also be a result of unexpected changes in business circumstances.<sup>25</sup>
- *Large fourth-quarter adjustments.* A firm's annual reports are audited by the external auditors, but its interim financial statements are usually only reviewed. If a firm's management is reluctant to make appropriate accounting estimates (such as provisions for uncollectible receivables) in its interim statements, it could be forced to make adjustments at the end of the year as a result of pressure from its external auditors. A consistent pattern of fourth-quarter adjustments, therefore, may indicate aggressive management of interim reporting.<sup>26</sup>
- *Qualified audit opinions or changes in independent auditors that are not well justified.* These may indicate a firm's aggressive attitude or a tendency to "opinion shop."
- *Related-party transactions or transactions between related entities.* These transactions may lack the objectivity of the marketplace, and managers' accounting estimates related to these transactions are likely to be more subjective and potentially self-serving.<sup>27</sup>

While the preceding list provides a number of red flags for potentially poor accounting quality, it is important to do further analysis before reaching final conclusions. Each of the red flags has multiple interpretations; some interpretations are based on sound business reasons, and others indicate questionable accounting. It is, therefore, best to use the red flag analysis as a starting point for further probing, not as an end point in itself.<sup>28</sup>

### Step 6: Undo Accounting Distortions

If the accounting analysis suggests that the firm's reported numbers are misleading, analysts should attempt to restate the reported numbers to reduce the distortion to the extent possible. It is, of course, virtually impossible to perfectly undo the distortion using outside information alone. However, some progress can be made in this direction by using the cash flow statement and the financial statement footnotes.

A firm's cash flow statement provides a reconciliation of its performance based on accrual accounting and cash accounting. If the analyst is unsure of the quality of the firm's accrual accounting, the cash flow statement provides an alternative benchmark of its performance. The cash flow statement also provides information on how individual line items in the income statement diverge from the underlying cash flows. For example, if an analyst is concerned that the firm is aggressively capitalizing certain costs that should be expensed, the information in the cash flow statement provides a basis to make the necessary adjustment.

Financial statement footnotes also provide information that is potentially useful in restating reported accounting numbers. For example, when a firm changes its accounting policies, it provides a footnote indicating the effect of that change if it is material. Similarly, some firms provide information on the details of accrual estimates such as the allowance for bad debts. The tax footnote usually provides information on the differences between a firm's accounting policies for shareholder reporting and tax reporting. Since tax reporting is often more conservative than shareholder reporting, the information in the tax footnote can be used to estimate what the earnings reported to shareholders would be under more conservative policies.

In Chapter 4, we show how to make accounting adjustments for some of the most common types of accounting distortions.

## ACCOUNTING ANALYSIS PITFALLS

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There are several potential pitfalls and common misconceptions in accounting analysis that an analyst should avoid.

### 1. Conservative accounting is not "good" accounting.

Some firms take the approach that it pays to be conservative in financial reporting and to set aside as much as possible for contingencies. This logic is commonly used to justify the expensing of R&D and advertising, and the rapid write-down of intangible assets. It is also used to support large loss reserves for insurance companies, for merger expenses, and for restructuring charges.

From the standpoint of a financial statement user, it is important to recognize that conservative accounting is not the same as "good" accounting. Financial statement users want to evaluate how well a firm's accounting captures business reality in an unbiased manner, and conservative accounting can be as misleading as aggressive accounting in this respect.

It is certainly true that it can be difficult to estimate the economic benefits from many intangibles. However, the intangible nature of some assets does not mean that they do not have value. Indeed, for many firms these types of assets are their most valued. For example, the two most valued assets for the pharmaceutical company Pfizer are its research capabilities that permit it to generate new drugs, and its sales force that enables it to sell those drugs to doctors. Yet neither is recorded on Pfizer's balance sheet. From the investors' point of view, accountants' reluctance to value intangible assets does not diminish their importance. If they are not included in financial statements, investors must look to alternative sources of information on these assets.

Further, conservative accounting often provides managers with opportunities for "income smoothing," which may prevent analysts from recognizing poor performance in a timely fashion. Finally, over time investors are likely to figure out which firms are conservative and may discount their management's disclosures and communications.

## 2. Not all unusual accounting is questionable.

It is easy to confuse unusual accounting with questionable accounting. While unusual accounting choices might make a firm's performance difficult to compare with other firms' performance, such an accounting choice might be justified if the company's business is unusual. For example, firms that follow differentiated strategies or firms that structure their business in an innovative manner to take advantage of particular market situations may make unusual accounting choices to properly reflect their business. Therefore, it is important to evaluate a company's accounting choices in the context of its business strategy.

Similarly, it is important not to automatically attribute all changes in a firm's accounting policies and accruals to earnings management motives.<sup>29</sup> Accounting changes can also reflect changed business circumstances. For example, as already discussed, a firm that shows unusual increases in its inventory might be preparing for a new product introduction. Similarly, unusual increases in receivables might merely be due to changes in a firm's sales strategy. Unusual decreases in the allowance for uncollectible receivables might reflect a firm's changed customer focus. It is therefore important for an analyst to consider all possible explanations for accounting changes and investigate them using the qualitative information available in a firm's financial statements.

## VALUE OF ACCOUNTING DATA AND ACCOUNTING ANALYSIS

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What is the value of accounting information and accounting analysis? Given the incentives and opportunities for managers to affect their firms' reported accounting numbers, some have argued that accounting data and accounting analysis are not likely to be useful for investors.

Researchers have examined the value of earnings and return on equity (ROE) by comparing stock returns that could be earned by a hypothetical investor who has perfect foresight of firms' earnings, return on equity (ROE), and cash flows for the following year.<sup>30</sup> To assess the importance of earnings, the hypothetical investor is assumed to buy stocks of firms that have earnings increases for the subsequent year and to sell stocks of firms with subsequent earnings decreases. If this strategy is followed each year during the period 1954 to 1996, the hypothetical investor would have earned an average return of 37.5 percent per year. If a similar investment strategy is followed using ROE, buying stocks with subsequent increases in ROE and selling stocks with ROE decreases, an even higher annual return, 43 percent, would be earned. In contrast, cash flow data appear to be considerably less valuable than earnings or ROE information. Annual returns generated from buying stocks with increased subsequent cash flows from operations and selling stocks with cash flow decreases would be only 9 percent. This suggests that next period's earnings and ROE performance are more relevant information for investors than cash flow performance.

Overall, this research suggests that the institutional arrangements and conventions created to mitigate potential misuse of accounting by managers are effective in providing assurance to investors. The research indicates that investors do not view earnings management as so pervasive as to make earnings data unreliable.

A number of research studies have examined whether accounting analysis is a valuable activity. By and large, this evidence indicates that there are opportunities for superior analysts to earn positive stock returns. Studies show that companies

criticized in the financial press for misleading financial reporting subsequently suffered an average stock price drop of 8 percent.<sup>31</sup> Firms where managers appeared to inflate reported earnings prior to an equity issue and subsequently reported poor earnings performance had more negative stock performance after the offer than firms with no apparent earnings management.<sup>32</sup> Finally, firms subject to SEC investigation for earnings management showed an average stock price decline of 9 percent when the earnings management was first announced, and they continued to have poor stock performance for up to two years.<sup>33</sup>

These findings imply that analysts who are able to identify firms with misleading accounting are able to create value for investors. The findings also indicate that the stock market ultimately sees through earnings management. In most cases, earnings management is eventually uncovered and the stock price responds negatively to evidence that firms have inflated prior earnings through misleading accounting.

## SUMMARY

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In summary, accounting analysis is an important step in the process of analyzing corporate financial reports. The purpose of accounting analysis is to evaluate the degree to which a firm's accounting captures the underlying business reality. Sound accounting analysis improves the reliability of conclusions from financial analysis, the next step in financial statement analysis.

There are six principal steps in accounting analysis. The analyst begins by identifying the key accounting policies and estimates, given the firm's industry and its business strategy. The second step is to evaluate the degree of flexibility available to managers, given the accounting rules and conventions. Next, the analyst evaluates how managers exercise their accounting flexibility and the likely motivations behind managers' accounting strategy. The fourth step involves assessing the depth and quality of a firm's disclosures. The analyst should next identify any red flags needing further investigation. The final step in accounting analysis is to restate accounting numbers to remove any noise and bias introduced by the accounting rules and management decisions.

The next chapter discusses how to implement these concepts and shows how to make some of the most common types of adjustments.

## DISCUSSION QUESTIONS

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1. A finance student states, "I don't understand why anyone pays any attention to accounting earnings numbers, given that a 'clean' number like cash from operations is readily available." Do you agree? Why or why not?
2. Fred argues, "The standards that I like most are the ones that eliminate all management discretion in reporting—that way I get uniform numbers across all companies and don't have to worry about doing accounting analysis." Do you agree? Why or why not?
3. Bill Simon says, "We should get rid of the FASB and SEC since free market forces will make sure that companies report reliable information." Do you agree? Why or why not?
4. Many firms recognize revenues at the point of shipment. This provides an incentive to accelerate revenues by shipping goods at the end of the quarter. Consider two

companies, one of which ships its product evenly throughout the quarter, and the second which ships all its products in the last two weeks of the quarter. Each company's customers pay thirty days after receiving shipment. Using accounting ratios, how can you distinguish these companies?

5. a. If management reports truthfully, what economic events are likely to prompt the following accounting changes?
  - Increase in the estimated life of depreciable assets
  - Decrease in the uncollectible allowance as a percentage of gross receivables
  - Recognition of revenues at the point of delivery rather than at the point cash is received
  - Capitalization of a higher proportion of software R&D costs
- b. What features of accounting, if any, would make it costly for dishonest managers to make the same changes without any corresponding economic changes?
6. The conservatism principle arises because of concerns about management's incentives to overstate the firm's performance. Joe Banks argues, "We could get rid of conservatism and make accounting numbers more useful if we delegated financial reporting to independent auditors rather than to corporate managers." Do you agree? Why or why not?
7. A fund manager states, "I refuse to buy any company that makes a voluntary accounting change, since it's certainly a case of management trying to hide bad news." Can you think of any alternative interpretation?

## NOTES

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1. Accounting analysis is sometimes also called "quality of earnings analysis." We prefer to use the term *accounting analysis* since we are discussing a broader concept than merely a firm's earnings quality.
2. These definitions paraphrase those of the Financial Accounting Standards Board (FASB), Statement of Financial Accounting Concepts No. 6, "Elements of Financial Statements" (1985). Our intent is to present the definitions at a conceptual, not technical, level. For more complete discussion of these and related concepts, see the FASB's Statements of Financial Accounting Concepts.
3. SEC rules state that these criteria are satisfied when (i) there is persuasive evidence that an arrangement exists, (ii) delivery has occurred or services have been rendered, (iii) the selling price is fixed or determinable, and (iv) collectibility is reasonably assured. (see SAB 104).
4. Strictly speaking, the comprehensive net income of a firm also includes gains and losses from increases and decreases in equity from nonoperating activities or extraordinary items.
5. Both U.S. and international standard setters are placing increased emphasis on fair value as a basis for accounting valuation. See for example recent U.S. standards on derivatives and most marketable securities.

6. Thus, although accrual accounting is theoretically superior to cash accounting in measuring a firm's periodic performance, the distortions it introduces can make accounting data less valuable to users. If these distortions are large enough, current cash flows may measure a firm's periodic performance better than accounting profits. The relative usefulness of cash flows and accounting profits in measuring performance, therefore, varies from firm to firm. For empirical evidence on this issue, see P. Dechow, "Accounting Earnings and Cash Flows as Measures of Firm Performance: The Role of Accounting Accruals," *Journal of Accounting and Economics* 18 (July 1994): 3–42.
7. For example, Abraham Briloff wrote a series of accounting analyses of public companies in *Barron's* over several years. On average, the stock prices of the analyzed companies changed by about 8 percent on the day these articles were published, indicating the potential value of performing such analysis. For a more complete discussion of this evidence, see G. Foster, "Briloff and the Capital Market," *Journal of Accounting Research* 17 (Spring 1979): 262–74.
8. For a complete discussion of these motivations, see *Positive Accounting Theory*, by R. Watts and J. Zimmerman, (Englewood Cliffs, NJ: Prentice-Hall, 1986). A summary of this research is provided by T. Fields, T. Lys, and L. Vincent in "Empirical Research on Accounting Choice," *Journal of Accounting & Economics* 31 (September 2001): 255–307.
9. The most convincing evidence supporting the covenant hypothesis is reported in a study of the accounting decisions by firms in financial distress: A. Sweeney, "Debt-Covenant Violations and Managers' Accounting Responses," *Journal of Accounting and Economics* 17 (May 1994): 281–308.
10. Studies that examine the bonus hypothesis generally report evidence supporting the view that managers' accounting decisions are influenced by compensation considerations. See, for example, P. Healy, "The Effect of Bonus Schemes on Accounting Decisions," *Journal of Accounting and Economics* 7 (April 1985): 85–107; R. Holthausen, D. Larcker, and R. Sloan, "Annual Bonus Schemes and the Manipulation of Earnings," *Journal of Accounting and Economics* 19 (February 1995): 29–74; and F. Guidry, A. Leone, and S. Rock, "Earnings-Based Bonus Plans and Earnings Management by Business Unit Managers," *Journal of Accounting and Economics* 26 (January 1999): 113–42.
11. For empirical evidence that CEOs of firms with scheduled awards make opportunistic voluntary disclosures to maximize stock award compensation, see D. Aboody and R. Kasznik, "CEO Stock Option Awards and the timing of corporate voluntary disclosures," *Journal of Accounting and Economics* 29 (February 2000): 73–100.
12. L. DeAngelo, "Managerial Competition, Information Costs, and Corporate Governance: The Use of Accounting Performance Measures in Proxy Contests," *Journal of Accounting and Economics* 10 (January 1988): 3–36.
13. The trade-off between taxes and financial reporting in the context of managers' accounting decisions is discussed in detail in *Taxes and Business Strategy* by M. Scholes and M. Wolfson (Englewood Cliffs, NJ: Prentice-Hall, 1992). Many empirical studies have examined firms' LIFO/FIFO choices.



14. Several researchers have documented that firms affected by such situations have a motivation to influence regulators' perceptions through accounting decisions. For example, J. Jones documents that firms seeking import protections make income-decreasing accounting decisions in "Earnings Management During Import Relief Investigations," *Journal of Accounting Research* 29, no. 2 (Autumn 1991): 193-228. A number of studies find that banks that are close to minimum capital requirements overstate loan loss provisions, understate loan write-offs, and recognize abnormal realized gains on securities portfolios. See S. Moyer, "Capital Adequacy Ratio Regulations and Accounting Choices in Commercial Banks," *Journal of Accounting and Economics* 12 (July 1990): 123-54; M. Scholes, G. P. Wilson, and M. Wolfson, "Tax Planning, Regulatory Capital Planning, and Financial Reporting Strategy for Commercial Banks," *Review of Financial Studies* 3 (1990): 625-50; A. Beatty, S. Chamberlain, and J. Magliolo, "Managing Financial Reports of Commercial Banks: The Influence of Taxes, Regulatory Capital and Earnings," *Journal of Accounting Research* 33, no. 2 (1995): 231-61; and J. Collins, D. Shackelford, and J. Wahlen, "Bank Differences in the Coordination of Regulatory Capital, Earnings and Taxes," *Journal of Accounting Research* 33, no. 2 (Autumn 1995): 263-91. Finally, Kathy Petroni finds that financially weak property-casualty insurers that risk regulatory attention understate claim loss reserves: K. Petroni, "Optimistic Reporting in the Property Casualty Insurance Industry," *Journal of Accounting and Economics* 15 (December 1992): 485-508.
15. P. Healy and K. Palepu, "The Effect of Firms' Financial Disclosure Strategies on Stock Prices," *Accounting Horizons* 7 (March 1993): 1-11. For a summary of the empirical evidence, see P. Healy and J. Wahlen, "A Review of the Earnings Management Literature and Its Implications for Standard Setting," *Accounting Horizons* 13 (December 1999): 365-84.
16. R. Bowen, L. DuCharme, and D. Shores, "Stakeholders' Implicit Claims and Accounting Method Choice," *Journal of Accounting and Economics* 20 (December 1995): 255-295, argue that, based on theory and anecdotal evidence, managers choose long-run income-increasing accounting methods as a result of ongoing implicit claims between a firm and its customers, suppliers, employees, and short-term creditors.
17. Financial analysts pay close attention to managers' disclosure strategies; the Association for Investment Management and Research publishes an annual report evaluating them for U.S. firms. For a discussion of these ratings, see M. Lang and R. Lundholm, "Cross-sectional Determinants of Analysts' Ratings of Corporate Disclosures," *Journal of Accounting Research* 31 (Autumn 1993): 246-71.
18. See P. Healy and K. Palepu, "The Fall of Enron," *Journal of Economic Perspectives* 17, no. 2 (Spring 2003): 3-26.
19. Securities and Exchange Commission, "Summary by the Division of Corporation Finance of Significant Issues Addressed in the Review of the Periodic Reports of the Fortune 500 Companies," SEC Web site (accessed May 8, 2006).
20. For a detailed analysis of a company that made such changes, see "Anatomy of an Accounting Change" by K. Palepu in *Accounting & Management: Field Study Perspectives*, edited by W. Bruns, Jr. and R. Kaplan (Boston: Harvard Business School Press, 1987).

21. An example of this type of behavior is documented by John Hand in his study, "Firms Undertake Debt-Equity Swaps for an Accounting Paper Profit or True Financial Gain?" *The Accounting Review* 64 (October 1989): 587-623.
22. For an empirical analysis of inventory build-ups, see V. Bernard and J. Noel, "Do Inverse Disclosures Predict Sales and Earnings?" *Journal of Accounting, Auditing, and Finance* (Fall 1998): 1-12.
23. This is true by and large in the United States and in several other countries. However, in some countries such as Germany and Japan, tax accounting and financial reporting have historically been closely tied together, so this particular red flag has not been as meaningful. With the adoption of international accounting standards and the development of public capital markets, financial reporting and tax accounting in these countries have begun to diverge.
24. For research on accounting and economic incentives in the formation of R&D partnerships, see A. Beatty, P. Berger, and J. Magliolo, "Motives for Forming Research and Development Financing Organizations," *Journal of Accounting and Economics* 19 (1995): 411-42. An overview of Enron's use of special purpose entities to manage earnings and window-dress its balance sheet is provided by P. Healy and K. Palepu, "The Fall of Enron," *Journal of Economic Perspectives* 17, no. 2 (Spring 2003): 3-26.
25. For an empirical examination of asset write-offs, see J. Elliott and W. Shaw, "Write-off Accounting Procedures to Manage Perceptions," *Journal of Accounting Research* 26, 1988: 91-102.
26. R. Mendenhall and W. Nichols report evidence consistent with managers taking advantage of their discretion to postpone reporting bad news until the fourth quarter. R. Mendenhall and W. Nichols, "Bad News and Differential Market Reaction to Announcements of Earlier-Quarter versus Fourth-Quarter Earnings," *Journal of Accounting Research, Supplement* (1988): 63-86.
27. The role of insider transactions in the collapse of Enron are discussed by P. Healy and K. Palepu, "The Fall of Enron," *Journal of Economic Perspectives* 17, no. 2 (Spring 2003): 3-26.
28. This type of analysis is presented in the context of provisions for bad debt. M. McNichols and P. Wilson in their study, "Evidence of Earnings Management: the Provisions for Bad Debts," *Journal of Accounting Research, Supplement* (1988): 1-12.
29. This point has been made by several accounting researchers. For a summary of research on earnings management, see K. Schipper, "Earnings Management," *Accounting Horizons* (December 1989): 91-102.
30. See J. Chang, "The Decline in Value Relevance of Earnings and Book Values" (dissertation, Harvard University, 1998). Evidence is also reported by J. Francis and K. Soper, "Have Financial Statements Lost Their Relevance?" *Journal of Accounting Research* 37, no. 2 (Autumn 1999): 319-52, and W. E. Collins, E. Maydew, and I. Weiss, "Changes in the Value-Relevance of Earnings and Book Value over the Past Forty Years," *Journal of Accounting and Economics* 24 (1997): 39-67.
31. See G. Foster, "Briloff and the Capital Market," *Journal of Accounting Research* 17, (Spring 1979): 262-74.

32. See S. H. Teoh, I. Welch, and T. J. Wong, "Earnings Management and the Long-Run Market Performance of Initial Public Offerings," *Journal of Finance* 53 (December 1998a): 1935-74; S. H. Teoh, I. Welch, and T. J. Wong, "Earnings Management and the Post-Issue Underperformance of Seasoned Equity Offerings," *Journal of Financial Economics* 50 (October 1998): 63-99; and S. Teoh, T. Wong, and G. Rao, "Are Accruals During Initial Public Offerings Opportunistic?" *Review of Accounting Studies* 3, no. 1-2 (1998): 175-208.
33. See P. Dechow, R. Sloan, and A. Sweeney, "Causes and Consequences of Earnings Manipulation: An Analysis of Firms Subject to Enforcement Actions by the SEC," *Contemporary Accounting Research* 13, no. 1 (1996): 1-36, and M. D. Beneish, "Detecting GAAP Violation: Implications for Assessing Earnings Management among Firms with Extreme Financial Performance," *Journal of Accounting and Public Policy* 16 (1997): 271-309.