How To Read A Financial Statement

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FOREWORD

AMERICAN Institute for Economic Research first published *How to Read a Financial Statement* in 1993. Since then major stories of accounting problems, irregularities, and alleged fraud have periodically erupted in the national news. Most notably, the Enron scandal led to the collapse of that energy company (one of the largest bankruptcies in U.S. history) and the dissolution of its accounting firm, Arthur Andersen (then one of the "Big Five" accounting firms). These and other accounting scandals led Congress in 2002 to enact the Sarbanes-Oxley Act in an effort to strengthen corporate accounting controls.

These developments underscore the importance of understanding financial statements. While fraud is relatively rare and, by definition, difficult to detect, financial statements can reveal the problems that more commonly affect businesses and organizations—poor performance, shrinking sales, rising costs, questionable management decisions, etc. Conversely, they can provide assurance that resources are being used well and profitably.

Kenneth M. Lefkowitz, who prepared the original edition, covered the essential information you need to understand financial statements. This edition was prepared by R.D. Norton and includes a complete update of the sample statements and related analysis, as well as two new chapters that cover the Enron-era accounting scandals, Sarbanes-Oxley, and accounting issues raised by the subprime mortgage mess.

The primary purpose of this book, however, is not to study accounting scandals, but to help the reader understand how to read financial statements. We hope it will prove useful to anyone who desires to learn more about how to use such statements to evaluate the activities and financial standing of businesses, nonprofits, and other organizations.

—Kerry A. Lynch
Director of Research and Education

Contents

I.

WHY READ A FINANCIAL STATEMENT?

You got to know when to hold 'em,
Know when to fold 'em…
—The Gambler (D. Schlitz)

A financial statement quantifies an enterprise's activities and resources in units of currency. The four standard statements are the balance sheet, the income statement, the statement of cash flows, and the statement of owners' equity. Enterprises prepare financial statements at regular intervals, typically quarterly, to furnish managers, owners, creditors, and other interested parties with timely feedback about the results of their activities. In short, financial statements help to distinguish the winners from the losers.

With some analysis, a set of financial statements allows the reader to determine an enterprise's solvency and, if it is a business (rather than a nonprofit organization), its profitability. These determinations are crucial for the smooth functioning of the market economy, because they allow investors, lenders, entrepreneurs, and employees to direct their talents and financial resources toward the most rewarding opportunities, and away from the losers. The ongoing redirection of resources rewards successful managers, prompts poor performers to mend their ways, and minimizes the damage caused by the incompetents. Whenever this feedback is impeded, profitable opportunities go unexploited for lack of financing, and small errors of judgment compound into expensive debacles. Financial statements therefore are important decision-making tools.

Financial statements are products of the accounting process, which begins with simple bookkeeping, the maintenance of records of cash receipts and outlays. Bookkeeping records, such as the "trial balance," are seldom sufficient to provide useful information. Accounting involves the classification of an enterprise's transactions by management to produce financial statements. As such, its effectiveness depends on the rules that guide the accounting process, which vary from country to country. Where the rules are lax, enterprises can retain the confidence of investors and creditors while obscuring profitability and solvency problems. Lax rules also allow busi-

nesses to satisfy the tax authorities while obscuring unusual profitability. By forcing enterprises to acknowledge problems promptly, strict rules ensure that accounting produces accountability.

This book covers financial statements prepared under Generally Accepted Accounting Principles (GAAP), the set of rules that govern accounting practices in the United States. Much like the common law, GAAP is an evolving set of rules that is heavily influenced by practical considerations. Since 1917, several professional and regulatory bodies have contributed to the codification of GAAP, although much of it is not codified outside of accounting textbooks. Since 1973, the Financial Accounting Standards Board (FASB) has been the principal arbiter of GAAP, although the Securities and Exchange Commission (SEC), the American Institute of Certified Public Accountants (AICPA), and other organizations make major contributions to its continuing evolution.

Like any product of evolution, GAAP has few aspects that are settled, and many warts and blemishes. Its principles afford accountants considerable discretion, and accounting practice is a battleground for the competing interests of managers, investors, regulators, auditors, and others. Generally *contested* accounting principles might be a more accurate label, given the current state of affairs.

The Auditors' Report

Readers of financial statements still have no assurance that a set of statements complies with those rules unless independent public accountants have audited it. In an American audit, the independent accountants examine an enterprise's records and procedures to determine whether the financial statements conform to GAAP. The auditors themselves must proceed in accordance with generally accepted auditing standards, which require, among other procedures, basic tests of the integrity of an enterprise's books. Auditors advise management of any fraud, embezzlement, or the possibilities thereof that are discovered; but contrary to popular belief, *this is not their main purpose.* That, once again, is to certify that the management's accounting is in accordance with GAAP.

By law, financial statements in the annual reports of publicly held corporations must be audited, but the statements of other enterprises are less likely to be audited, and statements in corporate quarterly reports generally are not audited. In the absence of an audit, there is no reasonable assurance

that a set of financial statements is reliable. Every set of audited financial statements includes the auditors' report, which notes whether or not the statements are fair presentations that conform to GAAP.

Following the checklist below, readers of financial statements always should turn to the auditors' report first, before proceeding to the financial statements themselves.

A Checklist

Always remember that financial statements say what managements want to tell you. There is considerable leeway, even within GAAP. Before you begin any of the analyses described in the various chapters of this booklet, we suggest that you first complete the following steps:

1. Read the auditors' report to determine whether or not it is "clean." If the auditors mention items that limit the usefulness of the statements or that violate GAAP, review those items thoroughly.
2. Read the notes to the financial statements, paying particular attention to the organizing principles of the report (this note usually appears first), so that you understand what is and is not included.
3. Scan the asset side of the balance sheet to see if there are any intangibles listed, such as goodwill. The economic value of such assets may be questionable. Also on the asset side, check to see if marketable items, such as inventories and securities, are carried at their current market value. If, instead, they are shown at cost, make appropriate adjustments if their market values are disclosed elsewhere.
4. Scan the liabilities for unusual items. Pay particular attention to the structure of long-term debt, including the current portion, and to commitments and contingencies, if any. Fund balances or equity may have to be adjusted to reflect any questionable asset values found in step 3. Also, for nonprofits, note the extent to which fund balances are restricted, and why.
5. Review the cash flow statement. The additions to, and especially the deductions from, operating cash flows from non-cash items can provide valuable clues to unusual accounting practices requiring further scrutiny. Investing and financing activities may reflect important events that are not immediately evident on the balance sheet and income statement.

Because "clean" opinions, indicating that the auditors have found that the management's statements conform to GAAP, are valuable in relationships with investors and creditors, most management will accept adjustments suggested by auditors. By the same token, because auditors usually are hired and fired by management, auditors usually will accept management's figures, unless they fall outside the latitude permitted by GAAP. Accordingly, *readers of financial statements should pay close attention to any qualifications and explanations included in the auditors' opinion*. These can serve as a guide to significant problems that management may be attempting to minimize, or even to portray favorably.

The FASB has set forth highly specific guidelines governing the contents of auditors' reports. As a result, all reports that affirm the reliability of financial statements consist of the same boilerplate language. The standard report, as shown at right, contains an introductory paragraph, a scope paragraph, and an opinion paragraph. If the auditors' report contains just these three paragraphs, and if the opinion paragraph is unqualified, then the reader can proceed to the financial statements themselves with a "reasonable assurance" that the statements are reliable. Readers of financial statements should understand, however, the difference between *reasonable assurance* and *absolute assurance*. Only the former is provided by a clean audit.

An unqualified opinion affirms that the financial statements are fair presentations in all material respects and that they conform to GAAP. There are many cases of auditors being defrauded, but it takes a substantial effort to obtain an unqualified opinion on books that have been "cooked." Still, as the Enron and other accounting scandals of the early 2000s show, it can happen. (See Chapter VIII for examples, some of which include complicity by the auditors themselves.)

If the opinion paragraph contains language that differs from the example at right, the opinion is qualified. Qualified opinions usually indicate serious doubts about the reliability of the financial statements. Problems with the audited enterprise's practices and limitations in the scope of the audit both can give rise to qualifications. Particularly serious forms of qualification include *disclaimers*, in which the auditors lack sufficient evidence to express an opinion on the financial statements, and *adverse opinions*, which indicate material departures from GAAP.

An explanatory paragraph detailing the reasons for qualification usually follows a qualified opinion, but explanatory paragraphs do not always

Report of Independent Public Accountants

To the Shareholders of International Paper Company:

We have audited the accompanying consolidated balance sheets of International Paper Company and subsidiaries (the "Company") as of December 31, 2006 and 2005, and the related consolidated statements of operations, changes in shareholders' equity, and cash flows for each of the three years in the period ended December 31, 2006. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the financial statements based on our audits.

introductory paragraph

We conducted our audits in accordance with standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

scope paragraph

In our opinion, such consolidated financial statements present fairly, in all material respects, the financial position of International Paper Company and subsidiaries as of December 31, 2006 and 2005, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2006, in conformity with accounting principles generally accepted in the United States of America.

opinion paragraph

As discussed in Notes 4, 15 and 16 to the consolidated financial statements, the Company adopted Statement of Financial Accounting Standards No. 158, "Employers' Accounting for Defined Benefit Pension and Other Postretirement Plans – an amendment of FASB Statements No. 87, 88, 106, and 132(R)," effective December 31, 2006. As discussed in Notes 1, 4 and 17 to the consolidated financial statements, the Company adopted Statement of Financial Accounting Standards No. 123 (R), "Share-Based Payment," effective January 1, 2006.

nonstandard explanatory paragraph

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the effectiveness of the Company's internal control over financial reporting as of December 31, 2006, based on the criteria established in Internal Control – Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated February 26, 2007 expressed an unqualified opinion on management's assessment of the effectiveness of the Company's internal control over financial reporting and an unqualified opinion on the effectiveness of the Company's internal control over financial reporting.

opinion on company accounting controls

[Deloitte/Touche LLP]

Memphis, Tennessee
February 26, 2007

Adapted from *International Paper Annual Report for 2006* (Memphis, TN: International Paper Company, 2007), p. 47.

indicate qualifications. The example in this chapter is a case in point: the opinion is "clean," but it includes an explanatory paragraph. The most common reasons for adding an explanatory paragraph to an unqualified opinion includes changes in accounting principles (in this case, regarding pension funds) and changes in auditors. These changes are important, but they are not likely to affect the reliability of financial statements. The reader should be sure to ascertain the identity and reputation of the previous auditors (the auditors' report does not disclose these facts), and to determine the size of the cumulative effects of changes in accounting principles, which appear in the income statement.

Less common reasons for explanatory paragraphs include matters of emphasis, material uncertainties, and going-concern problems. Of these, matters of emphasis are least likely to affect the reliability of financial statements. Auditors often choose to emphasize an enterprise's dealings at less than arm's length, with officers and their relatives, for example. Material uncertainties are matters that could have a significant future impact on the financial statement, such as pending lawsuits, but which remain unresolved. Going-concern problems arise when an enterprise is perilously close to bankruptcy or insolvency, which can have a major impact on an enterprise's balance sheet.

Material uncertainties and going-concern problems are red flags, and are likely to affect the reliability of otherwise fairly presented financial statements. The reader should examine closely the disclosures of these matters in the notes to the financial statements.

The last paragraph is the auditors' opinion on the probity of the company's internal system of financial reporting. As recommended by the Treadway Commission some two decades ago, auditors now provide an explicit opinion as to whether a company's internal accounting procedures appear to be transparent and above-board. In this example, the opinion is unqualified, or clean.

INTERNATIONAL PAPER COMPANY
Consolidated Balance Sheet
December 31, 2006

Assets	
Current Assets:	(in millions)
Cash and temporary investments, at cost	$ 1,624
Accounts and notes receivable, less allowance of $85	2,704
Inventories	1,909
Other current assets, including assets and businesses for sale	2,400
Total Current Assets	$ 8,637
Plants, Properties, and Equipment, net of depreciation	8,993
Forestlands	259
Investments	641
Goodwill	2,929
Deferred Charges and Other Assets	2,575
Total Assets	**$24,034**
Liabilities and Common Shareholders' Equity	
Current Liabilities:	
Notes payable and current maturities of long-term debt	$ 692
Accounts payable	1,907
Accrued payroll and benefits	466
Other accrued liabilities	1,576
Total Current Liabilities	$ 4,641
Long-Term Debt	6,531
Deferred Income Taxes	2,233
Minority Interest and Other Liabilities	2,666
Commitments and Contingent Liabilities	
Total Liabilities	$16,071
Common Shareholders' Equity:	
Common stock, $1 par value (493.3 shares issued)	$ 493
Paid-in capital	6,735
Retained earnings, net of accumulated other comprehensive loss	2,173
Common stock held in treasury, at cost (39.8 shares)	(1,438)
Total Common Shareholders' Equity	$ 7,963
Total Liabilities and Common Shareholders' Equity	**$24,034**

Adapted from *International Paper Annual Report for 2006* (Memphis, TN: International Paper, 2007), p. 50. The notes on pp. 54-88 of the *Annual Report* are an integral part of the original statement.

II.

THE BALANCE SHEET

A balance sheet provides a snapshot of an enterprise's financial position on a given date. It lists the values of the enterprise's assets, liabilities, and equity on that date, usually the end of an accounting period. In the United States, a balance sheet customarily lists assets first, followed by liabilities and then equity (for businesses) or net assets (for nonprofit organizations). As the example at left shows, a balance sheet is a highly condensed enumeration of an enterprise's accounts. The published balance sheet of a large corporation compresses the balances of thousands of individual accounts into roughly 30 numbers. (Synonyms for balance sheet include statement of financial condition, statement of condition, statement of financial position, and statement of assets and liabilities.)

By law, balance sheets that appear in the annual reports of publicly traded corporations must be comparative balance sheets, which show the values of each line item at the end of two comparable accounting periods. Many enterprises not subject to this law also provide comparative balance sheets. The example at left is adapted from an annual report, but for the sake of simplicity it reports values for only one date.

The example follows the customary practice among businesses of presenting financial statements on a consolidated basis, which means that the accountants have added together the positions of all of the enterprise's subsidiaries and divisions to produce a total for the whole enterprise for each line item. The usual practice among *nonprofit* enterprises is to report the positions of various funds, which segregate the assets, liabilities, and net assets attributable to the major activities of the organization. Many nonprofits also report consolidated totals.

The balance sheet is so named because it balances an enterprise's assets against the two categories of claims on those assets, liabilities and equity (net assets). All balance sheets balance because equity (net assets) is a residual — by definition it is the difference between assets and liabilities:

(1) $$\text{equity} = \text{assets} - \text{liabilities}$$

Legally, the owners of a business hold an equity interest, a claim to that

portion of assets left over after the business has settled all claims held by outsiders. The claims held by outsiders are liabilities. A nonprofit organization, which has no owners, holds a claim on its own net assets, which it computes in the same way that a business computes equity:

(2) net assets = assets – liabilities

A rearrangement of Equation (1) gives the fundamental equation of accounting:

(3) assets = liabilities + equity

This fundamental equation illustrates the balance in the balance sheet. The two sides of the equation represent the two main sections of every balance sheet. "Assets" in the equation corresponds to

Total Assets..... **$24,034**

in the example. Similarly, "liabilities + equity" corresponds to

Total Liabilities and Common Shareholders' Equity..... **$24,034.**

As promised, the amounts on both lines are equal.

Assets and Valuation

The economic resources that an enterprise controls are its assets. Such resources can be physical (inventory and equipment, for example), technical (patented designs and processes, software, trademarks), or financial (cash, notes receivable, etc.). The main characteristic of assets is that an enterprise can exchange them for cash or use them to generate cash inflows indirectly. Although such cash flows are prospective, assets themselves are not.

The value of an asset as stated on the balance sheet is its "carrying value." In general, a balance sheet carries assets at their cost to the enterprise. The primary advantage of using this "cost principle" of valuation is that cost is easy to determine compared to, say, appraised value, market value (especially when there is no active market in an asset), and replacement cost. There are, however, many exceptions to the cost principle. If an asset has

a readily ascertainable market value, for example, the lower-of-cost-or-market rule requires an enterprise to carry the asset at market value (less anticipated selling expenses) if that remains lower than the asset's cost for an extended period. Similarly, if an enterprise estimates that loss, damage, theft, spoilage, default, or other mishaps have had a material effect on the value of an asset, the enterprise must *write down* the carrying value of that asset accordingly:

Accounts and notes receivable, less allowance of $85	2,704

The allowance in this example is an allowance for uncollectible accounts, *i.e.*, the amount of credit granted to customers that is estimated to be at risk of default. International Paper holds outstanding receivables on $2,789 million of sales, of which it estimates it will not collect $85 million, resulting in a net realizable value of receivables of $2,704 million.

Assets that contribute to an enterprise's operations over a useful life of many accounting periods, such as buildings and equipment, require another type of adjustment to historical cost. In order to match properly the revenue generated in each accounting period with the expenses incurred to generate that revenue, enterprises systematically allocate the costs of these types of assets over an estimated useful life.

The generic term for this allocation of costs is "amortization." The amortization of the cost of buildings and equipment is *depreciation*, and the amortization of the cost of acquiring natural resources is *depletion*. The carrying value of an amortizable asset decreases during its estimated useful life as an additional portion of its original cost is allocated to expenses for each passing accounting period. The carrying value of such an asset on any particular date is thus its original cost less the cumulative amortization to date.

Despite the variety of adjustments to historical cost, the asset values that a balance sheet reports often bear only a vague resemblance to replacement costs or market values. One factor that figures significantly in the distortion of balance sheet valuations is price inflation. As prices rise, the carrying values of inventories, equity securities, land, equipment, and other types of assets tend to become increasingly detached from current market conditions. The carrying value of a parcel of land acquired 20 or 30 years ago can differ dramatically from its resale value, for example. Although there are

strong practical justifications for an accounting system based on historical costs, users of financial statements should be well aware of the ludicrous valuations that such a system can produce.

Even when cost is indisputably a sound basis for valuation, changing prices still can produce difficulties in valuation. There are four acceptable methods for valuing assets accumulated during a period of changing prices. Inventory valuation is the most common of these methods. Enterprises that hold inventories disclose the valuation method or methods that they use in the notes to their financial statements.

In the case of retail inventories, the last-in, first-out (LIFO) method attributes the unit prices of lots purchased most recently to *sales* for the latest period, and uses the unit prices of earlier purchases to value the remaining *inventory*. The first-in, first-out (FIFO) method takes just the opposite approach, valuing inventory at the unit prices of the most recently purchased lots. The average-cost method values inventory at the weighted average unit price of all lots purchased. Given the prevailing upward trend of prices, LIFO produces lower valuations than the average-cost method, which in turn produces lower valuations than FIFO. The fourth valuation method is specific identification, in which the value of an inventory is the sum of the costs of each individual item. This method is the norm for expensive, readily identifiable items such as cars, jewelry, and machinery.

Types of Assets

A useful means of understanding the derivation and significance of balance sheet items, one seldom mentioned in the United States, is the British distinction between *personal*, *real*, and *nominal* accounts. All of the entries on a balance sheet fall into one or another of these classifications. The significance of these categories may not be intuitively obvious from their names, however.

In this framework, personal accounts are simply what the accounting entity owes to or is due from others. Such accounts include bank balances, IOUs of all kinds, accounts payable and receivable, etc. What such items have in common is that their value in terms of currency can be determined with a degree of certainty, as when a depositor, borrower, customer or supplier receives a letter from an auditor requesting "confirmation" of the balance that the auditor has found on the books of the entity he or she is auditing.

Real accounts, on the other hand, reflect an estimate of the value of tangible assets such as inventories, land, buildings, and equipment. This estimate is usually what the accounting entity paid to acquire the asset, which may be markedly different from the economic value of the item on the date of the balance sheet. Real accounts then are real in the sense that they represent real things that the entity owns (you can touch or kick them), but they can be quite "unreal" in terms of what an item might fetch in the marketplace or what it is worth to the entity as a going concern. In the instances of inventories and liquid securities, auditors often attempt to determine current prices and indicate both the cost and the market values on a balance sheet, but this seldom is done for non-depreciable assets such as land or for investments in closely held affiliates, such as joint ventures. Also, the accumulated depreciation on assets such as buildings or equipment may or may not serve to adjust the reported costs of such items to their current values.

Nominal accounts reflect entries that are purely internal to the accounting entity, as when a period's earnings are added to net worth or when the accumulated depreciation is deducted from the cost of real assets. Nominal accounts often are deemed to be the most significant by financial analysts, even though they are completely derivative and least connected to fact.

Another important classification of accounts is the distinction between current and non-current items. Current assets include (1) cash and (2) assets that will be converted to cash within one year (or within the average duration of one operating cycle, whichever is longer). A balance sheet lists current assets *in order of decreasing liquidity*: cash always tops the list, and the asset listed last is likely to take the most time and effort to convert to cash.

Current Assets:	(in millions)
Cash and temporary investments, at cost	$ 1,624
Accounts and notes receivable, less allowance of $85	2,704
Inventories	1,909
Other current assets, including assets and businesses for sale	2,400
Total Current Assets	$ 8,637

These are the assets that an enterprise liquidates regularly. An enterprise does so by direct exchange of non-cash assets for cash, or by conversion of non-cash assets to other current assets, which the enterprise then exchanges

for cash. Examples of direct exchange transactions include the liquidation of receivables, either by their sale to third parties or by the receipt of cash from debtors, and cash sales of finished goods inventories. Indirect liquidations involve sequences of transactions, as when a manufacturer (a) converts materials inventories and supplies into finished goods inventories, which it then (b) exchanges for accounts receivable, which it eventually (c) converts into cash.

In practice, not all current assets appear in the current assets section, and not all assets that appear there are current. International Paper, for example, does not list as a current asset the value of trees that it expects to harvest, convert to paper, and sell within the next operating cycle. It lumps these trees together with land and non-current trees in the "forestlands" account. Similarly, oil companies do not list any portion of oil in the ground among their current assets. In addition, no enterprise lists as a current asset the portion of fixed assets expected to be used up during the next operating cycle. Non-current assets that appear in the current section include notes receivable that mature in more than a year, supplies used to maintain fixed assets, slow-moving and obsolete inventories, and insurance premiums paid more than a year in advance.

Non-current assets generate cash flows indirectly, but they do so over the course of many operating cycles. They differ from current assets that generate cash flows indirectly because an enterprise does not use up or liquidate non-current assets completely in the course of normal operations. This is not to say that enterprises do not liquidate long-term investments or that equipment does not wear out or become obsolete. But enterprises typically acquire investments and equipment with the intent of holding them for many years. In recognition of these long holding periods, non-current assets appear below current assets on the balance sheet,

Total Current Assets	$ 8,637
Plants, Properties and Equipment, net of depreciation	8,993
Forestlands	259
Investments	641
Goodwill	2,929
Deferred Charges and Other Assets	2,575
Total Assets	$24,034

even though some non-current assets, notably investments in marketable securities, are as liquid as current assets.

There are two varieties of non-current assets. First, there are the physical and technical assets that an enterprise actively uses to generate cash flows. Second, there are *financial* assets, termed "investments," that an enterprise holds as a source of passive cash flows. The distinction between these two varieties is not always clear, because enterprises can hold investments in related enterprises in order to ensure smooth operations in their own lines of business. Manufacturers often hold stakes in their parts and raw materials suppliers, for example. Such "synergy" is a common justification for corporate acquisitions. (Also, financial businesses are another example in which the distinction is unclear, because they may generate cash flows by making loans to or investments in other businesses.)

Accounting for an enterprise's investments in affiliated companies can be complex, especially when the affiliated companies are not subsidiaries. A "subsidiary" is a company in which the controlling enterprise owns enough of the equity of that company to control the election of the board of directors. Such a controlling interest generally consists of 50 percent or more of the subsidiary's voting stock. In most cases, enterprises consolidate the assets and liabilities of subsidiaries in their published financial statements. "Consolidation" involves adding all the balances of a subsidiary's accounts to the comparable accounts of the parent and netting out the results of transactions between parent and subsidiary. When an enterprise uses a method other than consolidation, generally when accounting for a minority interest in an affiliate, the enterprise counts its equity interest in the affiliate under investments.

When an enterprise buys another business outright, it merges the asset and liability accounts of the acquisition with its own, recording the acquisition's accounts at fair market value. This process is different from consolidation because the acquisition does not maintain a separate set of accounting records after the merger —it is not a subsidiary. When the acquiring enterprise pays more than the fair market value of the acquisition's net identifiable assets, it accounts for the excess payment as "goodwill." Net identifiable assets are total assets less the sum of total liabilities and previously acquired goodwill. Goodwill represents the acquiring enterprise's recognition of the acquisition's potential for above-average earnings.

Liabilities

Liabilities are obligations that an enterprise has incurred in past transactions. An enterprise settles liabilities by transferring assets, usually cash, to its obligees or by using its assets to provide them with services. Liabilities are thus claims on an enterprise's assets. There are two important differences between liabilities and equity. First, liabilities are claims held by outsiders, whereas equity is the aggregate claim of a business's owners. Second, the amount of an enterprise's liabilities is independent of the amount of its assets, whereas the amount of equity depends on the amounts of assets and liabilities both, as shown in Equation (1) on page 9.

Priority for settlement is the guiding principle for ordering the items in the bottom half of a balance sheet. Among liabilities, therefore, current items appear first:

Current Liabilities:	
Notes payable and current maturities of long-term debt	$ 692
Accounts payable	1,907
Accrued payroll and benefits	466
Other accrued liabilities	1,576
Total Current Liabilities	$ 4,641

Much like current assets, current liabilities are those that an enterprise expects to settle within a year or within the average duration of one operating cycle, whichever is longer. Non-current liabilities, often called *long-term* liabilities, are those an enterprise does not expect to settle within this time frame. The placement of non-current liabilities reflects this lower priority:

Total Current Liabilities	$ 4,641
Long-Term Debt	6,531
Deferred Income Taxes	2,233
Minority Interest and Other Liabilities	2,666
Commitments and Contingent Liabilities	
Total Liabilities	$ 16,071

Most of a typical enterprise's liabilities are obligations to pay cash. These cash obligations fall into two categories. One is accrued expenses, which an

enterprise incurs by purchasing goods and services for which payment is not due immediately. The second is outstanding debt, which an enterprise incurs by borrowing cash.

Most non-cash liabilities represent payments received in advance for goods or services. By accepting advance payment for goods or services, a business incurs an obligation to provide them. Stadiums, landlords, magazines, and brain surgeons are examples of businesses that incur non-cash liabilities for advance payments.

A different type of non-cash liability is "minority interest" in a subsidiary. Minority interest is the share of a subsidiary's net assets that its minority shareholders own. Minority interest differs from other types of liabilities because of its equity characteristics: the bankruptcy liquidation of a subsidiary is the only situation that can force an enterprise to settle its obligation to minority shareholders. The only other circumstances that oblige an enterprise to settle with minority shareholders are those that the enterprise itself initiates, either by buying out some or all of the minority shareholders or by dissolving the subsidiary.

Deferred income taxes are similar to minority interest. Technically they are obligations to pay cash, but in practice an enterprise is not likely ever to have to settle the bulk of its deferred tax liabilities. Due to the peculiarities of tax allocation, a subject too complex to explain here, deferred income taxes grow or remain stable under most circumstances. Some balance sheets include an *asset* called "deferred income taxes," but that item represents prepaid income taxes. Although deferred income tax assets also are a product of tax allocation, they should not be confused with deferred income tax liabilities.

Many enterprises include a line for "commitments and contingent liabilities" in the liabilities section of the balance sheet. Unlike other line items, this line does not report a dollar value, because commitments and contingencies are not strictly liabilities. The reason for including the line is to alert the reader to further disclosure of these items in the notes to the financial statements. *Commitments* are agreements, usually formal contracts, to transact business in the future. Examples of commitments include purchase orders, long-term purchase and supply contracts, lines of credit, and employment contracts. *Contingent liabilities* are losses or obligations that may result from past events or transactions, pending some future outcome or decision. Examples of contingent liabilities include loan guarantees and

pending litigation. These items are not liabilities because an enterprise reporting them has yet to experience the transactions or events that would create formal obligations.

Equity

As discussed at the beginning of this chapter, equity is the ownership interest in the assets of a business, defined as the residual assets remaining after all liabilities have been settled:

(1) equity = assets – liabilities

A nonprofit enterprise computes its net assets similarly, but net assets do not constitute an ownership interest. In accounting terms, "book value" and "capital" are synonyms for equity. Similarly, for nonprofits, "surplus" is a synonym for net assets. "Net worth" is used as a synonym for both equity and net assets.

Increases in the equity of a business come from two sources: income and the contributions of owners. Increases in the net assets of a nonprofit enterprise also come from two sources: income and donations. Similarly, there are two reasons for decreases in the equity of a business: losses and distributions to owners. A nonprofit enterprise has no owners, so its net assets decrease only when it incurs losses.

A business's legal form of organization strongly influences the terms of ownership of its equity. Hence the line items that appear in the equity section of the business's balance sheet largely reflect the legal form of organization (proprietorship, partnership, or corporation). The balance sheets of small partnerships include a line item for the accumulated equity of each partner:

SMITH, DOE & JONES
Balance Sheet
December 31, 20__

Partners' Capital:	
J. Smith, capital	$45,000
J. Doe, capital	23,000
T. Jones, capital	15,000
Total Partners' Capital	$83,000

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When there are so many partners that this form of presentation becomes cumbersome, the balance sheet may report equity as a single line item. The balance sheets of sole proprietorships also follow this form:

JOAN SMITH, M.D.
Balance Sheet
December 31, 20__

Total Liabilities	$100,000
J. Smith, M.D., Capital	50,000
Total Liabilities and Proprietor's Capital	**$150,000**

Partnerships and sole proprietorships that have accumulated substantial losses may show deficits. In these two types of business, a deficit is simply negative equity, which arises when total liabilities exceed total assets:

JOAN SMITH, M.D.
Balance Sheet
December 31, 20__

Total Liabilities.	$125,000
J. Smith, M.D., Deficit	(10,000)
Total Liabilities and Proprietor's Capital	**$115,000**

Returning to our International Paper Company example, it is clear that the stockholders' equity section of a *corporate* balance sheet generally is more complex than the foregoing examples:

Common Shareholders' Equity:	
Common stock, $1 par value (493.3 shares issued)	$ 493
Paid-in capital	6,735
Retained earnings, net of accumulated other comprehensive loss	2,173
Common stock held in treasury, at cost (39.8 shares)	(1,438)
Total Common Shareholders' Equity	$ 7,963

This example is representative of the standard form of a stockholders' equity section, but the form of the section and the names of the line items vary widely. A few corporations present stockholders' equity as a line item in their published balance sheets, just as a sole proprietor or a large

partnership would.

Par value, also called stated value, is a corporation's legal minimum equity position. A corporation's directors cannot declare a dividend (dividends are paid out of equity) that would reduce total equity below the total par value of the corporation's stock. This restriction rarely is a practical consideration, and some states do not require a corporation to establish a par value for its stock. Each class of stock, if there is more than one, has its own per-share par value. The total par value of a class of stock is simply the per-share par value multiplied by the number of shares outstanding:

Common stock, $1 par value (493.3 shares issued)	$ 493

Nearly all stocks sell for much more than par value, so when a corporation issues stock, it accounts for its receipts in excess of par value as paid-in capital, also called additional paid-in capital and capital surplus.

International Paper has outstanding shares of only one type of common stock. Corporations that have more than one class of stock typically have one or more classes of preferred stock, and some also offer several varieties of common stock. Preferred stock is "preferred" as to dividends: a corporation cannot pay a dividend on common stock if it is in arrears on its preferred dividends. Preferred stock also takes priority over common stock in liquidation proceedings. Corporations use a wide variety of other features to make preferred stocks attractive to investors. The most common is a fixed dividend rate, which makes a preferred stock resemble a bond.

Some preferred stocks have a redemption value. Depending on the terms of redemption, the combination of a fixed dividend rate and a redemption provision may make a redeemable preferred issue indistinguishable from a bond. If the consequences to the corporation of a failure to redeem are sufficiently severe, the preferred issue will appear in the liabilities section of the balance sheet—along with bonds per se.

To the extent that a corporation does not pay out all of its earnings as dividends, it accumulates retained earnings, a component of equity. The use of retained earnings is a common way for profitable corporations to expand their operations. Corporations that have suffered serious losses may show a deficit, which denotes *negative retained earnings*, not negative equity. Partnerships and sole proprietorships differ from corporations because they do not distinguish between retained earnings and paid-in capital, so a deficit

for those types of business is simply negative equity.

The par value of one or more classes of stock, additional paid-in capital, and retained earnings appear in the equity sections of nearly all corporate balance sheets. Many balance sheets also show some adjustments to the total of these core equity items. The three most common adjustments are treasury stock, a deduction related to employee stock ownership plans (ESOPs), and a foreign currency translation adjustment.

Treasury stock is stock that a corporation has issued and subsequently repurchased. The usual reasons for doing so are to administer dividend reinvestment programs and to meet the conversion requests of holders of convertible preferred stock and convertible bonds. Also, some corporations announce stock buy-back programs to bolster investor confidence during stock market declines. Other reasons for share buy-backs include anticipating employee stock options, discouraging takeover attempts, getting ready to go private, and preparing to acquire other companies.

Corporations distinguish between treasury stock and stock that has been authorized but not yet issued because usually it is much easier to resell treasury stock than it is to issue new shares. Treasury stock appears on the balance sheet as a deduction from equity. Absent other adjustments, total shareholders' equity is the amount allocable to outstanding shares (which is the sum of the par value of stock, additional paid-in capital, and retained earnings) less any holdings of treasury stock. When a corporation's ESOP purchases stock to distribute to employees, the corporation accounts for the undistributed stock much like treasury stock, but it makes a separate adjustment to equity. Corporations account for treasury stock and ESOP stock separately because the use of ESOP stock is restricted, whereas a corporation can use treasury stock for any purpose.

When an enterprise's financial statements include foreign subsidiaries on a consolidated basis, the parent enterprise must report a cumulative *foreign currency translation adjustment* in the equity section of the balance sheet. This adjustment is necessary because the accounting rules pertaining to foreign subsidiaries require the parent to translate the equity accounts of the subsidiary at a different exchange rate than that used for the asset and liability accounts. The translation adjustment cumulates the resulting discrepancies over time.

As to *nonprofit* enterprises, donations are a major source of increases in their net assets. It is common for donors to place restrictions on the use of

donations. The line items in the net assets section of a nonprofit enterprise's balance sheet reflect the major categories of restrictions:

WESLEYAN UNIVERSITY
Balance Sheet
June 30, 2006

Fund Balances:	(in thousands)
Unrestricted	
Investment in plant	$124,241
Other unrestricted	393,327
Total unrestricted	$517,568
Temporarily restricted	92,510
Permanently restricted	127,604
Total net assets	$737,682

Adapted from *Annual Financial Report for the Year Ended June 30, 2006*. (Middletown, CT: Wesleyan University, 2006), p. 7.

In accounting terms, fund balances are roughly equivalent to net assets, although the phrase "fund balances" refers to the subtotals for the enterprise's various funds (not shown) as well as to the consolidated total. "Net assets" refers strictly to the consolidated total. Presentation of the net assets section can vary widely from that of the example above, because the particular line items included depend on the activities, especially the fund-raising activities, of the enterprise in question.

III.

ANALYSIS OF THE BALANCE SHEET

A single line item extracted from a financial statement imparts little information. Even a whole financial statement typically contains just 30 numbers, although comparisons among the numbers produce additional quantitative information. A current financial statement becomes more valuable when the reader can compare it to statements from previous accounting periods. The availability of multi-year financial statements for other, comparable enterprises increases the value of each individual statement even further. In general, the usefulness of a financial statement or any other quantitative information hinges on what one analyst has called "…the question at the heart of quantitative thinking: 'Compared to what?'"*

Analysis of a set of financial statements involves three types of comparisons. One concerns the relative sizes of items within a set of statements, termed "vertical analysis." The second is the changes over time in each item and in the relative sizes of items, termed "horizontal analysis." The third is how the key financial measures of an enterprise compare to those of similar enterprises or to industry averages. Each of these three perspectives also makes use of what are called "key ratios," which compare one amount to another.

The sample analysis of the International Paper balance sheet on the next two pages illustrates the use of horizontal, vertical, and ratio analysis.† Readers who are at ease with computers will find spreadsheet software to be well-suited for preparing this type of analysis. The four-year horizontal analysis in the table uses data the company is required to submit to the SEC in annual "10K" reports, as drawn from the on-line *Wall Street Journal*, which provides subscribers with such data on an annual and quarterly ("10Q") basis for hundreds of public companies. (The reports are also available free at www.finance.yahoo.com.) When using several reports to prepare a horizontal analysis, the analyst should be alert for restatements of previous years' results to reflect changes in accounting practices.

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* Tufte, Edward R., *The Visual Display of Quantitative Information* (Cheshire, CT: Graphics Press, 1983), p. 74.

† Having a photocopy of these two pages at hand will make the rest of this chapter easier to follow.

INTERNATIONAL PAPER COMPANY
Sample Analysis of Balance Sheet

(in millions, except as noted, on December 31)				
2003	*2004*	*2005*	*2006*	
				Assets
$ 2,363	$ 2,180	$ 1,641	$ 1,624	Cash and Temporary Investments, at cost
2,765	2,743	2,416	2,704	Accounts and Notes Receivable, net
2,767	2,371	1,932	1,909	Inventories
3,201	5,292	5,770	2,400	Other Current Assets
$11,096	$12,586	$11,759	$ 8,637	*Total Current Assets*
13,260	12,216	9,073	8,993	Plants, Properties, and Equipment, net of depreciation
3,979	2,157	2,127	259	Forestlands
678	655	616	641	Investments
4,793	4,994	3,621	2,929	Goodwill
1,719	1,609	1,575	2,575	Deferred Charges and Other Assets
$35,525	**$34,217**	**$28,771**	**$24,034**	**Total Assets**
				Liabilities and Common Shareholders' Equity
$ 2,087	$ 222	$ 1,178	$ 692	Notes Payable and Current Maturities of Long-Term Debt
2,188	2,026	1,771	1,907	Accounts Payable
445	425	351	466	Accrued Payroll and Benefits
2,550	4,661	1,655	1,576	Other Accrued Liabilities
$ 7,270	$ 7,334	$ 4,955	$ 4,641	*Total Current Liabilities*
13,450	13,632	11,019	6,531	Long-Term Debt
1,387	1,118	684	2,233	Deferred Income Taxes
5,181	3,879	3,762	2,666	Minority Interest and Other Liabilities
				Commitments and Contingent Liabilities
$27,288	$25,963	$20,420	$16,071	*Total Liabilities*
$ 485	$ 487	$ 491	$ 493	Common Stock, $1 par value
6,500	6,562	6,627	6,735	Paid-in Capital
1,392	1,205	1,237	2,173	Retained Earnings
(140)		(4)	(1,438)	Common Stock Held in Treasury, at cost
$ 8,237	$ 8,254	$ 8,351	$ 7,963	*Total Common Shareholders' Equity*
$35,525	**$34,217**	**$28,771**	**$24,034**	**Total Liabilities and Common Shareholders' Equity**
				Addenda
$ 3,826	$ 5,252	$ 6,804	$ 3,996	Working Capital (current assets less current liabilities)
5,128	4,923	4,057	4,328	Quick Assets (cash, temporary investments, and receivables)
20,018	18,629	15,465	11,430	Long-Term Liabilities (total liabilities less current liabilities)
20,757	20,474	16,482	15,464	Market Value of Equity
485,162	487,495	490,501	493,340	Common Shares Issued (thousands)
481,494	487,479	490,389	453,496	Common Shares Outstanding (thousands)
$16.98	$16.93	$17.03	$16.14	Book Value per Common Share Issued
43.11	42.00	33.61	34.10	Market Value per Common Share Outstanding
1.53	1.72	2.37	1.86	Current Ratio
0.71	0.67	0.82	0.93	Quick Assets Ratio
0.77	0.76	0.71	0.67	Debt Ratio
3.31	3.15	2.45	2.02	Debt-Equity Ratio
0.71	0.69	0.65	0.59	Capitalization Ratio
2.43	2.26	1.85	1.44	Ratio of Long-Term Liabilities to Equity

Adapted in part from *International Paper Annual Report for 2006* (Memphis, TN: International Paper, 2007), p. 50. The notes on pp. 54-88 of the *Annual Report* are an integral part of the original statement.

As fractions of total assets (common-size statements)*				*As percentages of 2003 levels (index numbers or trend percentages)*			*Annual percent changes*		
2003	*2004*	*2005*	*2006*	*2004*	*2005*	*2006*	*2004*	*2005*	*2006*
0.07	0.06	0.06	0.07	92%	69%	69%	-7.7%	-24.7%	-1.0%
0.08	0.08	0.08	0.11	99	87	98	-0.8	-11.9	11.9
0.08	0.07	0.07	0.08	86	70	69	-14.3	-18.5	-1.2
0.09	0.15	0.20	0.10	165	180	75	65.3	9.0	-58.4
0.31	0.37	0.41	0.36	113	106	78	13.4	-6.6	-26.5
0.37	0.36	0.32	0.37	92	68	68	-7.9	-25.7	-0.9
0.11	0.06	0.07	0.01	54	53	7	-45.8	-1.4	-87.8
0.02	0.02	0.02	0.03	97	91	95	-3.4	-6.0	4.1
0.13	0.15	0.13	0.12	104	76	61	4.2	-27.5	-19.1
0.05	0.05	0.05	0.11	94	92	150	-6.4	-2.1	63.5
1.00	**1.00**	**1.00**	**1.00**	96	81	68	-3.7	-15.9	-16.5
0.06	0.01	0.04	0.03	11	56	33	-89.4	430.6	-41.3
0.06	0.06	0.06	0.08	93	81	87	-7.4	-12.6	7.7
0.01	0.01	0.01	0.02	96	79	105	-4.5	-17.4	32.8
0.07	0.14	0.06	0.07	183	65	62	82.8	-64.5	-4.8
0.20	0.21	0.17	0.19	101	68	64	0.9	-32.4	-6.3
0.38	0.40	0.38	0.27	101	82	49	1.4	-19.2	-40.7
0.04	0.03	0.02	0.09	81	49	161	-19.4	-38.8	226.5
0.04	0.03	0.02	0.09	75	73	51	-25.1	-3.0	-29.1
0.77	0.76	0.71	0.67	95	75	59	-4.9	-21.3	-21.3
0.01	0.01	0.02	0.02	100	101	102	0.4	0.8	0.4
0.18	0.19	0.23	0.28	101	102	104	1.0	1.0	1.6
0.04	0.04	0.04	0.09	87	89	156	-13.4	2.7	75.7
(0.00)	0.00	(0.00)	(0.06)		3	1,027	-100.0		35,850.0
0.23	0.24	0.29	0.33	100	101	97	0.2	1.2	-4.6
1.00	**1.00**	**1.00**	**1.00**	96	81	68	-3.7	-15.9	-16.5
0.11	0.15	0.24	0.17	137	178	104	37.3	29.6	-41.3
0.14	0.14	0.14	0.18	96	79	84	-4.0	-17.6	6.7
0.56	0.54	0.54	0.48	93	77	57	-6.9	-17.0	-26.1
0.58	0.60	0.57	0.64	99	79	75	-1.4	-19.5	-6.2

current ratio = current assets / current liabilities

quick assets ratio = quick assets / current liabilities

debt ratio = total liabilities / total assets

debt-equity ratio = total liabilities / equity

capitalization ratio = long-term liabilities / long-term liabilities + equity

*Detail items may not add up to totals because of rounding error.

Vertical analysis requires the analyst to compute common-size statements, which show the proportions of each line item within a statement. A common-size balance sheet expresses *each line item as a decimal fraction of total assets*. In the sample analysis, the first four columns on the right-hand page illustrate this technique. The example reveals that current assets represented 36 percent of the total in 2006. Within this category, receivables account for 11 percent of the total, and inventories for 8 percent. However, the preponderance of assets are not current but fixed. At 37 percent of the total, for example, the single line item for plants, properties, and equipment exceeds the total for all current assets combined.

A horizontal or year-to-year analysis of the common-size statements reveals which items show changes in importance over time. Thus the fixed asset forestlands fell from 11 percent of total assets in 2003 to a mere one percent in 2006. With regard to liabilities, long-term debt loomed large at the beginning of the period, then fell sharply from .38 in 2005 to .27 in 2006. Another shift evident here is in shareholders' equity, which rose as a share of assets from .23 to .33 between 2003 and 2006.

A shortcoming of common-size statements is that they can obscure significant trends in line items, especially those items that are small fractions of the benchmark quantity. An example here is the liability, notes payable and current maturities of long-term debt. The common-size variation is from .06 to .01 to .04 to .03. Because these decimals are small, it is easy to overlook the high degree of variability from year to year.

For this reason a useful second tool of horizontal analysis is trend percentages, the middle set of columns on the right-hand page. Also called index numbers, trend percentages express each line item *as a percentage of its amount in a base year* (2003 in this example). There is no column of trend percentages for 2003 because every entry would be 100. Now the variability in notes payable may be easier to recognize, as its 2004 value plummets to only 11 percent of its 2003 value, then rebounds to 56 percent in 2005, then falls back to 33 percent in 2006.

Similarly, it may now become easier to see that not only forestlands, but also plants, properties, and equipment fell sharply in value over the four-year interval. The latter category was only about two-thirds (68 percent) of its 2003 value by 2006. Total assets fell at the same pace, to 68 percent by 2006. Among liabilities, long-term debt fell even faster, to 49 percent of its initial value by 2006. For this and other reasons, total liabilities in

2006 were only 59 percent of their 2003 values. (As to shareholders' equity, we can see that it hardly changed over the period, down slightly in 2006 to 97 percent of its initial value, meaning that the rise noted above in shareholders' equity relative to assets was almost entirely a result of a fall in the value of assets.)

Along with index numbers, another primary tool of horizontal analysis is annual *percentage changes*, the rightmost set of columns in the sample analysis. Here, for example, is the most direct indicator of the variability of the current liability cited earlier: notes payable and current maturities of long-term debt. Between 2003 and 2004, this liability fell by 89 percent. Between 2004 and 2005, it jumped by 431 percent. Then the value for 2005 was cut by 41 percent over the next year.

On the other hand, percentage changes also have their drawbacks. Unlike common-size statements, which can understate changes in some items, percent changes suffer from the drawback of exaggerating changes from a small initial value. An extreme example in the table concerns treasury stock, the amount of its own stock bought back and held by the company. As can be seen in the absolute numbers on the leftmost columns, treasury stock held by the company at the end of each year went from $140 million to zero between 2003 and 2004, meaning that it was distributed to employees for stock-option bonuses or the like or simply resold for the prevailing stock price. The next year saw a small repurchase of $4 million, and the year after that (2006) a large one, for $1.4 billion. Because of the tiny initial (2005) amount, this latter increase registered as an astronomical (but meaningless) percentage increase in the last column of the table.

In any case, combining trend index numbers and annual percentage changes can help put sharp fluctuations in perspective, given a reasonable choice of base year. Compare these two methods of measuring the already noted changes in International Paper's forestlands:

	2003	*2004*	*2005*	*2006*
Trend percentages	100	54	53	7
Annual percent changes	--	-45.8	-1.4	-87.8

The choice of the base year is important. Recession years often are poor base years because some items fall abnormally low, exaggerating subsequent percent changes. Over this interval, however, 2003 represents a reasonable

base year, early in an economic expansion that began in 2001 or 2002 and lasted through 2006 and beyond.

What stands out here is that in an expanding economy, International Paper reduced its ownership of forest lands to a mere 7 percent of its 2003 holdings by the end of 2006. The footnotes to the *Annual Report* suggest that this sharp reduction in timber holdings may reflect the company's joint agreements with companies (especially in Russia and Brazil) that own forestlands but require assistance in processing and manufacturing timber. Another possibility is that operating leases are being used as an alternative to ownership. In theory, operating leases are short-term rentals and capital leases are a way of financing ownership. In practice, however, non-cancellable operating leases can be a form of off-balance-sheet financing, which distorts the traditional measures of leverage and profitability.

Whatever the precise strategy, it is clear that International Paper tried in general to increase its profitability by shrinking the scale of the company's operations in these years. Total assets went down from $35.5 billion to $24 billion, and total liabilities fell by a comparable $11 billion. The company thus scaled down to only about two-thirds of its 2003 size by 2006. Though not listed in the accounts, a parallel indicator is the company's employment, which fell from some 90,000 in 2003 to about 52,000 by the end of 2007.

Ratio Analysis

Ratio analysis is the name applied to comparisons that have achieved some popularity as guides to an enterprise's financial condition. Ratios computed solely from balance sheet data are among the oldest such comparisons, because the balance sheet has long been the most readily available financial disclosure. Because these ratios reflect the information requirements and disclosure practices of an earlier era, the ongoing evolution of business and accounting practices is reducing the relevance of many traditional measures. People still discuss balance sheet ratios, however, so we present some commonly encountered ratios below.

Like the dollar values in a financial statement, ratios invite the question, "Compared to what?" An enterprise's financial ratios afford two types of comparison: the comparison of each ratio to its previous values to determine a trend, and comparison of ratios to those of comparable enterprises and to industry averages. The sample analysis of International Paper's balance sheets includes 4 years of data for each ratio to reveal any recent trends.

The sample analysis does not include data for peer and industry comparisons. These may be found in publications updated annually by Dun & Bradstreet or Standard & Poor's. A recent book on the subject is Steven M. Bragg, *Business Ratios and Formulas* (Indianapolis, IN: Wiley, 2006). Among many on-line sources is MSN Money's site, www.moneycentral.msn.com, which lists company and industry-wide comparisons, including selected company ratios for each of the last 10 years.

The current ratio is perhaps the most widely reported balance-sheet ratio:

(1) current ratio = current assets/current liabilities

This is a measure of an enterprise's short-term solvency. A higher current ratio indicates a greater likelihood that an enterprise can meet its obligations promptly. Given a reasonable assurance of solvency, a high or increasing current ratio is not an improvement in an enterprise's financial position, because it suggests an inefficient use of current assets. A 2:1 ratio once had an almost religious significance as the benchmark for a sound current position, but as is the case with any ratio, a useful interpretation requires comparisons with past results and with the ratios of comparable enterprises.

A similar approach to gauging solvency with balance sheet data is to compute working capital:

(2) working capital = current assets – current liabilities

Unlike the current ratio, this measure is dollar denominated, so it is not useful for comparisons among enterprises. The trend of working capital and its size as a fraction of total assets complement the information that the current ratio provides.

As discussed on page 14**,** the assets that a balance sheet advertises as current are not usually all of an enterprise's current assets, nor are they entirely current. Similarly, current liabilities and liabilities alleged to be current are not always identical. These misleading classifications impair the usefulness of the current ratio and of working capital as indicators of solvency. One method of coping with this problem is to take a conservative approach to measuring the assets available to meet short-term obligations.

(3) quick assets = cash and temporary investments + receivables

(4) quick assets ratio = quick assets/current liabilities

The use of quick assets and the quick assets ratio, also called the "acid-test" ratio, recognizes that inventories and other current assets take considerable time and effort to convert to cash, so that they usually are not available to pay debts due immediately. This distinction is based on the quality of assets, which is a combination of liquidity and the likelihood that recorded values will be realized in a liquidation.

The recognition of differences in the quality of assets addresses only a portion of the problem with current classifications, however. It ignores long-term receivables and uncollectible accounts, the current portion of fixed assets, readily saleable inventory, and the maturity distribution of current liabilities. The basic difficulty in using the balance sheet to assess solvency is that it does not provide all of the relevant information. Solvency is mainly a question of cash *flows*. When doubts about the adequacy of cash *balances* arise, it probably is too late for corrective action. For further discussion of solvency analysis, see Chapter V on receivables and inventory turnover and Chapter VII on cash flows.

The best that can be said for the balance sheet solvency measures is that if they are unfavorable, they alert the analyst to the need for careful scrutiny of more relevant measures.

$3,826	$5,252	$6,804	$3,996	Working Capital (current assets less current liabilities)
1.53	1.72	2.37	1.86	Current Ratio
0.71	0.67	0.82	0.93	Quick Assets Ratio

While International Paper's ratios generally improved over the four-year interval, neither met the commonly cited rules-of-thumb of 2 for the current ratio and 1.5 for the quick assets ratio in 2006. Pending a comparison with the comparable ratios for IP's competitors, these numbers would seem to raise a red flag over the company's ability to meet its short-term obligations. On the other hand, a strong line of credit with a bank could mean that such ratios are manageable.

Capital Structure

The balance sheet is better suited to analyzing a business's capital struc-

ture; it is designed to reveal that structure. A basic analysis of a business's capital structure involves a comparison of the relative proportions of the elements of equity and of long-term debt within the balance sheet, with reference to recent trends and industry averages. Many analysts use this approach as a starting point, computing the following ratios:

(5) $$\text{debt ratio} = \text{total liabilities/total assets}$$

(6) $$\text{debt-equity ratio} = \text{total liabilities/equity}$$

(7) $$\text{capitalization ratio} = \frac{\text{long-term liabilities}}{\text{long-term liabilities + equity}}$$

One additional ratio, long-term liabilities to equity, is self-explanatory. Some analysts prefer to compute these ratios from the stockholder's point of view, by substituting equity for total liabilities in Equation (5) and for long-term liabilities in the numerator of Equation (7), and by inverting Equation (6) and the ratio of long-term liabilities to equity.

Whatever the calculations, analysts use these ratios to answer this question: "How are the outstanding claims on the assets of the business apportioned among creditors, especially long-term creditors, and owners?" In International Paper's case, leverage (as provided by long-term borrowing) fell sharply from 2004 to 2006.

0.77	0.76	0.71	0.67	Debt Ratio
3.31	3.15	2.45	2.02	Debt-Equity Ratio

So did the capitalization ratio and the ratio of long-term debt to equity.

0.71	0.69	0.65	0.59	Capitalization Ratio
2.43	2.26	1.85	1.44	Ratio of Long-Term Liabilities to Equity

Equations (5), (6), and (7) convey a false air of precision. For clarity, we have used "debt" as a synonym for total liabilities. In practice, "debt" is used to describe a variety of quantities. Long-term liabilities may or may not include the current portion of long-term debt, depending on the analyst. We have excluded the current portion. In addition, the equity figure used in ratio analysis may differ markedly from reported total shareholders' equity. Possible additions to the reported total include obligations not likely to be

paid, such as minority interest and a portion of deferred income taxes, and unrealized gains on assets, such as the excess of FIFO inventory valuations over LIFO valuations and the excess of the market value of investments over cost.

A common way for companies to reduce their reported leverage is the "50 percent solution," a method of *off-balance-sheet* financing. Fifty percent is the threshold ownership interest at which consolidation requirements take effect. By holding just under 50 percent of a heavily indebted affiliate, a company can report its holding as an investment while still exercising effective control, thereby avoiding the disclosure of a substantial amount of leverage.

Indeed, one of the salient features of the subprime mortgage crisis of late 2007 was the discovery that some of the world's largest banks had created "structured investment vehicles" (SIVs) for precisely this purpose. Neither analysts nor regulators had enough pertinent information to measure the degree of risk the "creator" banks such as Citigroup continued to bear for the securities their correspondent SIVs owned. As Chapter IX notes, the result was that the banks' balance sheets understated the amount of risk the banks had taken on.

In any case, an alternative approach to the analysis of a publicly traded corporation's capital structure is to compare the market value of equity to the value that the balance sheet reports. The advantage of this approach, especially for the inexperienced analyst, is that it relies on the collective judgment of thousands of self-interested marketplace participants. The comparison can be on an aggregate basis or on a per-share basis. The relevant equations are:

(8) book value per common share = equity/common shares issued
(9) market value of equity = stock price x common shares outstanding

In Equation (8), equity is common shareholders' equity (the par value of common stock, plus paid-in capital, plus retained earnings net of the liquidation value of preferred stock, plus the foreign currency translation adjustment, if present). If there are substantial amounts of warrants, options, stock purchase rights, or convertible senior securities outstanding, the analyst should adjust for the potential dilution from these sources. There usually is no adjustment for treasury stock or ESOP stock in this calculation, so the

per-share measure is book value per common share issued. If the corporation holds substantial amounts of treasury stock, it may be appropriate to compute book value per common share outstanding, in order to compare per-share market price and book value.

The comparison of book value to market value indicates the degree to which asset values according to the various accounting rules differ from their values as appraised in the marketplace. But the use of market valuations has two important disadvantages. First, a corporation's equity has no fixed value; its price can change by the minute. Second, market values reflect the availability and scarcity of funds as much as they do the values of corporate net assets. During periods of speculation, investors' sole valuation principle tends to be the expectation of what future purchasers, perhaps flush with cash, will be willing to pay for a corporation's stock.

INTERNATIONAL PAPER COMPANY
Consolidated Statement of Earnings (Multiple Step)
For the Year Ended December 31, 2006

	(in millions, except per share amounts)	
Net sales		$21,995
Cost of Products Sold		16,248
Gross Profit on Sales		$ 5,747
Operating Expenses:		
Depreciation and amortization	$1,158	
Distribution expenses	1,075	
Selling and administrative expenses	1,848	
Taxes other than payroll and income taxes	215	
Restructuring charge, sale of businesses, other	2,530	
Sale of forestlands	(4,788)	
Total Operating Expenses, excluding income taxes		2,038
Earnings from Operations, before income taxes		$ 3,709
Interest Expense, net		521
Earnings before Income Taxes, Minority Interest, and Extraordinary Item for Discontinued Operations		$ 3,188
Provision for Income Taxes		1,889
Minority Interest		(17)
Earnings from Continuing Operations		$ 1,282
Discontinued Operations		(232)
Net Earnings		**$ 1,050**
Weighted Average Common Shares Outstanding		476
Earnings per Common Share:		
Earnings before discontinued operations		$2.69
Effect on earnings per share of extraordinary item		(0.49)
Earnings per Common Share		**$ 2.21**

This multiple-step statement and the single-step statement on page 36 have been adapted from *International Paper Annual Report for 2006* (Memphis, TN: International Paper Company, 2007), p. 49. The notes on pp. 54-88 of the *Annual Report* are an integral part of the original statement.

IV.

THE INCOME STATEMENT

Annual income twenty pounds, annual expenditure nineteen six, result happiness.
Annual income twenty pounds, annual expenditure twenty pounds ought and six, result misery.

– Wilkins Micawber (Dickens)

AN income statement reconciles an enterprise's revenues, expenses, gains, and losses for an accounting period, and states the total of those items. The total goes by many names, including earnings, net income, comprehensive income, change in fund balances, and change in net assets. An income statement accounts for the changes in an enterprise's net assets that do not result from transactions with owners or donors between successive balance sheet dates. Synonyms for income statement include statement of operations, results of operations, statement of profit and loss, and statement of earnings, but this list is not exhaustive. The mark of the Wall Streeter is her use of the abbreviation "P&L" for "statement of profit and loss."

Income statements come in two formats: single step and multiple step. A single-step statement calculates earnings from operations by subtracting total costs and expenses from total revenues. An example appears on page 34. A multiple-step statement first determines gross profit on sales (step 1) and then subtracts operating expenses (step 2) to arrive at operating earnings. Only merchandising enterprises (manufacturers, wholesalers, and retailers) use the multiple-step format, which appears at left, because gross profit is not a useful measure for service enterprises — all of their sales are gross profit. Corporate income statements include an additional feature, the computation of earnings per share before and after adjustments for extraordinary items. A sample calculation of earnings per share appears at left.

Accountants classify earnings by source, just as they distinguish between earnings as a whole and funds provided by owners or donors. The cash receipts that an enterprise's principal activities generate are revenues. The cash payments arising from those activities are expenses. The difference between revenue and expenses is earnings from operations. Gains and losses

are the cash flows resulting from transactions and events that are incidental to, or simply not among, an enterprise's principal activities. Gains net of losses constitute non-operating earnings. The sum of non-operating and operating earnings is net earnings, often called net income.

That said, the items labeled revenue, expenses, gains, and losses in financial statements do not always conform to this classification, which is drawn from the FASB's "conceptual framework." Income statements often label negative operating earnings as "operating loss," for example, even though the negative earnings stem from an enterprise's principal activities. In addition, income statements label net interest receipts or payments and certain other non-operating items as revenues and expenses.

Accrual Accounting

Revenues, expenses, gains, and losses all consist of cash flows (or

INTERNATIONAL PAPER COMPANY
Consolidated Statement of Earnings (Single Step)
For the Year Ended December 31, 2006

		(in millions)
Net sales		$21,995
Costs and Expenses:		
Cost of products sold	$16,248	
Depreciation and amortization	1,158	
Distribution expenses	1,075	
Selling and administrative expenses	1,848	
Taxes other than payroll and income taxes	215	
Restructuring charge, sale of businesses, other	2,530	
Sale of forestlands	(4,788)	
Total Costs and Expenses		$18,286
Earnings before Interest, Income Taxes, Minority Interest, and Extraordinary Item for Discontinued Operations		3,709
Interest Expense, net		521
Earnings before Income Taxes, Minority Interest, and Extraordinary Item for Discontinued Operations		$ 3,188
Provision for Income Taxes		1,889
Minority Interest		(17)
Earnings from Continuing Operations		$ 1,282
Discontinued Operations		(232)
Net Earnings		**$ 1,050**

equivalent transactions, in which no cash changes hands, that affect asset and liability accounts), but the cash flows do not always coincide with the recognition of these four elements of earnings. Enterprises may record expenses for the current period that reflect cash payments made many years ago. They may record losses to account for estimated impairments of asset values during the current period. Such losses reflect prospective reductions in future cash flows. Similarly, cash receipts may precede or follow revenue-generating sales and services.

The reason for these differences in timing is that cash flows can be a poor short-term indicator of an enterprise's performance. A steep decline in cash flows from operations from the fourth quarter to first quarter may not be cause for concern if the business reporting the decline is a department store or a toy store. Contractors on a long-term construction project might receive a large down payment, no cash receipts for more than a year, and then a large final payment. Not all enterprises have irregular operating cash flows — such flows might be a crucial indicator of, say, a supermarket's month-to-month performance — but even these enterprises incur gains and losses that affect performance but are incidental to regular operations.

Short-term results provide an enterprise's managers with information that is crucial for successful operations. The imperfections of cash flow as a measure of short-term results led long ago to the development of accrual accounting, which consists of the generally accepted accounting principles used to assign portions of cash flows to the revenues, expenses, gains, and losses of more than one accounting period. Earnings, the end product of accrual accounting, have proven to be a useful short-term performance measure for managers and other interested parties.

The two key principles of accrual accounting are the *realization principle* and the *matching principle*. Under the realization principle, enterprises record revenues when they deliver goods or provide services. Under the matching principle, enterprises attempt to allocate expenses among all periods in which those expenses contribute to revenues. Matching is hardly a science — it involves a considerable reliance on estimates, predictions, and arbitrary judgments. Taken together, the two principles require enterprises to compute operating earnings for a period as the revenue from goods and services provided during the period, net of the expenses directly attributable to producing that revenue, and net of a systematic allocation of expenses not directly associated with the volume of revenue for any one period.

There are two techniques for applying these principles: *accrual* and *deferral*. Accrual is the process of recognizing future cash flows as revenues or expenses in the current period. Accrued expenses become liabilities until paid, and accrued revenues become assets until received. Accounts receivable and payable are examples of accrued assets and liabilities.

Deferral is the opposite of accrual; it is the process of assigning current cash flows to the revenues and expenses of future periods. Deferred expenses become assets until charged against earnings, and deferred revenues become liabilities until earned. In the case of cash outlays for acquiring equipment and other long-lived assets, an enterprise charges portions of each outlay to expenses over the estimated useful lives of the assets, thereby deferring the recognition of the initial outlays as expenses. In the case of cash receipts for goods and services to be provided for several periods, such as subscriptions, an enterprise records the receipts as liabilities and credits a portion of each receipt to revenue as it provides those goods and services.

The income statement reveals the principles and techniques of accrual accounting at work:

Net Sales	$21,995
Cost of Products Sold	16,248
Gross Profit on Sales	$ 5,747

The gross profit calculation involves the use of the realization principle to determine net sales, and the matching principle to determine the cost of products sold. Like any other merchandising business, International Paper defers the recognition of cash outlays for production and purchasing costs by recording those outlays as assets, namely inventories. As the company makes sales, it earns the revenues that result from its inventory outlays, so it must charge matching expenses against those revenues. The company does so by transferring the portion of inventories attributable to sales to an expense account, cost of products sold.

The difference between net sales and cost of products sold is gross profit, rather than net profit (earnings), because the company must match many other expenses against sales revenues:

Gross Profit on Sales		$ 5,747
Operating Expenses:		
Depreciation and amortization	$1,158	
Distribution expenses	1,075	
Selling and administrative expenses	1,848	
Taxes other than payroll and income taxes	215	
Restructuring charge	2,530	
Sale of forestlands	(4,788)	
Total Operating Expenses, excluding income taxes		2,038
Earnings from Operations, before income taxes		$ 3,709

Most of the amounts of distribution expenses and selling and administrative expenses are accruals. Until paid, these amounts appear on the balance sheet as liabilities, including accounts payable and accrued payroll and benefits. In contrast, depreciation and amortization are important examples of deferral. Using these techniques, the company charges a portion of cash outlays for fixed assets against revenue for the period.

Because of the difficulties of determining how much any particular long-lived asset contributes to the revenue of each period, an enterprise usually determines depreciation and amortization according to arbitrary formulas based on the volume of production or the passage of time in relation to the asset's expected useful life. The notes to International Paper's financial statements disclose the particular types of formulas that the company uses. Depreciation and amortization do not include *depletion* of forestlands, because that expense can be matched against revenue as part of the cost of products sold.

The income statements of most enterprises list interest revenue and expense, or net interest, separately from the operating items. The reason for this classification is that interest expense accrues from financing activities and interest revenue accrues from investing activities. With few exceptions, only financial companies count financing and investing as operating activities. For most other enterprises, those activities are incidental to operations. From the creditor's point of view, the advantage of this separate listing is that the margin by which an enterprise's current operations fund interest payments is readily apparent.

A corporation's provision for income taxes is a combination of accruals and deferrals. The accruals reflect the usual practice of paying taxes in the

current period on taxable income earned in the previous period. The deferrals reflect the myriad differences between GAAP earnings and taxable income. Profitable corporations normally report a positive deferral component of the provision for income taxes and a growing net deferred tax liability. Because of the peculiarities of tax allocation, deferred tax liabilities and deferred tax assets both appear on corporate balance sheets (the assets often are lumped together with other current assets). Corporate income statements show just the net provision for income taxes. However, the notes to the financial statements usually disclose various components of the provision.

Technically, the portion of a corporation's provision for income taxes that is attributable to operating items is an operating expense and it should appear in the list of operating expenses, so that the income statement presents earnings from operations net of tax. In practice, corporate income statements present income taxes among the non-operating items and they do not disclose the amount of taxes attributable to operating items. The provision for income taxes includes the tax consequences of items that appear below the provision on the income statement. The income statement lists these line items net of tax, but it includes disclosures of their tax consequences.

Though only one appears here, three categories of line items can follow the provision for income taxes on the income statement. The one featured here is *earnings from discontinued operations*. Discontinued operations include entire business lines or subsidiaries that an enterprise has sold or liquidated. (By contrast, plant closings and other reorganizations are "unusual items," not discontinued operations. Unusual items are components of operating earnings, which often are called earnings from continuing operations.) International Paper took a productivity improvement charge for discontinued operations in 2006.

Discontinued Operations (232)

When an enterprise decides to discontinue operations, it separates the earnings of those operations on all income statements prepared after the decision. Comparative income statements also separate earnings of the discontinued operations in previous periods. The income statement for the period in which operations end, which may lag considerably the decision to discontinue, shows gains or losses on the disposal of the operations plus any earnings for the final period.

A second possible category refers to extraordinary items, meaning items that are material, unusual, and not expected to recur in the foreseeable future. Examples might be losses from natural disasters, wars, and riots, and the effects of government expropriations and condemnations, major changes in law, and major changes in financial conditions.

A third is the cumulative effect of changes in accounting principles. When an enterprise changes the accounting principles that it uses, it calculates the difference the change would have made in the earnings of past accounting periods and charges the cumulative sum of those changes against current-period earnings. The most common reason for changing accounting principles is to comply with a new *Statement of Financial Accounting Standards* (SFAS). Other reasons include voluntary changes, such as choosing a new inventory valuation method or depreciation method, and changes in GAAP set forth by organizations other than the FASB, such as the SEC or the AICPA.

Net earnings are what remains after a business has deducted earnings from these three categories—discontinued operations, extraordinary items, and the effects of accounting changes—from after-tax earnings. This is the so-called "bottom line." It is the amount available to those with an equity interest in the business. A business attracts equity investment with the prospect of positive and growing earnings. Businesses that incur persistent net losses eventually go bankrupt. Thus the amount and trend of net earnings are critical evidence of management's ability to maintain a business, to fund growth internally, and to provide adequate returns to investors.

Earnings per Share

It is a commonplace to call net earnings the bottom line, but corporate income statements include some important lines below net earnings. These lines present earnings per common share, often called earnings per share.

Net Earnings	**$1,050**
Weighted Average Common Shares Outstanding	476
Earnings per Common Share:	
Earnings before allowance for discontinued operations	$2.69
Effect of allowance for discontinued operations	(0.49)
Earnings per Common Share	**$2.21**

When there are preferred shares outstanding, the earnings per share presentation includes an additional step, the computation of earnings applicable to common shares, which is the difference between net earnings and preferred dividend requirements.

From the investor's point of view, earnings per share is a more useful figure than net earnings because it measures the investor's *pro rata* share of earnings, which varies with the number of shares outstanding. Professional analysts compute the present value of estimated future per-share earnings to determine whether a corporation's shares warrant a buy, hold, or sell rating at current market prices. The rationale for this calculation is that if the present value of a corporation's earnings per share exceeds the current market price, the market price is a bargain and the shares warrant a buy rating. This process is, of course, only as good as the earnings estimates that go into it.

Earnings per share is a more complicated measure than book value per share because the number of shares outstanding varies during most accounting periods, whereas the number of issued shares at the end of any accounting period is fixed. Corporations that have relatively simple capital structures divide earnings for an accounting period by the weighted average number of shares outstanding during the period to compute earnings per share. The use of the weighted average adjusts for variations in the number of outstanding shares. An example of a simple capital structure is a corporation that has issued nonconvertible bonds, nonconvertible preferred shares, and one class of common shares.

Relatively complex capital structures can include convertible preferred issues, convertible bonds, warrants, options, and a variety of more exotic securities. When the holders of these types of securities convert them to common shares for a consideration that is below the market price, the conversions dilute the interests of current holders of common shares. Participation certificates and multiple classes of common stock also complicate capital structures because of the sharing of earnings and dividend participation that these arrangements require.

Widespread failure to recognize these forms of dilution of earnings participation fueled the merger craze of the late 1960s, as growing conglomerates issued convertible securities to make acquisitions. These transactions amounted to deferred issuances of common shares to buy the current earnings of acquisitions. Failure to account for dilution from future conversions

allowed the acquiring corporations to report growing earnings per share.

This type of distortion led to the requirement that corporations for which earnings per common share, as described above, is subject to a reduction of more than three percent due to dilution must present primary and fully diluted earnings per share instead. These two measures account for the effects of dilution using slightly different assumptions about dilutive transactions. Knowledge of the complex calculations involved is best left to the accountants; it suffices to understand that fully diluted earnings per share is the more conservative measure, and that shareholders of corporations that do not disclose the effects of dilution in audited financial statements risk no more than a three percent dilution of their interests.

Statements of Equity and Net Assets

The income statement does not provide a complete accounting of the changes in an enterprise's financial position. It does not account for the disposition of net earnings or for the enterprise's transactions with owners or donors. The statement that accounts for these items depends on the enterprise's form of organization: for corporations, it is the statement of shareholders' equity; for partnerships, the statement of partners' equity; for sole proprietorships, the statement of owner's equity; for nonprofit enterprises, the statement of changes in net assets, commonly called the statement of changes in fund balances.

Some corporations present just a statement of retained earnings, which is less comprehensive than the statement of shareholders' equity. Whatever its name, the statement is with few exceptions just a bookkeeping document, of little significance to the analyst.

A statement of owner's, partners', or shareholders' equity accounts for the changes in a business's equity position during an accounting period. Sources of increases in equity include net earnings if positive, additional investments by shareholders or principals, and, rarely, donations. Additional investments by a corporation's shareholders can include indirect forms of investment, such as sales of treasury stock, conversions of senior securities, and distributions of ESOP stock. Similarly, the sources of increase in the net assets of a nonprofit enterprise include donations and positive net earnings. Net losses and payments to investors reduce a business's equity, and net losses reduce a nonprofit enterprise's net assets. Indirect payments to a corporation's investors, such as purchases of treasury stock and ESOP

stock, can reduce equity. Foreign currency translation adjustments can produce both reductions and increases in a corporation's equity.

One important difference between a statement of owner's or partners' equity and a statement of shareholders' equity is that payments to principals are called drawings rather than dividends. Another important difference is that net earnings accumulate in the principals' capital accounts rather than in retained earnings. Statements of partners' equity can be highly complex, depending on the provisions of the partnership agreement.

Although daunting in appearance, as the example at right shows, a corporation's statement of shareholders' equity usually is straightforward. The pertinent items for the analyst and for the investor are the per-share dividend (often reported on the income statement) and the dividend payout ratio. As listed in the first footnote to the table, this latter is the ratio of total common-stock dividend payments to net earnings applicable to common shares. A ratio between 0 and 1 indicates an increase in retained earnings and suggests the degree to which the corporation can finance expanded operations without issuing stock or borrowing. A ratio less than 0 indicates that the corporation is using retained earnings to cover losses and pay dividends. A ratio greater than 1 indicates the use of retained earnings to supplement net earnings as a source of dividends.

A nonprofit enterprise's statement of changes in net assets usually follows the matrix format of the statement of shareholders' equity. Just as the shareholders' equity statement discloses the changes of each element of equity stemming from each type of transaction, so the change in net assets statement shows the effect of each transaction on the net assets of each fund. The net assets of each fund commonly are called fund balances. An important difference between nonprofit accounting and business accounting is that some nonprofit enterprises present a statement of current-fund operations rather than a consolidated income statement. These enterprises incorporate the consolidated income statement into the statement of changes in net assets.

INTERNATIONAL PAPER

Consolidated Statement of Common Shareholders' Equity

(in millions, except share amounts in thousands and ratios)	Common Stock Issued Shares	Common Stock Issued Amount	Paid-In Capital*	Retained Earnings	Accumulated Other Comprehensive Income (Loss)**	Treasury Stock Shares	Treasury Stock Amount	Total Common Shareholders' Equity
Balance, January 1, 2004	485,162	$485	$6,500	$3,082	($1,690)	3,668	$140	$8,237
Issuance of stock for various plans	2,333	2	62			(3,652)	(140)	204
Cash dividends—common stock ($1 per share)				(485)				(485)
Net loss				(35)				(35)
Adjustments for pensions, foreign currency translation, and hedging operations					333			333
Total comprehensive income								298
Balance, December 31, 2004	487,495	$487	$6,562	$2,562	($1,357)	16		$8,254
Issuance of stock for various plans	3,006	4	65			96	4	65
Cash dividends—common stock ($1 per share)				(490)				(490)
Net earnings				1,100				1,100
Adjustments					(578)			(578)
Total comprehensive income								522
Balance, December 31, 2005	490,501	$491	$6,627	$3,172	($1,935)	112	$4	$8,351
Issuance of stock for various plans	2,839	2	108			46	1	109
Repurchase of stock						39,686	1,433	(1,433)
Cash dividends—common stock ($1 per share)				(485)				(485)
Net earnings				1,050				1,050
Adjustments					721			721
Total comprehensive income								1,771
Effect of adoption of SFAS No. 158 (less tax of $309)					(350)			(350)
Balance, December 31, 2006	**493,340**	**$493**	**$6,735**	**$3,737**	**($1,564)**	**39,844**	**$1,438**	**$7,963**

*The dividend payout ratio (cash dividends divided by total comprehensive income) was 1.63 for 2004, 0.94 for 2005, and 0.27 for 2006.
**The cumulative foreign currency translation adjustment in millions was $(60), $(280), and $(29) at December 31, 2006, 2005, and 2004, respectively, and is included as a component of accumulated other comprehensive income (loss).
Adapted from *International Paper Annual Report for 2006* (Memphis, TN: International Paper, 2007), p. 49.

V.

ANALYSIS OF THE INCOME STATEMENT

As with the balance sheet, vertical, horizontal, and ratio analyses are the essential procedures for analyzing the income statement. Chapter III discusses the basics of those procedures. They are essential for analyzing *any* financial disclosure because they help the analyst answer the question, "Compared to what?"

Vertical analysis of the income statement has many limitations as a guide to a business's performance. The common-size income statement reveals some important measures of profitability, but not all of them, and it can only hint at a business's solvency. Vertical analysis is useful as a first step, however, because it reveals which aspects of a business's performance deserve careful attention as the analysis proceeds.

Net sales are the benchmark quantity for a vertical analysis of the income statement, so the common-size income statement lists each item as a decimal fraction of net sales. The sample analysis of International Paper's income statement, which appears after page 49,* reveals three key fractions. First, the cost of products sold consumes as much as three-fourths of sales revenue. Second, except in 2006 (an atypical year), other operating expenses consume three-fourths or more of the remainder. Third, net earnings have amounted to at most five percent of net sales in recent years, These proportions vary widely from firm to firm, but International Paper's are typical for a manufacturing business because its cost of products sold consumes the overwhelming majority of revenues, while only a tiny fraction remains for shareholders.

Profit Margins

The fraction of net sales remaining after deducting the cost of products sold is a business's gross profit margin, a key measure of profitability. There are no net earnings without gross profits, barring extraordinary non-operating gains. A business's gross profit margin indicates its average rate of profit per dollar of sales, which provides a basis for forecasting how much a change in

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* Having photocopies of these four pages at hand will make the discussion of the sample analysis easier to follow.

sales volume would affect earnings. Using International Paper's gross profit margins during these years, one can forecast that each additional dollar of sales revenue will yield at least 25 cents to cover operating expenses and provide a return to investors.

The size of the gross profit margin also is important as an indicator of the amount of volume a business must generate in order to earn a net profit. If operating expenses are relatively stable over a range of sales volumes, it takes more volume to generate a given amount of net profit with a low-margin product than with a comparably priced high-margin product. *Cost pressures* are thus more intense for managers of low-margin businesses.

The multiple-step income statement at the beginning of Chapter IV and the sample analysis of International Paper's income statement in this chapter both present gross profit as the difference between net sales and the cost of products sold. The gross profit margin is just one of several measures of profitability on the common-size income statement.

The operating margin, which is earnings from operations as a percentage of sales, is another such measure. Earnings from operations add fixed costs to the variable costs considered in the gross profit calculation, thus measuring the overall profitability of operations for a given period. Because earnings from operations include fixed costs, the operating margin is not as useful a measure of unit profitability as the gross margin. The operating margin is more likely to change as the volume of sales changes. As a measure of the overall efficiency of operations, however, the operating margin is more useful than the gross profit margin.

From the shareholder's or principal's point of view, pretax earnings (earnings before income taxes, extraordinary items, and the cumulative effect of accounting changes) and the pretax profit margin are the most relevant measures of profitability.

First, pretax earnings reflect the deduction of net interest expense from operating earnings. Net interest can consume a sizeable fraction of the operating margin if a business employs leverage. If so, the operating margin does not include all of the information relevant to an assessment of management's performance. A common reason for using leverage is to purchase productive assets in order to increase earnings. A complete assessment of management's effectiveness at using leverage must include the cost of leverage, which is net interest expense.

Second, pretax earnings is more relevant than net earnings, which often

include extraordinary items beyond management's control.

Third, corporate managements enjoy a degree of flexibility in determining the provision for income taxes. Because of this flexibility, management's ability to conduct transactions in ways that minimize the corporate tax burden strongly influences reported after-tax earnings. This ability is important, but shareholders and analysts should consider it separately from management's ability to produce a return on the resources entrusted to it.

Fourth, the provision for income taxes typically includes a substantial deferred component that reflects the change in a corporation's deferred tax liabilities, not its current tax obligations. Due to the conservative bias of tax allocation practices, deferred tax liabilities can include substantial amounts that are unlikely ever to be paid to tax authorities. This conservatism has produced ever-increasing deferred tax liabilities on many corporate balance sheets, so that deferred taxes have become a form of "stealth equity." To the extent that the provision for income taxes includes such permanent deferrals, pretax earnings is more relevant than after-tax earnings as a measure of management's ability to preserve and increase a corporation's equity.

Horizontal Analysis

International Paper's earnings fell into negative territory in 2004, then recovered in the following two years. Net after-tax earnings rallied to 5 percent of sales in 2005 and 2006.

Net sales and gross profit on sales remained flat (or decreased) over the four-year period, so the restoration of positive profit margins had other sources. One key is the year-to-year changes in total operating expenses, which plummeted from 21 percent of sales the first three years to 9 percent in 2006. This abrupt shift is attributable to an unorthodox bit of accounting, which lists the one-time sale of forestlands ($4.8 billion) in 2006 as a reduction of operating expenses. If not for this one-time event, operating expenses would have been sharply higher in 2006, and earnings lower, than in 2005.

Ratio Analysis

Ratio analysis is a lot like cooking. Like a chef, each analyst has a slightly different formula for computing a given ratio. Like ingredients, the available disclosures determine what gets computed. The ratios that we present in the sample analysis are "standard fare," but the list is by no

INTERNATIONAL PAPER COMPANY
Sample Analysis of Income Statement

(for years ended December 31; dollar amounts in millions)

2003	*2004*	*2005*	*2006*	
$22,138	$20,721	$21,700	$21,995	Net sales
16,443	15,204	16,334	16,248	Cost of Products Sold
$ 5,695	$ 5,517	$ 5,366	$ 5,747	*Gross Profit on Sales*
				Operating Expenses:
$ 1,347	$ 1,262	$ 1,274	$ 1,158	Depreciation and amortization
954	985	1,025	1,075	Distribution expenses
1,888	1,817	1,784	1,848	Selling and administrative expenses
235	220	213	215	Taxes other than payroll and income taxes
281	145	189	2,530	Restructuring charge, sale of businesses, other
			(4,788)	Sale of forestlands
$ 4,705	$ 4,429	$ 4,485	$ 2,038	Total Operating Expenses, excluding income taxes
$ 990	$ 1,088	$ 881	$ 3,709	*Earnings from Operations, before income taxes*
705	712	595	521	Interest Expense, net
$ 285	$ 376	$ 286	$ 3,188	*Earnings before Income Taxes, Minority Interest, and Extraordinary Item for Discontinued Operations*
(56)	114	(407)	1,889	Provision for Income Taxes
(83)	(24)	(9)	(17)	Minority Interest
$ 258	$ 262	$ 693	$ 1,299	*Earnings from Continuing Operations*
44*	(273)	416	(232)	Discontinued Operations
$ 302	**($ 35)**	**$ 1,100**	**$ 1,050**	**Net Earnings**
				Addenda
$ 1,719	$ 2,272	$ 1,911	$1,633	Average Cash and Temporary Investments
2,101	2,107	1,899	1,839	Average Accounts Payable
25,242	23,030	19,322	16,205	Average Fixed Assets
34,659	34,871	31,494	26,403	Average Total Assets
2,823	2,569	2,152	1,921	Average Inventories (LIFO basis)
16,443	15,204	16,334	16,248	Cost of Products Sold (LIFO basis)
2,925	2,884	2,689	2,650	Average Gross Receivables
1,771	209	1,178	692	Principal Repayment Requirements**
				Short-Term Solvency Measures
5.8	5.9	7.6	8.5	Average Inventory Turnover (LIFO basis)
63	62	48	43	Days to Sell Average Inventory
7.6	7.2	8.1	8.3	Average Receivables Turnover
48	51	45	44	Days to Collect Average Receivables
111	112	93	87	Operating Cycle (days)
				Long-Term Solvency Measures
1.4	1.5	1.5	7.1	Interest Coverage Ratio
0.4	1.2	0.5	3.1	Fixed Charges Ratio

* Includes (13) for changes in accounting methods.
** Principal Repayment Requirements are from the balance sheet entry, "Notes payable and current maturities of long-term debt."

Adapted from *International Paper Annual Report for 2006* (Memphis, TN: International Paper Company, 2007) and 10K reports from the *Wall Street Journal*, on-line edition.
The notes in the *Annual Report* are integral parts of the original statements.

As fractions of net sales (common-size statements)*				*As percentages of 2003 levels (index numbers or trend percentages)*			*Annual percent changes*		
2003	*2004*	*2005*	*2006*	*2004*	*2005*	*2006*	*2004*	*2005*	*2006*
1.00	1.00	1.00	1.00	94%	98%	99%	-6.4%	4.7%	1.4%
0.74	0.73	0.75	0.74	92	99	99	-7.5	7.4	-0.5
0.26	0.27	0.25	0.26	97	94	101	-3.1	-2.7	7.1
0.06	0.06	0.06	0.05	94	95	86	-6.3	1.0	-9.1
0.04	0.05	0.05	0.05	103	107	113	3.2	4.1	4.9
0.09	0.09	0.08	0.08	96	94	98	-3.8	-1.8	3.6
0.01	0.01	0.01	0.01	94	91	91	-6.4	-3.2	0.9
0.01	0.01	0.01	0.12	52	67	900	-48.4	30.3	1,238.6
____	____	____	(0.22)						
0.21	0.21	0.21	0.09	94	95	43	-5.9	1.3	-54.6
0.04	0.05	0.04	0.17	110	89	375	9.9	-19.0	321.0
0.03	0.03	0.03	0.02	101	84	74	1.0	-16.4	-12.4
0.01	0.02	0.01	0.14	132	100	1,119	31.9	-23.9	1,014.7
(0.00)	0.01	(0.02)	0.09	(204)	727	(3,373)	-303.6	-457.0	-564.1
(0.00)	(0.00)	(0.00)	(0.00)	29	11	20	-71.1	-62.5	88.9
0.01	0.01	0.03	0.06	102	269	503	1.6	164.5	87.4
0.00	(0.01)	0.02	(0.01)	(620)	945	(527)	-720.4	-252.4	-155.8
0.01	**(0.00)**	**0.05**	**0.05**	(12)	364	348	-111.6	-3,242.9	-4.5

Turnover ratios

12.9	9.1	11.4	13.5	=	net sales/average cash and temporary investments
10.5	9.8	11.4	12.0	=	net sales/average accounts payable
0.9	0.9	1.1	1.4	=	net sales/average fixed assets
0.6	0.6	0.7	0.8	=	net sales/average total assets

average inventory turnover	=	cost of products sold/average inventory
days to sell average inventory	=	365/average inventory turnover
average receivables turnover	=	net sales/average gross receivables
days to collect average receivables	=	365/average receivables turnover
operating cycle (days)	=	days to sell avg. inventory + days to collect avg. receivables

interest coverage ratio	=	pretax operating earnings/net interest expense
fixed charges ratio	=	pretax operating earnings net interest expense + principal repayment requirements

* Detail items may not add up to totals because of rounding error.

INTERNATIONAL PAPER COMPANY

Sample Analysis of Income Statement

(continued)

(for years ended December 31)				
2003	*2004*	*2005*	*2006*	**Selected Per-Share Measures**
$46.12	$42.64	$44.74	$46.21	Net sales
34.26	31.28	33.68	34.13	Cost of Products Sold
$11.86	$11.35	$11.06	$12.07	*Gross Profit on Sales*
$ 2.81	$ 2.60	$ 2.63	$ 2.43	Depreciation and amortization
1.99	2.03	2.11	2.26	Distribution expenses
3.93	3.74	3.68	3.88	Selling and administrative expenses
0.49	0.45	0.44	0.45	Taxes other than payroll and income taxes
0.59	0.30	0.39	5.32	Restructuring charge, sale of businesses, other
			(10.06)	Sale of forestlands
$ 9.80	$ 9.11	$ 9.25	$ 4.28	Total Operating Expenses, excluding income taxes
$ 2.06	$ 2.24	$ 1.82	$ 7.79	*Earnings from Operations, before income taxes*
1.47	1.47	1.23	1.09	Interest Expense, net
$ 0.59	$ 0.77	0.59	$ 6.70	*Earnings before Income Taxes, Minority Interest, and Extraordinary Item for Discontinued Operations*
(0.12)	0.23	(0.84)	3.97	Provision for Income Taxes
(0.17)	(0.05)	(0.02)	(0.04)	Minority Interest
$ 0.54	$ 0.49	$ 1.41	$ 2.69	*Earnings from Continuing Operations*
0.09*	(0.56)	0.86	(0.49)	Discontinued Operations
$ 0.63	**($0.07)**	**$ 2.27**	**$ 2.21**	**Earnings per Common Share**
				Addenda
$43.11	$42.00	$33.61	$34.10	Market Price per Common Share (year-end)
1.00	1.00	1.00	1.00	Dividends per Common Share
480	486	485	476	Weighted Average Common Shares Outstanding (millions)
79.8	85.7	23.8	12.7	Price-Earnings Ratio (recurring)
68.4	-583.2	14.8	15.5	Price-Earnings Ratio (net)
(in millions)				
$7,806	$8,246	$8,303	$8,157	Average Common Shareholders' Equity
14,290	14,696	13,026	9,710	Average Borrowed Funds
34,659	34,871	31,494	26,403	Average Total Assets
				Return on Investment Measures
4.93%	4.85%	4.57%	5.37%	Average Effective Interest Rate
2.86	3.12	2.80	14.05	Return on Assets
3.87	-0.42	13.25	12.87	Return on Equity
1.4	-0.1	4.7	0.9	Financial Leverage Index
2.32%	2.38%	2.98%	2.93%	Dividend Yield
26.14	-0.26	-17.60	4.43	Total Return on Common Shares

* Includes (.03) for accounting charges.

As percentages of 2003 levels (index numbers or trend percentages)			*Annual percent changes*		
2004	*2005*	*2006*	*2004*	*2005*	*2006*
92	97	100	-7.6	4.9	3.3
91	98	100	-8.7	7.7	1.4
96	93	102	-4.3	-2.5	9.1
93	94	87	-7.5	1.2	-7.4
102	106	114	2.0	4.3	6.9
95	94	99	-4.9	-1.6	5.5
92	90	92	-7.5	-3.0	2.8
51	67	908	-49.0	30.6	1,263.9
93	94	44	-7.0	1.5	-53.7
109	88	378	8.5	-18.9	329.0
100	84	75	-0.3	-16.3	-10.8
130	99	1,128	30.3	-23.8	1,035.8
(201)	719	(3,402)	-301.1	-457.8	-572.9
29	11	21	-71.4	-62.4	92.5
91	261	498	-9.3	187.8	90.8
(622)	956	(544)	-722.2	-252.7	-156.8
(11)	360	350	-111.4	-3,249.3	-2.7
97	78	79	-2.6	-20.0	1.5
100	100	100	0.0	0.0	0.0
101	101	99	1.3	-0.2	-1.9
107	30	16	7.4	-72.2	-46.8
(852)	22	23	-952.3	-102.5	4.3

average effective interest rate = net interest expense/average borrowed funds
return on assets = pretax operating earnings/average total assets
return on equity = $\frac{\text{earnings applicable to common shares}}{\text{average common equity}}$
financial leverage index = return on equity/return on assets

dividend yield = dividend per share/market price per share
total return on common shares = $\frac{\text{dividend per share + change in market price}}{\text{beginning market price}}$

means comprehensive, nor should the formulas used be taken as gospel. Those who take the time to churn out some of the innumerable variations on these formulas will find that no one measure is reliable or useful all of the time — a thorough analysis is important. That said, number-crunching quickly becomes an exercise in diminishing returns.

Although seldom acknowledged as such, per-share measures are ratios. The denominator of any per-share ratio is the weighted average number of common shares outstanding. Earnings per common share is thus the most frequently encountered income-statement ratio.

Earnings per share provides a useful yardstick for evaluating a corporation's share price:

$$(1) \qquad \text{price-earnings ratio} = \frac{\text{market price per common share}}{\text{net earnings per common share}}$$

As explained in Chapter IV, many analysts compare share prices by computing the present values of corporations' projected earnings per share. The calculations involved are complex, but given certain assumptions about future earnings trends, comparisons of P-E ratios will give the same answers for much less work. Although the necessary assumptions rarely apply, the ease of computing P-E ratios has led to their widespread use.

It is impossible to evaluate in advance the accuracy of the many earnings projections that are available — predicting earnings is not yet a science. A common substitute for the forward-looking P-E ratio is the ratio based on the latest reported earnings. This substitute is the number that appears in the stock tables in the newspaper, and in the sample analysis in this chapter. When earnings are expected to grow, which is often, this retrospective P-E ratio does not reflect the rosy earnings expectations that form the basis for the current market price. For this reason, the calculation of the retrospective P-E ratio can be a useful exercise in conservatism.

If the latest earnings report is to be used as a conservative estimate of future earnings, it is important to exclude any extraordinary items:

$$(2) \text{ price-earnings ratio} = \frac{\text{market price per share}}{\text{earnings per share from continuing operations}}$$

This we can term the recurring price-earnings ratio, a measure that ex-

cludes extraordinary or non-recurring items:

79.8	85.7	23.8	12.7	Price-Earnings Ratio (recurring)
68.5	-583.2	14.8	15.5	Price-Earnings Ratio (net)

Ratios in the neighborhood of 70 usually are reserved for biotechnology companies, purveyors of digital interactive services, and other speculative issues. They arise for International Paper only as an artifact of little or no earnings (and hence a small denominator) in 2003 and 2004. Only with the reappearance of positive earnings after 2004 do these ratios make more sense. For perspective, a rule of thumb is that price-earnings ratios of 16 (implying as they do a $1/16^{th}$ or roughly 6 percent rate of return) are "normal" for a mature business. This is the neighborhood the company returned to in 2005 and 2006. Even there, however, the ratios should be viewed with skepticism because the one-time $4.8 billion sale of forest land had the effect of artificially raising earnings per share in 2006.

The usefulness of per-share measures other than earnings per share depends on the variability of the number of shares outstanding. The sample analysis includes a per-share restatement of most items on International Paper's income statement. The horizontal analysis that accompanies it reveals little difference between the per-share change and the unadjusted change in each item from 2003 to 2005. In 2006, on the other hand, the company repurchased a substantial number of shares, which reduced the average for the year from 485 to 476 million shares outstanding:

480	486	485	476	Weighted Average Common Shares Outstanding (millions)

The cost of products sold decreased in dollar terms from 2005 to 2006, but increased on a per-share basis. Similarly, net sales were slightly higher in dollar terms, but had a greater increase on a per-share basis, because of the decrease in shares outstanding.

The Operating Cycle and Short-Term Solvency

Chapter III presented the current ratio as a measure of short-term solvency. The current ratio is poorly suited for its assigned task because it does not account for time. A business's current assets might outweigh its current

liabilities by the vaunted 2:1 margin, but the ratio is of little consequence if the liabilities are all due tomorrow and the assets are all raw materials inventories. That is an extreme example, of course, but solvency does depend on the composition of current assets and the timing of current liabilities. Accountants analyze asset composition in terms of quality, which is the likelihood of an asset's conversion to cash without any loss, and liquidity, which is the amount of time and effort the conversion will take. Two key measures of asset composition are inventory and receivables turnover, which measure the liquidity of those assets.

A turnover ratio expresses sales volume for a period as a multiple of the balance in an asset account. The asset balance usually is an average for the period, which can be calculated many ways. The most common method, especially with annual data, is to take the average of the beginning and ending balances for a period. Another common method of calculating an annual average, if quarterly data are available, is to take the average of the four end-of-quarter balances. The more change there is in an asset account, the more important it is to include several interim balances in the average.

Inventories are valued at cost, so an accurate inventory turnover ratio must value sales at cost too. The cost of products sold, rather than net sales, therefore is the appropriate denominator of the inventory turnover ratio:

(3) average inventory turnover = cost of products sold/average inventory

Inventory turnover rose steadily from 2003 to 2006, from 5.8 to 8.5. Although these developments clearly were favorable, increasing turnover is not always a good thing. Frequent stockouts and large order backlogs may interrupt production and drive away customers. Still, this rise most likely reflects the widespread adoption of just-in-time methods of inventory management, and as such can be read as a sign of increased efficiency.

Turnover ratios typically use annual sales in the numerator, measuring the number of times a business must replenish its average stock of inventories in a year. An alternative way to evaluate the pace of sales is to measure the time it takes to sell the average stock:

(4) days to sell average inventory = 365/average inventory turnover

Many analysts consider this measure easier to interpret than the inven-

tory turnover ratio.

Inventory turnover and days to sell inventories do not measure the liquidity of inventories directly, unless the business in question makes most of its sales for cash. The prevailing practice outside of the retail sector is to sell on credit, which gives rise to accounts and notes receivable. Receivables turnover and days to collect receivables are thus important measures of liquidity:

(5) average receivables turnover = net sales/average gross receivables
(6) days to collect average receivables = 365/average receivables turnover

It is appropriate to use net sales in the turnover ratio, rather than the cost of sales, because businesses value receivables at the sales price of merchandise, not at cost. Similarly, the analyst should use gross receivables to compute turnover, not net receivables, because the allowance for uncollectible accounts reflects a reduction in quality rather than an increase in liquidity.

International Paper's experience with receivables collection improved slightly during this period. Low or declining receivables turnover is unfavorable, indicating slow sales or a weak collections effort. High receivables turnover has its own drawbacks; a business with high receivables turnover may be turning away sales by insisting on stringent credit terms. As with inventory turnover and other turnover ratios, a business must strike a balance between excessive caution and overtrading.

Businesses can boost turnover by discounting receivables. Discounting is the sale of receivables to third parties before maturity, usually for less than face value. This is an age-old business practice, but the recent trend toward the securitization of every conceivable form of credit has made it increasingly popular. If a business sells receivables "with recourse," it continues to bear the risk of uncollectible accounts. Selling with recourse is a form of *off-balance-sheet financing*, and it overstates the receivables turnover ratio if the allowance for uncollectible accounts is inadequate. It is important to check for disclosure of this practice in the notes to a business's financial statements.

Days to sell inventory and days to collect receivables are informative measures by themselves, but it also is useful to consider them together:

(7) operating cycle = days to sell average inventory
+ days to collect average receivables

The gradual improvements in the various turnover measures that went into the operating cycle combined to reduce it considerably, from 111 days in 2003 to 87 in 2006. In other words, inventories are sold more rapidly and payments for them are received more quickly in 2005 and 2006.

The length of a business's operating cycle determines its short-term financing needs and is a gauge of its solvency. In traditional financing arrangements, a business takes out short-term loans to buy inventories and then repays the loans from collections of receivables. When these arrangements prevail, the liabilities due during the next operating cycle should not exceed the average amounts of cash, receivables, and inventories, plus a margin of safety.

Turnover, Efficiency, and Flexibility

Turnover ratios are not limited to inventories and receivables; they can be computed for any asset, for groups of assets, and for some liabilities too. Above, we introduced inventory and receivables turnover as starting points for solvency analysis, but that application is unique to those two ratios. All turnover ratios measure how intensively businesses use their resources, including receivables and inventories.

Every turnover ratio involves a trade-off. With inventories, businesses must balance costly excess stocks, the symptom of low turnover, against shortages, production bottlenecks, and other perils of high turnover. With receivables, low turnover suggests inefficient collection efforts or poor credit screening; high turnover suggests sales lost due to tight credit. In general, the trade-off is between efficiency and flexibility.

Efficiency involves minimizing the cost of existing operations by maximizing the use of resources. An efficient business maintains or increases its earnings by keeping its profit margins high. In contrast, flexibility involves minimizing the cost of expanding operations by keeping resources in reserve. Often it is possible to expand operations by expanding the resource base, but usually it is cheaper to press into service the idle resources on hand. A flexible business boosts its earnings by increasing its volume of operations and its market share.

The analyst has hundreds of turnover ratios to choose from, given the variety of assets and liabilities and the many possible groupings in either category. The sample analysis of International Paper's income statement presents four of the most useful ratios (not counting inventory and receiv-

ables turnover), three for assets and one for liabilities. Net sales is the numerator of all four ratios. These four ratios all followed the same pattern as the company's inventory and receivables turnover, increasing from 2003 to 2006. However, asset and liability ratios take opposite interpretations: high turnover indicates an efficient, inflexible use of assets and a flexible, inefficient use of liabilities.

Cash turnover is important because cash is the lifeblood of business. A business with excessive cash turnover bears a significant risk of insolvency. The analyst should determine the adequacy of such a business's short-term credit facilities. Excessive cash balances, on the other hand, are a sign of inefficiency; there is no return on idle cash balances. There is a return on temporary investments, however, so a low turnover of cash and temporary investments is more efficient than an equally low turnover of cash alone.

Accounts payable turnover is important because trade credit is free, unlike other forms of credit, as long as it is paid promptly. Because the balance of accounts payable is closely related to the volume of sales, changes in this ratio are particularly important. When sales are rising, increasing turnover indicates that a business could be taking greater advantage of this source of free financing. When sales are falling, increasing turnover suggests a curtailment of trade credit, which could be disastrous. Decreasing accounts payable turnover indicates deterioration in a business's current position and an increasing risk of insolvency.

Fixed assets turnover and total assets turnover are broad measures of asset utilization. Both ratios emphasize the utilization of capital assets rather than current assets. Total asset turnover tends to be more useful for analyzing service businesses, which rely heavily on intellectual property and other intangibles, than for manufacturing businesses, for which fixed asset turnover is vital. These ratios can fluctuate widely because capital investment and corporate acquisitions produce large changes in assets.

Long-Term Solvency

Solvency is a business's ability to meet its cash obligations on time and in full. Short-term solvency therefore depends on the adequacy of cash flows. Over the long term, solvency includes an additional hurdle: a business must earn enough to maintain its financial and physical capital. When capital maintenance is inadequate, a business is reducing the scale of its operations, which tends to involve a gut-wrenching series of write-offs and

reorganizations — and often bankruptcy — rather than an orderly liquidation process. These difficulties attending a failure to maintain capital can increase substantially the risk of short-term insolvency.

From the long-term creditor's point of view, it is a risky proposition to lend to a business that has a capital maintenance problem. Depreciation, write-offs, and other non-cash expenses allow a financially sound business to build up cash reserves to meet its principal repayment requirements. When revenues are insufficient to cover non-cash expenses, however, the risk that the business will default on its principal rises, because there is no opportunity to set aside the necessary cash. A business in this position can avoid default by refinancing its debt, but given the poor operating results, creditors will require higher interest payments to assume the increasing risk. This situation can develop into a vicious circle, in which increased interest payments put a burden on cash flows that erodes solvency even further, raising both the cost of future refinancing and the likelihood of default.

The interest coverage ratio is one of the most useful measures of long-term solvency:

$$\text{(8)} \qquad \text{interest coverage ratio} = \frac{\text{pretax operating earnings}}{\text{net interest expense}}$$

An interest coverage ratio greater than 1 indicates that a business's operating earnings exceed its interest expense, in which case a business has met all of its cash obligations (except for income taxes), and thereby has achieved short-term solvency. Having met its operating expenses, which include non-cash allowances for capital maintenance, the business also has attained long-term solvency. It is appropriate to exclude income taxes from this calculation because interest and most operating expenses are tax-deductible, so taxes apply only when income remains after these deductions.

A quick way of determining a business's long-term solvency is to check whether pretax earnings are positive. If so, then the interest coverage ratio will be greater than 1. The drawback of this method is that there is no simple way to compare the pretax earnings of different businesses. The analyst can use pretax earnings to determine that two businesses are solvent, but only the interest coverage ratio will reveal which one enjoys a greater margin of solvency.

A conservative measure of long-term solvency is the fixed charges ratio.

The phrase "fixed charges ratio" has generated more than the usual degree of inconsistent usage. Some analysts equate it with the interest coverage ratio. The SEC has published an extraordinarily complex formula for the ratio that it requires in official disclosures. The following formula is much simpler:

$$(9)\ \text{fixed charges ratio} = \frac{\text{pretax operating earnings}}{\text{net interest expense + principal repayment requirements}}$$

This ratio is appropriate when the pattern or amount of a business's depreciation and other non-cash charges differs markedly from that of its sinking-fund requirements and other principal repayments. This is most likely to be the case among businesses that borrow for purposes other than acquiring depreciable assets. The conservative bias applies to businesses that do use depreciation to accumulate cash reserves. Double counting occurs in these cases because principal repayment requirements appear in the denominator while depreciation, their proxy, is deducted from the numerator.

The judgments of the professional credit-rating services are important adjuncts to the analyst's own work, especially for the inexperienced analyst. The major rating services are Moody's, Standard & Poor's, Fitch, and Egan-Jones. Most public libraries carry publications from one or more of these services. Each service has its own proprietary rating system, but they all are variations on the letter grades used in schools. You may obtain ratings free on-line by registering with Moody's at www.moodys.com.

Judging by its pretax earnings, International Paper remained solvent from 2003 through 2006. But this financial success did not come easy, resulting as it did from a one-time sale of forestlands in 2006. The implication is that the company struggled, through a series of drastic measures, to remain competitive, albeit at a much smaller scale of operations. To S&P, at least, such measures were deemed virtuous attempts to strengthen International Paper's credit-worthiness.

Whereas Moody's downgraded the rating from Baa2 to Baa3 in December of 2005, a subsequent report by S&P commended the company's attempts to reduce long-term debt. The report noted that International Paper had splurged on debt-financed acquisitions in the years leading up to 2001. "Thus, it limited its acquisitions and share repurchases, held its dividend

level flat, and made moderate-size divestitures in order *to restore its credit profile*. IP's commitment to maintaining an investment-grade rating and its use of more than one-half of its $11 billion of asset-sale proceeds for debt reduction are important considerations in our ratings." (*Ratings Direct: International Paper Co.*, Standard & Poor's, December 5, 2007, p. 5, emphasis added.) Accordingly, S&P's rating of BBB was upgraded from a "negative watch" (or outlook) in 2005 to a "stable watch" in 2006. (Conversely, when in 2008 International Paper announced a plan to buy parts of its competitor, Weyerhaeuser, S&P announced a negative credit watch.)

Leverage and Return on Investment

Long-term solvency is the bondholder's paramount concern because it ensures an uninterrupted series of interest and principal payments. The bondholder's investment decision hinges almost exclusively on an assessment of risk, because the returns on bonds are essentially fixed. Up to a point, bondholders can demand higher interest payments for assuming unusual risks, but this strategy becomes self-defeating when debt service becomes so burdensome as to weaken a borrower's financial position.

The shareholder's investment decision is an assessment of risk *and* return. Shareholders' returns are uncertain, unlike bondholders', so shareholders must determine whether a corporation can use borrowed funds effectively, rather than merely competently. Shareholders stand to gain much more than bondholders if a corporation uses leverage effectively. Long-term solvency is, of course, a major concern of shareholders, but it weighs relatively less in their investment decisions.

A key element of a business's effective use of leverage is the cost of borrowing, which the analyst should weigh against the benefits of borrowing, if possible. The income statement affords a rough measure of the cost of borrowing:

$$\text{(10)} \qquad \text{average effective interest rate} = \frac{\text{net interest expense}}{\text{average borrowed funds}}$$

Borrowed funds in this equation consist of short-term notes payable and long-term debt, including current maturities. An exact measure of the effective interest rate would use the weighted average of borrowed funds outstanding, but that seldom is disclosed.

An interest rate acts as a hurdle rate of return for capital investment projects and corporate acquisitions to be financed by borrowing: investments expected to return less than the prospective interest rate do not "clear the hurdle" and should not be undertaken — the costs are likely to outweigh the benefits. Because businesses base investment decisions on prospective rates, the average effective interest rate is useful primarily for assessing projects already undertaken. When interest rates are relatively stable, however, the average effective rate can provide a reasonable forecast of prospective rates.

The cost of leverage is readily identifiable — it is interest expense, the return to bondholders — but the benefits of leverage are more difficult to measure. In most cases, it is impossible for equity owners to distinguish the extra returns attributable to leverage from the returns that a business could have provided without using leverage, given the same equity base. Even when businesses disclose to equity owners detailed accountings of the returns on each capital project and acquisition, which seldom happens, there is not necessarily an exact correspondence between borrowings and investments. For these reasons, the analyst must infer the benefits of leverage from measures of return on investment.

Return on investment quantifies a management's efficiency in employing the resources entrusted to it. Return-on-investment measures are ratios of returns to resources. There are a number of ways to count a business's returns and resources, so the scope of return-on-investment ratios can vary considerably. One of the broadest and most important ratios is return on assets:

(11) return on assets = pretax operating earnings/average total assets

It includes every resource on the balance sheet, however financed, and the broadest measure of net returns. To be any broader, a return-on-investment ratio would have to include off-balance-sheet-financing items, such as operating leases and the debt of unconsolidated subsidiaries. A similar ratio using gross returns (*i.e.*, sales) in the numerator would be a turnover ratio. Turnover measures the intensity of the use of resources, whereas return on investment measures efficiency.

From the shareholder's point of view, return on equity is a key return-on-investment ratio:

(12) return on equity = $\frac{\text{earnings applicable to common shares}}{\text{average common shareholders' equity}}$

This ratio is a more selective measure than return on assets. Whereas return on assets measures management's ability to earn a return using the assets at hand, return on equity measures management's ability to provide a return to shareholders using the available equity base.

Although disclosures and analyses commonly cite return on equity, it suffers from some serious drawbacks. First, the book value of common shareholders' equity often bears little relation to its market value, so that shares cannot be purchased at anything approaching book value. For corporations in this situation, return on equity is not a literal measure of returns to shareholders. Second, the book value of equity does not include tacit forms of equity, such as minority interest (for which market value also can differ markedly from book value) and deferred income tax liabilities.

Despite these drawbacks, return on equity is a useful ratio. One important use for the ratio is in evaluations of the effectiveness of leverage:

(13) financial leverage index = $\frac{\text{return on equity}}{\text{return on assets}}$

Leverage enables a business to purchase a stock of assets larger than its equity base. If those extra assets are more productive than the cost of borrowing, then return on equity exceeds return on assets and the financial leverage index exceeds 1. This is the desired result. If the financial leverage index equals 1, then leverage is a wash. If the index falls below 1, leverage is doing more harm than good.

As the subprime crisis of 2007-2008 reminds us, leverage can be a double-edged sword. Leverage boosts return on equity during the fat years. On the other hand, leverage produces a disproportionate drop in return on equity when profits fall, whether for firm-specific reasons or during a recession.

In any case, not much general meaning should be ascribed to the gyrations of International Paper's financial leverage index in the years surveyed. Perhaps the main explanation for the sharp drop in the index from 2005 to 2006 is that the company chose to take part of the proceeds from its one-time sale of forestlands to pay off over $2 billion of debt. This decision, as reported

in the footnotes to the annual report, shows up in the table as a reduction in average borrowed funds from $14.7 billion in 2004 to $9.7 billion two years later.

Shareholder Returns

Return on equity indicates management's efficiency in providing a return to shareholders, but it is a poor measure of shareholder returns. Return on equity is enormously useful because it summarizes the flood of data that the GAAP framework makes possible. The problem with return on equity is the problem with GAAP: it accounts for only a portion of the transactions that affect corporate share prices. Changes in share prices constitute the bulk of shareholder returns, so it is GAAP's failure to account for these changes that makes return on equity such a poor measure of shareholder returns.

Accounting data measure the past transactions of a corporation, but the price of its shares depends on investors' expectations about the corporation's future transactions. Changes in earnings expectations play a particularly large role in determining share prices. In addition, there are many transactions that a corporation does *not* make that can affect its share price, such as those that change interest rates and other economic conditions, and those that change the prices of other corporations' shares.

Together with share-price changes, dividends are a major component of shareholder returns. Dividends are significant because they are much more reliable than share-price increases; they usually are paid on an announced schedule, and usually in cash. By contrast, capital gains come and go with the vagaries of the stock market, and they can be converted to cash only once. The reliability of dividends makes dividend yield a useful measure of shareholder returns:

$$\text{dividend yield} = \frac{\text{dividend per share}}{\text{market price per share}} \tag{14}$$

By adjusting corporations' dividends for their share prices, this ratio affords direct comparisons of the payouts of different corporations. In International Paper's case, a steady year-to-year dividend payment of $1 per share is divided by the stock price to give the modest dividend yield.

A corporation's dividend yield is readily comparable to the percent change in its share price because both are expressed in percentage terms. The sum

of these two measures gives (with some rearrangement):

$$\text{(15)} \qquad \text{total return on common shares} = \frac{\text{dividend per share + change in market price}}{\text{beginning market price}}$$

This formula applies only when there are no extras, which include spin-offs, warrants, rights, stock dividends, and other non-cash distributions to shareholders. If applicable, the cash value of extras should be added to the numerator of Equation (15). Total return is the bottom line from the shareholder's point of view. It is a comprehensive measure of the factors affecting a shareholder's investment experience, from management performance to investor sentiment.

INTERNATIONAL PAPER COMPANY

Consolidated Statement of Cash Flows (Indirect Method)

For the Year Ended December 31, 2006

Operating Activities	(in millions)
Net Earnings	1,050
Cumulative Effect of Accounting Changes	
Non-cash Items:	
Productivity improvement charge	453
Depreciation and amortization	1,158
Deferred income taxes	1,619
Gain on sales of forestlands	(4,788)
Business sales	1,496
Other, net	376
Changes in Current Assets and Liabilities:	
Accounts and notes receivable	
Inventories	(43)
Accounts payable and accrued liabilities	(202)
Other	104
Cash Provided by Operations	**$ 1,223**
Investment Activities	
Invested in Capital Projects	($1,009)
Mergers and Acquisitions:	
Plants, Properties, and equipment	529
Other assets and liabilities, net	(48)
Net proceeds from sales of forestlands	1,635
Other Investment	(73)
Cash Used for Investment Activities	**$ 1,034**
Financing Activities	
Issuance of Common Stock, net of repurchases	($1,401)
Monetization of Timber Notes	4,850
Issuance of Debt	223
Reduction of Debt	(5,391)
Dividends Paid	(485)
Other Financing	(100)
Cash Provided by Financing Activities	**($2,304)**
Effect of Exchange Rate Changes on Cash	$30
Change in Cash and Temporary Investments	($17)
Cash and Temporary Investments:	
Beginning of Year	1,641
End of Year	$ 1,624

Adapted from *International Paper Annual Report for 2006* (Memphis, TN: International Paper Company, 2007), p. 51. The notes on pp. 54-88 of the *Annual Report* are an integral part of the original statement.

VI.

THE CASH FLOW STATEMENT

Ah, take the cash, and let the credit go,
Nor heed the rumble of a distant drum!
– The Rubaiyat of Omar Khayyam

A cash flow statement reconciles an enterprise's beginning and ending cash balances for a given accounting period by listing the various sources and uses of cash. The total of those items is the net change in cash (the difference between the beginning and ending balances). The cash flow statement is a close cousin of the familiar bank statement. By the same token, cash flow is what you keep track of in your checkbook, an exercise in *cash-basis* accounting. Synonyms for the statement of cash flows include statement of changes in financial position, funds statement, and statement of sources and applications of funds, or "source & app" for short.

The cash flow statement resembles and complements the income statement. The income statement applies *accrual* accounting data to measure profitability. It does so by accounting for the change in retained earnings (except for the portion due to transactions with owners). But the income statement can only hint at solvency, because accrual accounting does not distinguish between cash and non-cash revenues and expenses.

The cash flow statement measures solvency by applying cash-basis accounting data to account for the change in cash. On the other hand, the cash flow statement is inappropriate for measuring profitability because depreciation (the provision for capital maintenance, a necessary element of any measure of profitability) is a non-cash item.

As the example at left shows, an important function of the cash flow statement is to classify cash flows into three broad categories: operating, investing, and financing activities. This classification reveals a business's ability to finance expansion internally and its reliance on outside financing. Ideally, a business should generate large cash inflows from operations, augment them with the leverage of cash inflows from financing, and, after providing for sufficient cash reserves, expand its operations *via* cash outflows for investing. Given the imperfect circumstances that prevail in practice, the appropriate course of action rarely is so clear.

TECH DATA CORPORATION

Consolidated Statement of Cash Flows (Direct Method)

For the Year Ended January 31, 2007

Cash Flows from Operating Activities:	
Cash received from customers	$21,185,902
Cash paid to suppliers	(21,091,764)
Cash paid for interest	(26,901)
Cash paid for income taxes	(81,216)
Net Cash from Operating Activities	**($ 13,988)**
Cash Flows from Investing Activities:	
Proceeds from sale of business	$ 16,500
Capital expenditures	(31,667)
Software development	(12,062)
Fixed asset disposal	3,563
Net Cash from Investing Activities	**($ 23,666)**
Cash Flows from Financing Activities:	
Issuance of common stock	$ 25,183
Credit line, net	(164,824)
Proceeds from issuance of convertible debentures	342,554
Cash paid for purchase of treasury shares	(80,093)
Excess benefit from stock-based compensation	544
Long-term debt repayments	(1,611)
Net Cash from Financing Activities	**$ 121,753**
Foreign exchange effects	$ 24,242
Net Increase in Cash	$ 108,341
Cash at Beginning of Year	156,655
Cash at End of Year	$ 265,006
Item: Depreciation	53,280

Source: Annual cash flow from 10K statement, *Wall Street Journal* on-line edition.

Cash Flows from Operations

Operating cash flows are the flows that a business generates to produce net income. This classification reveals an important difference between the cash flow statement and the income statement. Interest and income taxes are operating items on the cash flow statement, but not on the income statement. The difference arises because *net* income, and therefore operating cash flows, includes deductions for interest and taxes, but *operating* income does not.

There are two ways to measure operating cash flows: the direct method and the indirect method. Using the direct method, as shown at left, a business lists cash inflows and outflows from operations and their total, which is net cash flow from operations. The FASB encourages businesses to use the direct method, but it is rare for a business to do so, apparently because of the complexity of restating accrual-basis accounting records on a cash basis.

The indirect method (as in the first table in this chapter) involves *removing the accruals from net income*. Beginning with net income, a business adds back non-cash expenses and subtracts (as indicated by the parentheses) non-cash revenues. Using depreciation and amortization to illustrate, net income in 2006 was reduced by $1,158 million, the amount deemed necessary to "set aside" for capital replacement. But no cash was actually set aside in making this adjustment. To come up with a measure of cash generated from operations, then, we have to add back the $1,158 million:

Net Earnings	$1,050
Cumulative Effect of Accounting Changes	-
Non-cash Items:	
Productivity improvement charge	453
Depreciation and amortization	1,158
Deferred income taxes	1,619
Gain on sales of forestlands	(4,788)
Business sales	1,496
Other, net	376

An unusual entry in this (and in some of the accounts examined in earlier chapters) is the treatment of the sales of forestlands. Listing the $4,788 million here, but then subtracting that amount from net income, means that

the sale was not for cash. In other words, it added to net income, but not to cash available. More on this shortly.

In any case, we are not quite finished tabulating cash flow from operations. Now we turn from adjustments in items in the income statement to those pertaining to the balance sheet: to assets and liabilities. The indirect method adds the increases in certain current liabilities and subtracts the increases in certain non-cash current assets to arrive at net cash flow from operations:

Changes in Current Assets and Liabilities:	
Accounts and notes receivable	-
Inventories	(43)
Accounts payable and accrued liabilities	(202)
Other	104
Cash Provided by Operations	**$1,223**

The changes in current assets and liabilities appearing here reflect *the net change in non-cash working capital*. Remember that working capital is defined as current assets minus current liabilities. It includes not only cash but also the items listed above. To find the net cash made available by operations, in other words, we need to deduct the non-cash increase in working capital.

It is also worth mentioning what gets left out of the adjustments just outlined. This calculation excludes the changes in dividends payable, notes payable, and the current portion of long-term debt; and on the assets side, changes in loans receivable. The calculation of operating cash flows also excludes changes in non-current assets and liabilities, because only investing and financing activities involve cash transactions that produce changes in those accounts.

From the reader's point of view, the direct method is better than the indirect method. First, the FASB requires businesses that use the direct method to present as a supplementary disclosure the indirect method's reconciliation of net income and operating cash flows. Second, the indirect method reveals little about a business's operations that does not also appear on the income statement or the balance sheet. Third, like the income statement, the direct-method cash flow statement reveals the composition of a business's revenues and expenses, but on a cash basis rather than an accrual basis, thus

providing additional useful information.

Cash Flows from Investing and Financing

The use of the indirect method is an option *only* for presenting cash flows from operations. Businesses must use the direct method to present cash flows from investing and cash flows from financing; there are no accrual-basis measures of these activities to restate on a cash basis.

Investing activities are transactions that affect non-current asset accounts, specifically fixed assets and investments in subsidiaries and in other affiliates. Cash flows from investing arise from capital investment projects, sales of fixed assets, mergers and acquisitions, divestitures, purchases and sales of securities, loans, and a variety of similar transactions. Of particular interest here is the entry for net proceeds from sales of forestlands, a source of $1.6 billion. In cash terms, this is the net effect of the deal, over and above the offsetting financial swaps that show up in the statement for cash provided by operations and cash provided by financing activities:

Invested in Capital Projects	($1,009)
Mergers and Acquisitions:	
Plants, properties, and equipment	529
Other assets and liabilities, net	(48)
Net proceeds from sales of forestlands	1,635
Other Investment	(73)
Cash Used for Investment Activities	**$1,034**

Investment is a vital business activity because depreciation is inevitable. Given the current rapid advances in technology, businesses must contend with obsolescence as a source of depreciation in addition to traditional wear and tear. A business that does not invest enough to compensate for depreciation is shrinking its capital base and the scale of its operations. As described on page 60, such shrinkage seldom is an orderly process.

In general, financing is a vital source of cash for businesses that require a level of investment greater than cash flows from operations. This situation is typical of young, developing businesses and of companies intent on rapid expansion. Financing activities include most transactions that affect equity and long-term liabilities, including the current portion of long-term debt. (At the same time, however, retained earnings are affected by operating

activities that produce net income.) Cash flows from financing arise from long-term borrowings and repayments, issues of stock, purchases and sales of treasury stock, payments of dividends, and other related transactions:

Issuance of Common Stock	($1,401)
Monetization of Timber Notes	4,850
Issuance of Debt	223
Reduction of Debt	(5,391)
Dividends Paid	(485)
Other Financing	(100)
Cash Provided by Financing Activities	**($2,304)**

Several points can be noted concerning these entries. The first item is negative, because rather than issuing new stock for cash, International Paper repurchased stock in the amount of $1.4 billion. It thus used cash to buy some of its own outstanding shares, which now will be termed "treasury stock" on the balance sheet. As to dividends, the payments of $1 a share on a year-end total of 485 million outstanding shares also gave rise to a cash outlay.

Most notable are the two opposite-signed entries of roughly $5 billion each. The first, $4.850 billion for the monetization of timber notes, can be viewed as an offset to the deduction of $4.788 billion in the initial section on cash provided by operations. The other big number is for retirement of long-term debt, which used up $5.391 billion in cash.

One interpretation (though the footnotes hardly permit a definitive reading) of the effect of the sale of forestlands on cash flow in 2006 might run as follows. The company sold nearly all of its remaining forestlands for roughly $5 billion. This gain added to its income (and indeed gave it a positive net income for the year). But the sale was not paid for in cash (which is why the amount had to be subtracted from net income in the indirect version of cash provided by operations). Instead, the sale was to be paid off at some future period. In the meantime, the company turned around and issued short-term notes on the future amount due, described here as monetization of timber notes, raising $4.850 billion in cash. Then it used the cash and another $500 million besides to pay off longer-term debt. How will it repay the monetized notes? From the amount due in payment of the initial sale, in some future period. By this reading, the one-time sale of forestlands in effect permitted

a reduction of long-term debt (and future interest payments).

What we can say with more confidence is that in 2006 International Paper generated about $1 billion in cash from its operations and a comparable sum from its investments. Then it used about the same amount, $2.3 billion, for financing activities. The net change in cash balances was thus a $17 million reduction.

Finally, three minor points remain. First, the statement of cash flows classifies dividend payments as financing transactions, but it classifies *interest payments* as operating transactions. This classification is counterintuitive because interest arguably is a financing item. By the definition above, however, financing activities must affect long-term liabilities or equity. Interest payments do not affect either, so they are not financing activities. Interest also is one of the items in the computation of net income, which makes it an operating cash flow.

Second, certain investing and financing transactions require no cash flows. Examples include purchases and sales of fixed assets in exchange for mortgages; mergers, acquisitions, and investments involving debt-equity swaps and exchanges of equity; and conversions of convertible securities to common stock. The statement of cash flows must include a separate schedule of these non-cash transactions, if they are material.

Third, the effect of exchange-rate changes on cash discloses the change between balance-sheet dates in the dollar value of cash balances denominated in foreign currencies. Exchange-rate changes are not strictly cash flows, but they appear in the statement of cash flows because they are necessary for reconciling the change in cash balances. Businesses subject to exchange-rate changes list this item separately from operating, investing, and financing activities because exchange-rate changes do not reflect a business's own transactions.

VII.

ANALYSIS OF THE CASH FLOW STATEMENT

MOST nonprofessionals throw away annual reports well before reaching the statement of cash flows. In contrast to the widespread familiarity of the income statement and the balance sheet, the cash flow statement remains somewhat obscure, even among financial professionals. One reason for this obscurity is that GAAP did not require businesses to prepare cash flow statements until 1971. The relative lack of exposure, however, is no indication of this statement's usefulness. Those who take the time to understand and analyze a business's cash flows will gain a valuable perspective on its solvency, the quality of its earnings, its reliance on outside financing, and the adequacy of its cash flows for maintaining and expanding operations.

A useful analysis of these topics requires some rearrangement of the cash flow statement, as the sample analysis on the following pages shows.* Published cash flow statements follow a 3-part format, which breaks out cash flows from operating, investing, and financing activities. Instead, we will focus here on a 2-part breakdown of the sources and uses of cash, including subtotals for operating and investing activities. This 2-part format allows for a proper common-size analysis, so we have recast International Paper's cash flow statement in two parts in the sample analysis. To retain all the useful information from the 3-part format, the sample analysis presents net financing cash flows as an addendum.

Earnings Quality and Operating Cash Flows

Accrual accounting affords managers substantial discretion. If they are so inclined, managers can use this discretion to obfuscate performance and manipulate earnings estimates by using "shoehorn accounting," the practice of structuring questionable transactions to fit the letter of GAAP, but not its spirit. The majority of businesses do not bend the rules, of course, but when interests conflict, as owners' and managers' interests often do, reasonable people will disagree about legitimate exercises of discretion. An analysis

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* Having photocopies of these four pages at hand will make the discussion of the sample analysis easier to follow.

INTERNATIONAL PAPER COMPANY

Sample Analysis of Cash Flow Statement

(in millions, except as noted, at December 31)

2003	*2004*	*2005*	*2006*	
				Sources of Cash
$ 302	($ 35)	$1,100	$1,050	Net Earnings
13				Cumulative Effects of Accounting Changes
				Non-cash Items:
$ 229	$ 217	($ 260)	$ 453	Productivity improvement charge
1,347	1,262	1,274	1,158	Depreciation and amortization
(336)	(82)	(656)	1,619	Deferred income taxes
	242		(4,788)	Gain on sales of forestlands
34	139	111	1,496	Business sales
(49)	100	211	376	Other, net
$1,225	$1,878	$ 680	$ 314	Total Non-cash Items
				Changes in Working Capital Items:
$ 87				Accounts and notes receivable
51	(84)	8	(43)	Inventories
(117)	57	(634)	(202)	Accounts payable and accrued liabilities
			1,635	Net proceeds from sales of forestlands
261	572	356	104	Other
$ 282	$ 545	($ 270)	$1,494	Net Increase (Decrease) in Working Capital Items
$1,507	$2,423	$ 410	$1,808	*Cash Provided by Operations*
80	164	23	$32	Issuance of Common Stock
2,116	2,536	968	223	Issuance of Debt
(641)	(4,217)	(2,669)	(5,391)	Reduction of Debt
			4,850	Monetization of Timber Notes
$1,555	($1,517)	($1,678)	($ 286)	*Cash Provided by Financing Items*
$3,377	**$ 871**	**($ 168)**	$2,572	**Total Sources of Cash**
				Uses of Cash
1,031	925	992	1,009	Capital Investment Projects
52	(616)	(900)	(456)	Mergers and Acquisitions:
$1,083	$ 309	$ 92	$ 553	*Total Fixed Assets Spending*
184	(364)	(99)	48	Other Investment
$1,267	($ 55)	($ 7)	$ 601	*Cash Used for Investment Activities*
$ 550			$1,433	Repurchase of Common Stock
480	485	490	485	Dividends Paid
(66)	433	209	100	Other Financing
$ 964	$ 918	$ 699	$2,018	*Cash Used for Financing Items*
$2,231	**$ 863**	**$ 692**	**$2,619**	**Total Uses of Cash**
143	225	(95)	30	Effect of Exchange Rate Changes on Cash
1,289	233	(955)	(17)	*Change in Cash and Temporary Investments*
				Addenda
$ 591	($2,435)	($2,377)	($2,304)	Net Cash Provided by Financing Activities
45,378	43,993	37,229	33,443	Average Investment in Assets
2,568	3,434	1,669	2,791	Adjusted Operating Cash Flow
22,138	20,721	21,700	21,995	Net Sales
$3.14	$4.99	$0.85	$3.80	Cash Flow per Share
5.0	-69.2	0.4	1.7	Earnings Quality Ratio
0.30	1.66	2.76	1.6*	Debt Refinancing Ratio
6.81%	11.69%	1.89%	8.22%	Cash Operating Margin
5.66	7.81	4.48	8.35	Cash Return on Assets

* The 2006 ratio includes both Issuance of Debt and Monetization of Timber Notes in the denominator.

Adapted from annual cash flow 10K statements, *Wall Street Journal* on-line edition.

*As fractions of total sources** (common-size statements)*				*As percentages of 2003 levels (index numbers or trend percentages)*			*Annual percent changes*		
2003	*2004*	*2005*	*2006*	*2004*	*2005*	*2006*	*2004*	*2005*	*2006*
0.09	(0.04)	(6.55)	0.41	-12%	364%	348%	-111.6%	-3,242.9%	-4.5%
0.07	0.25	1.55	0.18	95	(114)	198	-5.2	-219.8	-274.2
0.40	1.45	(7.58)	0.45	94	95	86	-6.3	1.0	-9.1
(0.10)	(0.09)	3.90	0.63	24	195	(482)	-75.6	700.0	-346.8
	0.28		(1.86)					-100.0	
0.01	0.16	(0.66)	0.58	409	326	4,400	308.8	-20.1	1,247.7
(0.01)	0.11	(1.26)	0.15	(204)	(431)	(767)	-304.1	111.0	78.2
0.36	2.16	(4.05)	0.12	153	56	26	53.3	-63.8	-53.8
0.03									
0.02	(0.10)	(0.05)	(0.02)	(165)	16	(84)	-264.7	-109.5	-637.5
(0.03)	0.07	3.77	(0.08)	(49)	542	173	-148.7	-1,212.3	-68.1
			0.64						
0.08	0.66	(2.12)	0.04	219	136	40	119.2	-37.8	-70.8
0.08	0.63	1.61	0.58	193	(96)	530	93.3	-149.5	-653.3
0.45	2.78	(2.44)	0.70	161	27	120	60.8	-83.1	341.0
0.02	0.19	(0.14)	0.01	205	29	40	105.0	-86.0	39.1
0.63	2.91	(5.76)	0.09	120	46	11	19.8	-61.8	-77.0
(0.19)	(4.84)	15.89	(2.10)	658	416	841	557.9	-36.7	102.0
			1.89						
0.46	(1.74)	9.99	(0.11)	(98)	(108)	(18)	-197.6	10.6	-83.0
1.00	**1.00**	**1.00**	**1.00**	26	(5)	76	-74.2	-119.3	-1,631.0
0.31	1.06	(5.90)	0.39	90	96	98	-10.3	7.2	1.7
0.02	(0.71)	5.36	(0.18)	(1,185)	(1,731)	(877)	-1,284.6	46.1	-49.3
0.32	0.35	(0.55)	0.22	29	8	51	-71.5	-70.2	501.1
0.05	(0.42)	0.59	0.02	(198)	(54)	26	-297.8	-72.8	-148.5
0.38	(0.06)	0.04	0.23	(4)	(1)	47	-104.3	-87.3	-8,685.7
0.16			0.56			261			
0.14	0.56	(2.92)	0.19	101	102	101	1.0	1.0	-1.0
(0.02)	0.50	(1.24)	0.04	(656)	(317)	(152)	-756.1	-51.7	-52.2
0.29	1.05	(4.16)	0.78	95	73	209	-4.8	-23.9	188.7
0.66	**0.99**	**(4.12)**	**1.02**	39	31	117	-61.3	-19.8	278.5
0.04	0.26	0.57	0.01	157	(66)	21	57.3	-142.2	-131.6
0.38	0.27	5.68	(0.01)	18	(74)	(1)	-81.9	-509.9	-98.2
0.18	(2.80)	14.15	(0.90)	(412)	(402)	(390)	-512.0	-2.4	-3.1

investment in assets = total assets + accumulated depreciation - current liabilities
adjusted cash flow =cash provided by operations + income tax payments + interest payments

cash flow per share =cash provided by operations/weighted average shares outstanding
earnings quality ratio =cash provided by operations/net earnings
debt refinancing ratio =reduction of debt/issuance of debt
cash operating margin =cash provided by operations/net sales
cash return on assets =adjusted operating cash flow/average investment in assets

** Detail items may not add up to total, because of rounding.

of the sources of cash, particularly operating cash flows, provides outsiders with an independent perspective on a business's affairs, one that management can only manipulate fraudulently. This independent perspective acts as a check against management's exercises in spin control, and against more serious abuses of discretion.

For most businesses, the three most important sources of cash are net earnings, depreciation, and financing items. Net earnings and depreciation also account for the bulk of most businesses' operating cash flows. The common-size statements in the sample analysis for 2003-2006 reveal that International Paper fit this pattern as regards the first two. In contrast, a consistent year-by-year reduction of debt left the third, financing items, as a use of cash, not a source, from 2004 on.

As the checklist on page 3 notes, unusual accounting practices that require further scrutiny (those that may be distorting earnings) are likely to show up in the section on non-cash items in the sources of cash. Non-cash amounts are easier for managers to manipulate than are cash amounts because the amounts of non-cash items often depend on management's own estimates rather than on verifiable transactions. In contrast, cash items all involve transactions, which generate paper trails. It generally takes fraudulent acts to manipulate line items generated by transactions.

Managers who wish to put a positive spin on earnings have two ways to do so. They can exaggerate non-cash additions to earnings (deductions from operating cash flows). Or they can understate non-cash deductions (additions to operating cash flows). Non-cash additions to earnings are of greater concern to the analyst than understated non-cash deductions, because a deduction, however much it is understated, is still a deduction. It does not have the potential to boost reported earnings above operating cash flows, whereas non-cash additions do. In a nutshell: the quality of earnings is highly suspect when net earnings exceed operating cash flows.

In one case of exaggerated earnings, a company recorded a write-off of fixed assets as a current asset, thus deferring the write-off expense. The company used its plans to sell the fixed assets to justify its unusual accounting. On the cash flow statement, this maneuver understated the amount of write-offs and overstated the increase in operating working capital, *but it had no effect on net cash flows*, which illustrates the value of the independent perspective that the cash flow statement provides.

As noted in the last chapter, International Paper's cash flow statements

pose a different problem of interpretation. The 2006 sale of $4.8 billion of forestlands appears as a reduction in cash in the operations section of the account, implying that the sale was for credit. But an almost equal amount appears below, under financing items, for "Monetization of Timber Notes." By this reading, the effect of extending credit (by accepting notes, not cash, for the sale) was canceled out when the Timber Notes were sold for cash. (Then the proceeds, it appears, were used to reduce debt.)

In any case, International Paper had some problems with earnings quality, as measured by the earnings quality ratio:

$$(1) \qquad \text{earnings quality ratio} = \frac{\text{cash provided by operations}}{\text{net earnings}}$$

When either net earnings or operating cash flows are negative, as in 2004, the analyst should use the difference between the two to measure earnings quality, because interpretation problems arise when negative numbers enter into the ratio. A ratio of 1.0 indicates that a business produced a dollar of operating cash flows for every dollar of earnings. For a given level of earnings, a higher ratio is more favorable.

5.0	-69.2	0.4	1.7	Earnings Quality Ratio

A ratio below 1.0, as in 2005, indicates unfavorable circumstances that the analyst should examine carefully. The reason to be concerned about low earnings quality is that a business cannot use net income to pay dividends, invest in plant and equipment, or repay loans; it must have cash.

When there is a substantial gap between earnings and cash flows, whether due to low earnings quality or, conversely, to low earnings, it is useful to compare the traditional accrual-basis measures of profitability with their cash-basis counterparts:

$$(2) \quad \text{cash flow per share} = \frac{\text{cash provided by operations}}{\text{weighted average common shares outstanding}}$$

$$(3) \qquad \text{cash operating margin} = \frac{\text{cash provided by operations}}{\text{net sales}}$$

(4) cash return on assets = $\frac{\text{adjusted operating cash flow}}{\text{average investment in assets}}$

These ratios do not measure profitability, of course, because *cash flows do not account for depreciation*. But the ratios do gauge the efficiency of a business's operations. Non-cash items, which often account for much of the gap between earnings and cash flows, tend to distort measures of efficiency.

Cash flow per share complements earnings per share. Arguably, preferred dividend requirements should be deducted from the numerator to obtain cash flows applicable to common shares. But that measure has less analytical significance than earnings applicable to common shares.

$3.14	$4.99	$0.85	$3.80	Cash Flow per Share
$ 0.63	**-$0.07**	**$ 2.27**	**$2.21**	**Earnings per Common Share**

The cash operating margin provides an alternative to the net profit margin.

6.81%	11.69%	1.89%	8.22%	Cash Operating Margin
1.36	-0.17	5.07	4.77	Net Profit Margin

The analyst also can use adjusted operating cash flow (operating cash flows before deducting cash payments for income taxes and interest) in the numerator to obtain a cash-basis ratio comparable to the gross profit margin. As a counterpart to operating profits, adjusted operating cash flow also serves as the numerator of cash return on assets.*

5.66	7.81	4.48	8.35	Cash Return on Assets
2.86	3.12	2.80	14.05	Accrual Return on Assets

Solvency and Financing Cash Flows

Strictly speaking, an enterprise is either solvent or insolvent. Either it can meet its obligations promptly and in full or it cannot. When financial markets were less developed and when bankruptcy laws were stricter, deter-

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* The main difference between the average investment in assets, the denominator of cash return on assets, and average *total* assets, the denominator of the accrual-basis ratio, is that the first counts fixed assets gross of depreciation (as if no depreciation had occurred). A minor difference is that the investment in assets counts operating working capital rather than total current assets. Although complex, these adjustments ensure comparability.

mining insolvency was a simpler matter. Today, businesses can draw on cash flows from financing activities practically indefinitely. Healthy companies can roll over long-term debt indefinitely, or retire it by issuing stock. Such companies can draw on standby lines of credit to weather unexpected or seasonal cash squeezes.

In short, solvency is a matter of degree. Still, in recent years International Paper tried to shore up its balance sheet by retiring debt, not borrowing more. From gross and net perspectives, the result was the same. Financing items were users of cash, not sources. (We reverse the signs in column 3 to adjust for a negative denominator in each ratio, total sources of cash, in 2005.)

Issuance of Common Stock	0.02	0.19	0.14	0.01
Issuance of Debt	0.63	2.91	5.76	0.09
Reduction of Debt	(0.19)	(4.84)	(15.89)	(2.10)
Monetization of Timber Notes				1.89
Cash Provided by Financing Items	0.46	(1.74)	(9.99)	(0.11)

The picture is much the same for the *net* issuance of debt:

Issuance of Debt	0.63	2.91	5.76	0.09
Less: Reduction of Debt	(0.19)	(4.84)	(15.89)	(2.10)
Less: Monetization of Timber Notes				1.89
Net Issuance of Debt	0.44	(1.93)	(10.13)	(0.12)

The debt refinancing ratio also measures this relationship:

$$\text{(5)} \qquad \text{debt refinancing ratio} = \frac{\text{reduction of debt}}{\text{issuance of debt}}$$

The cash flow statement makes no distinction between short-term and long-term debt. This matters for the 2006 entries because we list the short-term source of cash, "Monetization of Timber Notes," along with the issuance of new long-term debt. When the two entries are combined to find the value of the denominator, the ratio becomes 1.06. Since this value exceeds one, a net reduction of debt took place in 2006, just as in 2004 and 2005.

When, on the other hand, a business relies increasingly on financing items to provide cash, it becomes a riskier investment. If it borrows more,

debt service will place mounting demands on operating cash flows. Creditors face the risk that the business will be unable to employ the proceeds of borrowing profitably enough to meet those demands. If not, equity owners risk a dilution of their interests, because the business will have to grant creditors an equity interest or it will have to raise additional equity capital, or even sell assets, to pay off creditors in cash.

Just as International Paper made strenuous efforts to reduce its long-term debt over this period, it also engaged in a substantial stock repurchase in 2006. That one-time repurchase greatly outweighed the issuance of stock for the entire four years. Both the debt reduction and the stock repurchase are touted in the company's annual report as steps to strengthen the company's capital structure and benefit company stockholders.

Cash Flow Adequacy

In sum, a business's operations must generate cash receipts adequate to fund certain key expenditures if the business is to avoid excessive reliance on outside financing—and the trend toward insolvency that accompanies it. First, to avoid outright insolvency, a business's operating cash receipts must satisfy all of its obligations to suppliers and employees, and its interest obligation to creditors. Operating cash receipts need only meet interest payments because refinancing is a legitimate source of cash for principal repayment. Second, operating cash receipts should provide for the maintenance of the existing stock of fixed assets. Third, if sales are rising, operating receipts should finance the necessary additions to the stock of working capital.

A business should consider paying a dividend only if its receipts from operations suffice to meet these three key expenditures. If not, a dividend would be either a redistribution from creditors to equity owners or a return *of* capital, but not a return on capital. This dividend policy is not a universal dictum, however. One notable exception is that a subsidiary's dividend payments are likely to reflect its parent's cash needs, notwithstanding any disinvestment concerns. In addition, steady and rising dividend payments are an important device for attracting investors. Most companies resist cutting dividends unless cash shortfalls threaten to persist for some time.

"Free cash flow" is the name that many analysts apply to the amount of operating receipts remaining after a business has provided for the hierarchy of expenditures outlined above. That said, no single definition of free cash flow has gained widespread acceptance, although the name itself is widely

used. "Free" refers to management's discretion in using free cash flow to expand productive capacity, to invest in other companies, or to clean up the balance sheet by retiring debt and equity. (This, to repeat, is what International Paper did in 2006.)

One reason for the lack of agreement about what constitutes free cash flow is that cash-basis accounting makes no distinction between capital maintenance and the expansion of productive capacity. Absent this distinction, analysts muddle through using a variety of approximations to the idealized measure described above.

One such approximation is the following formula:

(6) free cash flow = cash provided by operations
– fixed assets spending
– inventory additions
– dividends

Because the indirect method of computing operating cash flows is so prevalent, it generally is impractical to use gross cash receipts from operations as a starting point for the analysis.

As a dollar amount, free cash flow is not conducive to comparisons among companies, or to industry averages. The cash flow adequacy ratio, which falls below 1.00 when free cash flow is negative, allows for such comparisons:

(7) cash flow adequacy ratio =

$$\frac{\text{cash provided by operations + inventory additions}}{\text{fixed assets spending + inventory additions + dividends}}$$

The measure of fixed assets spending used in these calculations includes both capital maintenance and spending to expand the company's productive capacity.

One way to gauge the amount of capital maintenance is to compare total fixed assets spending to depreciation and amortization:

(8) cash reinvestment ratio =

$$\frac{\text{depreciation and amortization + proceeds from fixed assets sales}}{\text{fixed assets spending}}$$

A related measure of cash flow adequacy is the asset replacement ratio:

$$(9)\ \text{asset replacement ratio} = \frac{\text{cash provided by operations} - \text{dividends}}{\text{average investment in assets}}$$

This asset replacement ratio alters the ranking of cash uses presented in the calculation of free cash flow. The difference is the emphasis on what is left over after the payment of dividends:

$$(10)\ \text{cash provided by operations} - \text{dividends} = \text{free cash flow} + \text{fixed assets spending}$$

In the ratio, dividends come before purchases of fixed assets. The presumption is that all of the cash from operations that remains after dividends are paid will go toward the purchase of fixed assets.

Still, the ratio does not measure actual asset replacement. Instead, it measures the adequacy of operating cash flows to fund fixed assets spending. In any case, a useful rule of thumb here is that *operating cash flows should suffice to replace between 8 and 10 percent of the stock of assets annually*. Just as with the ratios we have listed in this chapter, of course, much will depend on a company's specific circumstances.

Earnings Quality, Cash Flow, and Enron

A recurring theme in this chapter is that cash flow is harder to manage or finesse than earnings. The corollary? Whether for routine "earnings management" or for more serious deceptions, in the end cash flow's truth will out.

In particular, a widely monitored ratio is the one that opened this chapter: earnings quality, or cash-provided-by-operations divided by net earnings. The word "operations" in this context means the ongoing, mainstream activity of the company—not one-time or gimmick transactions.

As noted earlier, when the earnings-quality ratio falls below one, earnings are not being matched by commensurate cash flow. This imbalance is a red flag. It signals the likelihood that management has inflated earnings via artificial estimates and one-time or non-recurring deals. In other words, managers may be trying to keep the company's stock price afloat by creating

the illusion of sustained (and sustainable) high earnings.

In 2001, a growing suspicion by some analysts and journalists about earnings quality led to the fall of the house of cards that was Enron. As the next chapter describes, Enron relied on pumped-up "mark-to-market" estimates of earnings, and it created offshore (and off-the-books) "special purpose entities" that allowed the company to maintain the illusion. But where was the cash flow to match? Was it generated by ongoing operations?

Once observers posed these two cold questions, the game soon ended, imposing losses on creditors and shareholders of about $100 billion. Nor was that the end of the story. Something similar happened again in 2007, when the "structured investment vehicles" created by some of the world's largest banks turned out to be hiding places for off-balance-sheet holdings. We can trace this sequence one step at a time, beginning with the accounting scandals of 2001 and a set of reforms that proved inadequate to the problems yet to come.

VIII.

ACCOUNTING FRAUD: ENRON'S LINGERING SHADOW

ACCOUNTING fraud came to the center of the public stage in 2001 and 2002, as Enron, Global Crossing, Qwest, and WorldCom were accused of cooking their books on a multi-billion dollar scale. Accounting is an art, not a science. There is always a fair amount of "creative accounting" going on as to how corporations choose to report their operations to the investing public. But these four cases, along with insider loan deals at Adelphia and Tyco and a host of lower-profile scandals, caused enough of a stir to get Congress to enact the Sarbanes-Oxley Act in July 2002.

Sarbanes-Oxley imposed sterner penalties for accounting fraud and made CEOs and CFOs responsible for wrongdoing at lower levels. But as the subprime mortgage debacle of 2007 would reveal, it also left in place dubious off-balance-sheet accounting practices Enron had employed that would bring a new round of excesses, abuses, and massive losses by some of the world's largest banks.

For perspective, a few preliminary points are in order. First, not all accounting fraud takes place in big corporations. Some of the most lurid accounting scandals are about trusted bookkeepers who loot small businesses, undiscovered, over extended periods of time.

Second, not all accounting gimmickry constitutes fraud. Sometimes it's just questionable, not illegal. Moreover, different companies use more "aggressive" or more "conservative" practices. In that context, what matters most to the outside observer is the consistency of the methods used over time. For example, when a company known for conservative methods suddenly shifts to more aggressive ones (so as to make earnings look higher), a red flag goes up.

Third, not all corporate corruption is an accounting scandal. Sometimes, as in the Adelphia or Tyco cases, it takes the form of covert sweetheart loans to board directors or executives, granted just as a company's solvency is about to be called into question.

Still, it remains true that large-scale illegal accounting schemes have dotted the landscape of corporate America in recent years. This chapter poses a few basic questions about the Enron-era scandals:

- Why do companies cheat?
- How do they do it, traditionally and today?
- Where were the auditors when we needed them?
- What changes, if any, did Sarbanes-Oxley bring?

"Managed Earnings": Why Companies Routinely Massage the Books

Whatever the other reasons, one recurring theme is the link between a company's quarterly profit, as reported in the income statement, and the company's stock price.

Managers care what happens to the price of the company's stock for several reasons. They may own stock outright themselves. A variant is owning stock options, whose value will depend in part on the current price of the stock. Also, top managers' pay may depend on incentives linked to the performance of the stock.

In turn, the price of a company's stock can be influenced by accounting practices. The context is a peculiar ritual in which a company's managers provide outside analysts with information that helps the analysts come up with advance estimates of earnings and earnings per share. If the company's actual numbers fall short of such estimates, even if only by a few cents per share, the company's stock price can sometimes be driven down by several dollars.

The fear of this outcome can lead managers in a company to engage in "creative accounting" to meet the quarterly earnings estimates and maintain the stock price. The most obvious ways to do that are (1) anything that will make revenues look bigger than they were and (2) anything that will make expenses look smaller than they were. Since earnings (or profits) are revenues minus expenses, either avenue will give the desired overstatement of earnings.

Tricks of the Trade

As for the actual mechanics, a list of accounting tricks might include these:

Accelerating revenues. In April 2007 International Rectifier, a technology company, announced that one of its foreign subsidiaries had committed accounting irregularities that included "premature revenue recognition of product sales." In May the company added that the same subsidiary had

entered phony revenues in connection with "shipment of products and the recording of sales with no obligation by customers to receive and pay for the orders" (quoted in Herb Greenberg, "Accounting Scandals: Not a Problem?" The Wall Street Journal, July 7-8, 2007).

Channel-stuffing. This is a related trick, in which shipments are made at the end of the quarter and recorded as revenues, even though some of the shipments will be returned in the next quarter. A variant is recording as revenues shipments sent to distributors, when the distributors have the right to send back any unsold products. Either way, this quarter's revenue goes up, albeit artificially.

Accelerating expenses preceding an acquisition. If the expenses for a takeover target are registered early, before the company is acquired, the result will be that the post-takeover books will have that much lower an entry for the acquiring firm. The result will be higher earnings than otherwise. This was a favorite ploy of Tyco in the late 1990s.

Round-trip deals. AOL used this device to inflate its on-line advertising revenue by over $1 billion back when it was trying to justify the high price Time-Warner was paying to merge with it in 2000. What were the round trips? AOL paid inflated prices to its suppliers (typically computer or server vendors), who then turned around and used the premiums they had received to buy advertising on AOL. (Think "kickbacks.")

Other income or expense. The word "other" in an accounting context typically refers to operations not in the company's main line of activity, and thus best entered in a separate category. But this device may provide a company with an opportunity to match some of its operating expenses with "other income" (derived perhaps from a sale of land or buildings). Then the operating expenses in effect disappear. Earnings from operations rise apace.

Pension plans. Depending on the interest rate used to estimate future pension obligations, and also on the performance of the fund's assets in financial markets, expenses can be understated or revenues overstated, giving the appearance of higher earnings than a company actually achieved from its operations.

Off-balance-sheet items (and conduits). As both Enron and the subprime mortgage meltdown of 2007 illustrated, some companies control subsidiaries that serve as off-the-books parking places for debt that has actually been incurred by the parent company. The rule: If the parent owns less than 50 percent of the subsidiary, it does not need to show the subsidiary's accounts in its own financial statements. This can be convenient, because one company can have full control of another even without owning 50 percent of its stock.

Synthetic leases. Instead of buying a new plant and listing the loan to pay for it on the balance sheet as a liability, a company can lease it for five or ten years and record the annual payments as expenses. However, at the end of the lease, the company is then obliged to buy the building anyway, at a full price. What is gained in the years of the lease by way of minimizing debt is lost when the bill eventually comes due.

"Big Bath" charges. These occur when a company does a write-down on assets that have previously been listed in the balance sheet but are now written down or off as no longer having value. This is not deceptive in itself. But it may provide opportunities to throw in unrelated but embarrassing transactions, just to get them covered up. Put another way, when a company announces that it is "restructuring," it may look for ways to dispose of any number of left-over sins.

The cookie jar. This is a slush fund set up to smooth out the ups and downs. It appears that at Beazer Homes USA, in good times executives "set aside funds, or record an accrual, for some future liability. This results in an expense against the current period's profit and an entry on the company's balance sheet of an accrual, or reserve, for a liability. The idea is that down the road, if bad times hit, the company can reverse or write down…the liability, and flow that amount back through the income statement." (Michael Corkery and David Reilly, "Beazer's Accounting Woes Extend Roller Coaster Ride," *The Wall Street Journal*, on-line edition, August 16, 2007.)

The Accounting Fraud Crisis of 2001 and 2002

Creative accounting soared to new heights at the Millennium, apace with the bursting of the dot-com bubble and a shake-out in the telecommunica-

tions industry. The backdrop was a wave of overinvestment by competing telecom companies, in an ill-advised race to see who could reach households first with the most in telephone-plus-Internet services. In that context, perhaps the most dramatic new accounting abuses were introduced by Enron, Global Crossing, Qwest, and WorldCom, of which only the middle two now survive.

The fraudulent four had several things in common. First, as an energy company and three telecommunications businesses, they were all networked businesses, either for electricity on power grids or for bandwidth to carry digital data and messages (or both). Second, all were new companies, although before its total transformation in the 1990s Enron had existed as a traditional natural-gas utility; the other three went public in the mid-to-late 1990s. Third, they all used the same auditor. (See Lawrence A. Cunningham, "The Sarbanes-Oxley Yawn," University of Connecticut Law Review, Vol. 36, 2003.)

In the heady days leading up to the Millennium, the four young network-based companies managed to convey the illusion of blazing trails where no accountant had gone before. When they came up with new accounting sophistry to inflate their earnings and stock prices, their auditor-in-common, Arthur Andersen, went along with the experiment.

How did they do it, and why did it come crashing down? Several new tricks came into play.

Abuse of pro forma accounts. One device was a "pro forma" or as-if set of accounts to eliminate the effect of a supposedly one-time or non-recurring event from a company's accounts. It was relatively traditional, having already been used by plenty of old-economy companies. A company issues two versions of the financial statements—one for what actually happened, and the other (more pleasant) as if an unpleasant event had not occurred. An example might be when an insurance company takes a one-time charge for earthquake claims, even though next year might bring some other equivalent natural disaster. A typical gambit here would be a footnote telling the reader not to pay attention to the pro forma accounts, as they conflict with GAAP. The premise, however, is that no one actually reads the footnotes.

Global Crossing, the Bermuda-based telecommunications giant, was a case in point. Founded in 1997, Global Crossing went public to the tune of $40 billion in 1998 in one of that era's typically inflated IPOs, only to go bankrupt

within two years. Lacking a coherent strategy, operating models, or healthy cash flows, the company created the illusion of growth through acquisitions of other companies—which it paid for with its own inflated stock. Then it covered up its operating weakness by means of pro forma accounts.

Capitalizing expenses ("cap-exing"). Then there was WorldCom, operating under the name MCI, which it had acquired in its acquisition spree in the 1990s. As with Global Crossing, WorldCom used acquisitions as a way to buy the appearance of growth. When on antitrust grounds the FTC issued a decree forbidding WorldCom from taking over Sprint, the house of cards began to shudder. In a jam, WorldCom came up with a brazen way of showing a profit for the year 2000.

One of WorldCom's operating expenses was "line costs," the fees WorldCom paid to local phone companies for use of their lines in WorldCom's long distance calls. In the pinch, WorldCom decided that about one-third of its $22 billion in 2001 line costs should be treated instead as a capital expenditure. The pretext was that that $7 billion in line costs could be viewed as an asset that would give rise to income in future years. In other words, a current operating expense of about $7 billion was taken off the income statement and listed as an asset on the balance sheet.

The result of "cap-exing" this expense was to reduce current operating expenses by $7 billion, leaving the company showing a slight profit for the year. This is where things got interesting inside the company. For one thing, in prior years all the line costs had been listed as expenses in the income statement. So here was a red-flag scenario: a company changing its accounting methods from conservative to aggressive as the need arose.

Beyond that, investigators later learned that the original journal entries had been recorded as operating expenses. But when the journals were aggregated and posted into the larger accounts, executives high in the company overrode the journal entries and shifted some amounts to capital expenditures. When the auditor, Arthur Andersen, was asked about the entries and the overrides, its professional ruling was, in effect, "No problem."

Network capacity-swapping. Deals between Global Crossing and Qwest, another new provider of local telephone service, took advantage of new methods of cooking the books via "capacity-swapping." Telecommunications firms may have legitimate reasons to exchange pipeline capacity with

one another, to make up for gaps in their own networks. What happened by 2000 was that aggressive accounting techniques were introduced to make such swaps seem to generate increased earnings—when in fact no money actually changed hands.

A simplified example shows how the numbers could be doctored. If a carrier built new lines at a cost of $100, it could record the cost as a current operating expense (of $100), or it could capitalize the expense, spreading it out over, say, five years, recognizing an expense of $20 this year, $20 next year, and so on. Either approach might be valid, depending on circumstances.

Now suppose that the same new capacity is swapped with a competing carrier, and the exchange is assigned a value of $125 in each direction. No money changes hands, just carrying capacity. Revenue can then be recorded at the time of delivery as $125. The corresponding expense, according to the basic accounting principle of matching an expense to the revenue associated with it, should be $100. So far, even though no cash flow will ever accompany this swap, the income statement will show revenue of $125 and corresponding expense of $100, for a profit of $25, or 25%.

The companies took this sleight of hand a step further. Instead of matching the $100 expense to the $125 of (bartered) revenue, they capitalized the expense over five years, giving an expense this year of $20. Now the income statement would show revenue of $125 and expense of $25, for a $100 addition to income.

If the swaps had been given an even higher (artificial) value as revenue, the result would have been even bigger boosts to income. Also, companies on each side of the swap could play the same game with the books, creating the illusion of rapid increases in earnings and earnings per share. One problem, from their point of view, was how to keep the charade going in the out years, when the amortized expense would continue, and new (artificial) revenues would have to be found to offset it. Another, more immediate issue was the absence of cash flow to match the inflated earnings figures. Enter Enron.

Enron, the SEC, and Mark-to-Market Valuation

In 1992, while it was still a traditional utility in the pipeline business, Houston-based Enron obtained a favorable ruling from the SEC as to how the company could value its assets. This SEC green light on what has

come to be known as "fair value accounting" opened the door to Enron's financial sleight of hand through the 1990s. The ruling gave the company substantial leeway in applying "mark-to-market" methods to value the company's assets.

The traditional accounting approach is to value assets at their historical cost: the price paid to acquire them. This tends to be conservative, in that it is likely to understate the asset's current market value. Of course, where an asset depreciates over time, formulas are used to write it down from its historical cost, year by year. But for an asset like land, whose value is likely to rise over time, its book value does not rise apace but remains an understatement: its historical cost.

Enron managed to get the SEC to allow the company to use more optimistic valuations of its assets than the historical-cost approach. Its mark-to-market valuations took natural gas contracts reaching over 20 years into the future and added up their present discounted value. Whether the future payments would ever actually be made was another question. The effect was to create new assets on current balance sheets—and gains translating into higher reported earnings.

In this way, estimated (and uncertain) future revenue streams got booked in the current period as gains in the value of assets, raising bottom-line net earnings right away. Where did such contracts come from, and who would make good on them? In addition to the accounting tricks already noted in this chapter, Enron also created bogus trading partners to generate its mark-to-market estimates.

It set up supposedly independent "Special Purpose Entities" (SPEs) that were secretly controlled by Enron executives. Like the more recent Structured Investment Vehicles of the subprime meltdown, SPEs offered off-balance-sheet parking places, notably to hide much of Enron's debt. They also served as trading partners to engage in "round-trip" and capacity-swapping transactions to create the illusion of rapid growth in Enron's revenue and earnings. Meanwhile, some Enron executives were also secretly profiting from the SPEs' operations. In sum, the transactions between Enron and the SPEs were hardly "arm's-length" or independent market transactions.

Toward the end of the 1990s, the share of assets on Enron's balance sheet that had been conjured up by mark-to-market techniques rose abruptly. The amount jumped from $5 billion in 1999 to $21 billion in 2000, raising the share from 15 percent of reported assets to 31 percent. It was later deter-

mined that during this same period the company reported its debt as $10 billion, or less than half the actual total of $22 billion. In short, the use of mark-to-market valuation and SPE tricks reached a peak in 2000—the last year the company bothered to file audited financial statements.

In the end, Enron's meteoric growth turned out to be an illusion. As noted at the end of the last chapter, when market analysts began to question the quality of earnings and absence of positive cash flow, the stock price started to fall, and the SPEs were exposed as synthetic constructs. When the party ended in late 2001, roughly $100 billion in fabricated assets would disappear more or less overnight. When the bankruptcy court set out to salvage assets to pay creditors, all that remained to be liquidated was the infrastructure of a traditional pipeline utility company, a small fraction of the assets Enron had claimed on its balance sheet.

This issue of how to assign value to assets on a balance sheet turned out to be pivotal not only for Enron, but later for financial institutions in the subprime crisis of 2007.

Where Were the Auditors?

When the fraud endemic to the four companies eventually came to light, it was not because an auditor found them out and blew a whistle. Instead, the auditor was part of the cover-up.

Partly in response to investigative reporting by a *Wall Street Journal* team, the SEC announced an investigation of Enron. At that point, Arthur Andersen intentionally destroyed large numbers of records and documents. This amounted to obstruction of justice, a felony. That was the end of Arthur Andersen.

Before long the Big Five public accounting firms had become today's Big Four. Today these four private partnerships audit companies that have over 90 percent of the world's stock market value. They are Deloitte & Touche, Ernst & Young, KPMG, and PricewaterhouseCoopers (itself created in the 1998 merger of Price Waterhouse and Coopers & Lybrand).

It should be added, however, that each of these four large public accounting firms also had its own auditing scandal in the early years of the decade. So while Arthur Andersen had truly gone to the dark side, the other big public accounting firms (the auditors) were also implicated in a variety of illegal practices.

The net result was that the Sarbanes-Oxley reforms passed in 2002 were in

part a response to the problem of the auditors—not just of big companies that had hopped the tracks. Even under the new, post-2002 standards, however, the four big auditing firms do not claim to be able to find accounting fraud where it has been orchestrated from the higher ranks within an audited company.

Reasonable—Not Absolute—Assurance

From the auditors' point of view, their job is to provide something called "reasonable assurance" that a company's books are on the up and up. According to Dennis Nally, head of PricewaterhouseCoopers, "If the public has a view that the auditor's report on a set of financial statements is designed to provide absolute assurance, that is not what the auditing profession and the [auditing] literature requires today. We're providing reasonable assurance. There's a big difference between absolute and reasonable." (David Reilly, "Accounting's Crisis Killer," *The Wall Street Journal*, March 23 2007, on-line edition.)

Technically, auditors are charged with examining a company's financial statements to see if they contain any "material misstatements." Misstatements are erroneous numbers that may reflect simple numerical errors, errors in interpreting accounting rules—or deliberate fraud. They are "material" if they are large enough to make a difference in the meaning the numbers convey to a person reading the financial statements. (Otherwise, they are immaterial, meaning not worth worrying about.)

Because of the detail and complexity of financial statements, auditors rely on statistical sampling techniques, rather than checking every entry. They may check the largest magnitudes, or the ones most likely to yield misstatements. In any case, once material misstatements are found, the auditors will bring them to the company's attention so that they can be fixed. As noted in Chapter I, only then can the auditors sign off on the statements.

According to a "forensic accountant," here is where the problem of detecting fraud arises. The auditors are much more likely to find accidental errors than deliberately cooked entries—or fraud. The reason is that when someone sets out to come up with phony numbers, the network of adjustments that can be made may prove difficult to pin down. In other words, as long as the obvious links between numbers seem to jibe, it can be difficult if not impossible to find anything wrong. Remember, not all the numbers are examined, just a sample. (Tracy L. Coenen, "Why Didn't Our Auditors Find the Fraud?" in *Wisconsin Law Journal*, January 2006,

on-line at www.wislawjournal.com.)

The upshot is that by signing off on a company's books, auditors do not claim that they can say with total assurance that the books are clean. Instead, they claim only a reasonable assurance. Thus the auditor's signature at the end of an annual report really only means that a professional has given a fairly thorough look at the financial statements and found them to conform to Generally Accepted Accounting Principles, or GAAP.

By the same token, it turns out that audits are rarely the means by which fraudulent corporate behavior is discovered. According to a study of 230 cases of alleged corporate fraud between 1996 and 2004, only 10 percent came to light via audits. Nearly half were discovered by means of internal checks or whistle-blowing employees. Analysts and media (as in *The Wall Street Journal*'s investigative reporting on Enron) registered another 21 percent between them. (Alexander Dyck, Adair Morse, and Luigi Zingales, "Who Blows the Whistle on Corporate Fraud?" NBER Working Paper No. 12882, February 2007.)

What Did the Sarbanes-Oxley Act Do?

The Sarbanes-Oxley (SOX) Act of 2002 was intended to provide investors with more confidence about the reliability of corporate accounting and financial statements. It supplemented prior legislation (mainly concerning the SEC), in light of Enron's and WorldCom's collapse.

From a political perspective, many investors had lost much of their savings in the dot-com bubble, and the combination of plunging stock values and accounting scandals compelled Congress to take action. Given the political exigencies, some observers were quick to conclude that the result was more expedient than real. Indeed, in substantive terms the Act's key provisions may not seem to amount to much:

- making corporate executives more accountable for dubious accounting practices.
- requirements for transparency and full disclosure in financial statements.
- oversight and inspection of auditors.
- registration of all public companies with a newly created Public Company Accounting Oversight Board (PCAOB).
- rules for investment bank and other analysts who may experience conflicts of interest.

- new powers of enforcement and punishment where these or earlier rules are violated.

In historical perspective, SOX can be seen as an attempt to place the rule-makers at arm's length from the accounting profession. In 1973 the Financial Accounting Standards Board (FASB) was created to help define the principles the profession should follow. But it depended for its funding on accounting's main professional organization, the American Institute of Certified Public Accountants (AICPA). Together, FASB and the AICPA cooperated to debate and define the profession's Generally Accepted Accounting Principles (GAAP), which at last count numbered 159.

In an influential 1984 interpretation of "The House of GAAP," Steven Rubin portrayed FASB and AICPA as equal partners at the top of the layer-cake of standard-setting procedures (*Journal of Accountancy*, June 1984, pp. 122-128). In other words, when it came to principles, the profession and an organization it funded collaborated.

Something similar also held for auditing standards. Here the standard-setter was a group called the Public Oversight Board, or POB. It was also funded by AICPA (*i.e.*, accountants).

SOX ended these cozy arrangements. A key provision in the Act was to shift FASB's funding from the AICPA to public companies themselves. The implication was that the rule-maker had been too dependent on the accounting profession and needed to gain arm's-length separation.

The same intention can be seen in Sarbanes-Oxley's treatment of auditing standards. Sarbanes-Oxley replaced POB with a new group, the Public Company Accounting Oversight Board (PCAOB). While the alphabet soup sounds similar, there is one big difference. PCAOB's five-member board would now be selected by the SEC, not by the AICPA. And its funding would come not from the AICPA but from publicly traded companies. Put another way, in light of the scandals of the prior few years, Congress resorted to asking the SEC itself to take a more direct role in the process.

The question that remains is whether such reforms have prevented further examples of dubious accounting, some of which may turn out to entail accounting fraud. One such practice is the backdating of stock options.

Backdated Stock Options: OK as Long as They Are Expensed

An employee, often newly hired, may be offered the option to acquire

the company's stock at a future date, then to resell it in the open market. The price the employee will have to pay (called the "strike price") will be a price the stock was selling for near the time the employee received the option. If it is below the market price when the employee's option "vests," it will be advantageous for the employee to cash out by exercising the option at the strike price, then reselling at the higher market price. (If the market price is lower than the strike price, the issue is moot.)

Stock options have been widely used in the technology sector, as a way to attract and hold scarce high-performance, technically credentialed employees. The idea is that the employee will have an incentive to work hard for the company so that the stock will rise. The usual practice of using a vesting period (before which the option does not apply) is intended to keep the employee not only working hard but also staying with company, despite blandishments from other companies.

What is "backdating" when it comes to stock options? Backdating means finding a date near the time the option is granted, so as to find the lowest value of the company's stock. For example, a new employee is given a stock option on March 15, 2000, at the beginning of her employment. The company's stock that day sells for $40, a high for this particular stock. Then bad news arrives, and the stock goes down to $30 a week later, March 22, after which it turns around and crawls back toward $40. Someone in the company pencils in an effective date on the stock option of March 22 (not March 15 after all). Why? That way, once the option vests, say, three years hence, any gain in the stock's value will be measured relative to a strike price of $30, not $40. Every share will thus be worth $10 more than if the agreement date were used.

Now we come to the accounting problem. The increase in value to the employee from backdating is also a cost to the company, although an almost invisible one on the books. As Warren Buffett and others have long contended, it should therefore be entered as an expense on the company's income statement—as a cost to the company of compensating the employee. The result of correctly entering it as an expense, of course, is to reduce the company's earnings (as always, the difference between revenues and expenses).

Still, the point is that backdating stock options is legal, as long as the expense is recorded by the company. Unfortunately, almost nobody who grants stock options bothers to mention the expense on the income state-

ment. That omission turns backdated stock options into accounting fraud. Nor was alleged ignorance of this technicality sufficient to keep a Silicon Valley CEO (of a company called Brocade) out of jail, perhaps because he used the device despite his email message to employees saying backdated stock options were illegal. But he also told one employee, "It's not illegal if you don't get caught."

Illegal backdating appears to have been a common practice that is now likely to be handled in a more realistic and transparent way. As such, it looks minor compared either to the practices of 2001-2002 or to the subprime financial crisis of 2007.

IX.

ACCOUNTING IN THE SUBPRIME MELTDOWN

"Why were [the banks] permitted to set up those off-balance-sheet entities that may or may not have had some formal relationship with the bank? They were not regulated and [banks] didn't hold an adequate amount of capital against them. Why did that happen after the experience of Enron?"

—Paul Volcker, Chairman of the Federal Reserve, 1979-1987, in testimony before the Joint Economic Committee, May 14, 2008

AT the time of this writing in mid-2008 the world's financial markets are struggling to work through a crisis of confidence centered on subprime mortgage-based securities. ("Subprime" means that the mortgage loans were extended to borrowers with poor credit histories—and hence less likely to be repaid.) It turned out that such securities could not withstand a downturn in house prices or a related increase in mortgage delinquencies. And by April 2008 house prices had fallen in all 20 of the largest U.S. markets, with a median decline from peak prices of 16 percent.

This concluding chapter touches upon the accounting dimensions of the subprime crisis, notably the use of off-balance-sheet deals by big banks to escape regulatory oversight. We can begin by noting that the financial crisis had three underlying sources. One was an overly expansive monetary policy in the years following September 11, 2001, which set the stage for a torrent of bad loans by financial institutions. A second and related factor was a collapse of lending standards for home mortgages after 2004. The third has earlier roots, traceable to financial innovations in the 1980s.

Too Much of a Good Thing: From Securitization to Liquidity Puts

During the 1980s individual home mortgages came to be combined in "securitized" packages that could then be issued as new bonds and sold to investors. Over time this process of securitizing mortgages of different quality (i.e., varying degrees of risk) grew more refined and more widespread, until it began to seem foolproof.

Eventually, a good idea (diversifying risk by bundling more or less similar

mortgages through securitization) got pushed beyond its reasonable limits. Mathematical models were invoked to make the case that bundling riskier mortgage-based assets with higher-rated assets in increasingly complex packages could give sustained high returns. With the aid of the bond-rating firms (and an accounting firm or two), bundles of mortgages with varying degrees of risk got sliced up into marketable "tranches" or shares, some of which in turn were re-bundled into new securities.

The various long-term, high-yield securities that resulted were typically financed from short-term funds borrowed at lower interest rates. The spread between the interest rates charged on the borrowed funds and the yields on the long-term bundled securities was known as the "carry" on the deal. The deal itself was part of the "carry trade." Viewed for a time as virtually a new stage of financial history, this version of the carry trade depended on two key assumptions: continuing availability of short-term funds and rising house prices. Both assumptions fell apart by mid-2007.

The securities themselves were known as Collateralized Debt Obligations (CDOs). They were typically packaged and sold by Structured Investment Vehicles (SIVs) or similar entities known as "conduits." SIVs were invented by big banks as places to hide debt, meaning to keep it off the banks' balance sheets. SIVs and conduits provided the banks with a back-door way to attain more leverage through borrowed money than the banking regulations allowed. As noted in an earlier chapter, in good times increased leverage raises earnings. But in bad times it can magnify losses.

Historically, SIVs came into being a generation ago when two emissaries from Citibank moved to London and set up a private shop there. The symmetry here is that Citigroup (the successor to Citibank) turned out to have ties to SIVs with assets of about $1.1 trillion in 2007, or fully half the value of the assets Citigroup carried on its own balance sheet at the end of that year. (David Reilly, "Look Under the Banks' Hoods," *The Wall Street Journal*, on-line edition, February 29, 2008.)

As things turned out, Citigroup retained a responsibility for the debt, even though it did not show up on the bank's balance sheet. Instead, the liability was an agreement by the bank to fund and support its SIVs. Technically, this type of agreement came to be known as a "liquidity put," meaning a guarantee by the bank to re-purchase (or "repo") the CDOs at par if their buyers wanted to unload them because of faltering returns.

In an example of how confusing such practices could get, Citigroup

found itself making a half-billion dollar loan in mid-October 2007 that it then immediately declared to be "non-performing," meaning a worthless asset. Top executives first stated optimistic readings of the company's earnings outlook, only to change their minds and announce a sharply weaker position a few days later. The bank had, in effect, "co-signed" to make a loan to a large London borrower. Then if other lenders opted out, Citigroup was committed to making the loan, regardless of its quality. Of course, for this commitment Citigroup had received a fat fee, without having to show any additional loans as assets on its balance sheet. When the other lenders did back out, Citigroup was left holding the bag. The loan was made, as required, but then was immediately written off as uncollectible.

The surprising lesson from this sudden reversal was that the people who ran Citigroup did not understand how vulnerable the bank was. The arrangements and liabilities proved mysterious to them, to their accountants, and, one might add, to Citigroup's then resident adviser on risk management, former Secretary of the Treasury Robert Rubin.

Easy Money, January 2002-July 2004

In retrospect, it appears that monetary policy remained too expansive for too long after the recession of 2001 and the 9/11 attacks. "Real" or inflation-adjusted interest rates hovered in the vicinity of 1 percent from the beginning of 2002 to mid-2004. Real interest rates are widely viewed as the true cost of borrowing money. Unlike nominal interest rates (the ones quoted in the newspaper), real interest rates take into account the rate of inflation. If inflation is high, for example, borrowers can repay their loans using cheaper dollars. In that case the real interest rate is much lower than the nominal one.

Whatever the logic of Fed policy for keeping real interest rates low in the wake of the dot-com crash and the 9/11 attacks, this easy-money policy appears to have been pursued for too long. For two-and-a-half years, more or less, so much liquidity was pumped into the American economy that the real cost of loans was kept far below the levels of the 1990s.

In turn, easy money and correspondingly low mortgage rates set the stage for the housing price bubble. House prices soared, consumers used their homes as piggy-banks (as the saying went) by taking out home equity loans and lines of credit, and mortgage originators could offer seemingly irresistible terms to borrowers.

Throwing Caution to the Wind: Countrywide, 2004-2007

Countrywide Financial was the nation's largest private mortgage lender on the eve of the subprime crisis, in mid-2007. The California-based mortgage firm's excesses between 2004 and 2007 reveal how competition for market share led mortgage originators to lose all sense of perspective—especially when house prices seemed only to go up. As itself one of the main casualties of the subprime meltdown it helped create, Countrywide would be sold for a song to Bank of America in 2008.

Apart from the specific tactics the company used, Countrywide was a prime player in the "originate-to-distribute" game. This approach cut the traditional link of accountability between the mortgage originator (such as a savings bank) and the borrower. Once originated (through the signing of the mortgage agreement), the mortgage could be quickly distributed (sold) to a third party, typically bundled with other mortgages in the process of securitization. In this model, therefore, the originator has little incentive to worry about whether the mortgage will continue to be paid off by the homebuyer. That becomes someone else's problem.

As to the tactics, under long-time CEO Angelo Mozilo, who had built the $200 billion company from scratch, Countrywide maintained a relentless campaign to increase market share in each of its several mortgage-related business components. As competition heated up in 2004, when interest rates bottomed out, Countrywide began aggressively promoting so-called "affordability loans."

These included interest-only mortgages, adjustable-rate mortgages (ARMs), and "reduced-documentation" mortgages (also known as Liars' Loans). The first required no repayment of principal for the mortgage's early years. The second, ARMs, offered lower initial mortgage interest rates, with higher rates to come later. The third, a classic subprime variant, made mortgages available to people with poor credit histories or employment records.

As to ARMs in particular, two variants show how dangerous the instruments were for many homebuyers. One version carried substantial prepayment penalties. So rather than pay off the mortgage early, when rates were low, borrowers were locked into eventual higher rates that would then have to be paid over, say, 10 years or more. (This lock-in feature made them highly attractive for re-sale to SIVs.)

The second is called a "pay-option" ARM, which leaves the timing of

payments up to the borrower. While this may work well for Wall Street tycoons getting big annual year-end bonuses, it was a trap for most other borrowers, because the unpaid interest got added to the mortgage, potentially increasing the debt. Once house prices stabilized and then started to decline, pay-option mortgages often exceeded the market value of the house, leaving borrowers (as the saying went) "under water."

Countrywide's reliance on these riskier mortgage loans grew rapidly in 2004 and after. According to a *New York Times* profile of the company, subprime lending went from 4.6 percent of all its loans in 2003 to 18 percent in 2004. Over the same one-year interval, ARMs shot up from 18 percent of all loans to 49 percent. Pay-option ARMs per se jumped from 6 percent in 2004 to 19 percent in 2005. (Gretchen Morgenson and Geraldine Fabrikant, "Countrywide's Chief Salesman and Defender," *The New York Times*, November 11, 2007.)

From then on, Countrywide and such counterparts as New Century Financial Corporation competed with one another to see who could make and then unload the most bad loans. (They did not describe the race in those terms.) There followed a variety of slipshod transactions. On the borrowers' side these included speculation by serial "flippers" who bet on ever-higher house prices using easily obtained and often inflated mortgages. An unholy triangle thus developed among originate-to-distribute mortgage brokers, overly compliant real-estate appraisers, and (in some cases) buyers who never intended to live in the houses they were buying.

But then house prices began to slow and even decline, initially in cities and regions that had had the biggest price increases earlier in the decade. By 2006, even as additional banks were still trying mightily to get in on the high returns generated by the subprime game, some local real-estate markets had already peaked.

Then in April 2007 the alarms began to sound. For one thing, two Bear-Stearns hedge funds heavily invested in subprime securities took evasive actions that would later get their managers indicted for deceiving investors. For another, New Century, the other giant California mortgage originator, declared bankruptcy.

What About the Auditors?

In the wake of New Century's bankruptcy, court-appointed investigator Michael J. Missal issued a 581-page report on the matter. As he put it in a

Reuters interview, "The predominant standard for loan quality was whether the loans New Century originated could be initially sold or securitized in the secondary market…[which] created a ticking time bomb that detonated in 2007." This refers, of course, to the breakdown in accountability inherent in the originate-to-distribute model.

Accountability or no, the debasement of mortgage-loan criteria would come back to haunt the originator. New Century held a meager $13 million in reserves against what turned out to be billions of dollars of liabilities for "repurchases." These were mortgage loans returned to the company by Wall Street securities firms because subprime borrowers (many with option ARM mortgages) were failing to make their required payments on time, or at all. At a crucial juncture, outside risk evaluators pointed out New Century's untenable perch. In response, New Century's creditors closed the spigot. The result: New Century's bankruptcy on April 2, 2007.

The Missal report accused the company's auditor, KPMG, of stretching the accounting rules for New Century. KPMG remained as one of the Big Four public accounting firms after Arthur Andersen went under in the aftermath of Enron. KPMG signed off on the woefully inadequate reserves the company held against the liabilities for repurchases. When the alarm sounded, it came from outsiders, not the auditor.

As with the bond rating firms (Moody's, S&P, and Fitch), the appearance was that KPMG was earning as much or more from consulting as it was from auditing firms per se. No wonder a partner of the firm would tell his own auditors, in e-mail cited by Missal, to lighten up with the audit because "we are at risk of being replaced."

This was not the first such criticism KPMG endured during the decade. In the years before 2000, Xerox engaged in deceptive accounting practices by booking multi-year leases of equipment as outright sales, thus overstating revenues by $3 billion and income by $1.5 billion. When this deception came to light, shareholders sued. KPMG, the auditor, was cited for complicity and has been assessed over $100 million in penalties.

From 2001 to 2004, mortgage giant Fannie Mae (FNMA) used "cookie jar" and other accounting gimmicks to smooth earnings and meet bonus-pay targets, according to the SEC. When FNMA's officers were then fired, their replacements sued KPMG, the auditor, as a party to the scam. As to its incentives, KPMG made over 80 percent of its $53 million in 1998-2003 fees from FNMA for *non-auditing* services.

In 2005 KPMG admitted to promoting tax fraud and agreed to pay penalties of $456 million. Its aggressive "loss-generating" schemes for high-income U.S. taxpayers had spawned $12 billion in bogus losses between 1996 and 2003, costing the U.S. Treasury an estimated $2.5 billion. The fraudulent tax-shelter gambits included dummy investments and artificial losses on currency swaps to the Cayman Islands.

Enron had Arthur Andersen as its auditor. New Century had KPMG. Did such missteps mean that KPMG would go the way of Arthur Andersen? Not necessarily. As one research article put it at the time, KPMG may be "Too Big to Fail," on antitrust grounds. In other words, the government was not likely to press for sanctions that would leave only a Big Three standing. Instead, enforcement was likely to focus on misbehaving individuals within the partnerships, not the larger firms themselves. This option seemed feasible in that the Big Four are more like loose agglomerations of local accounting firms around the world than integrated companies.

Write-Downs: Global Reach

By June 2008**,** write-downs on subprime-related assets approached $400 billion and were expected to go much higher, as in the IMF estimate of nearly $1 trillion. By write-downs, we mean admissions by the financial institutions themselves that assets they owned in the form of mortgage-backed securities had fallen in value. Why? The original mortgages had been written to people who for various reasons would stop making their payments, thereby making the downstream securities worth less—sometimes much less.

As an accounting matter, such write-downs were required under the Fair Value rule in the Financial Accounting Standards Board's Statement 157. This requires firms to recognize losses or gains in the assets on their balance sheet in a timely fashion. In a variation on the "mark-to-market" estimation methods Enron abused, companies are allowed to "guess" what possible price assets on their balance sheets might fetch when there is not currently an active market for the asset. Controversy centers on whether this gives banks too much leeway (making them too optimistic) or, conversely, whether the banks are forced to take write-downs too soon, and too sharply, when they might otherwise wait out the bad patch until asset prices rise.

In any case, at the level of individual banks, such write-downs added up to $230 billion in the 20 financial institutions that had taken the largest hits on their balance sheets by April 2008. Subprime pain, while largely origi-

nating in the U.S., had registered around the world. True, of the five firms with the largest write-downs four were American (the fifth, spectacularly, was Swiss, the Union Bank of Switzerland). But 12 of the 20 with the largest write-downs were foreign. For better or worse, financial markets had become more globalized than ever before.

What did the write-downs mean for the profitability (and indeed, for some firms, the viability) of the financial institutions in question?

The answer is less obvious than one might think. For simplicity, we will consider only U.S. firms, but the same logic extends to the other dozen as well. The lesson is that firms can take big hits on their balance sheets while still managing to register positive earnings. Examples are Wachovia, JPMorgan Chase, Morgan Stanley, and Bank of America. The reason: asset write-downs are a "charge" against earnings. If earnings are strong enough from operations, earnings (profit) can dominate the loss from write-downs, and the net effect can be positive.

On the other hand, for Bear Stearns, Washington Mutual, Merrill Lynch, and Citigroup, write-downs overpowered whatever positive earnings were generated by ongoing operations since January 2007.

By June of 2008, for Morgan Stanley and Citigroup write-downs after mid-2007 had erased 50 percent or more of all the profits earned over the prior three-and-one-half years. Indeed for Merrill Lynch the write-downs were half-again (153 percent) as large as the firm's combined earnings for the period from 2004 to mid-2007. (Louise Story, "Nearly Half of Wall Street Bank Profits Are Gone," *The New York Times*, June 16, 2008.)

Small wonder, then, that in a story posted June 24, 2008, Bloomberg.com predicted job losses in the financial sector would erase 175,000 highly paid positions worldwide, or more than double the layoffs of 83,000 that had already been announced since July 2007.

The Bond-Rating Agencies: Building a House of Cards

Then there were the regulatory failures. Financial regulation occurs not only through the Fed and the SEC (and other government entities), but also through private sector rule-makers such as the stock and commodity exchanges, and the bond rating agencies.

Many observers conclude that the leading bond rating agencies—Moody's, Standard & Poor's, and Fitch—were central players in the subprime meltdown. Because the mortgage-backed securities they rated were

so complex, everybody else relied upon the rating agencies for risk and pricing guidelines.

These agencies, which assign risk estimates to about 95 percent of bonds issued worldwide, are in hot water for having assigned AAA (in effect, the safest investment-grade) ratings to mortgage-backed securities, and then suddenly and belatedly downgrading many of them to junk status (the most risky).

This unseemly outcome was foreseen within the ratings agencies themselves, as an e-mail from December 2006 reveals. In a caustic SEC report, an anonymous ratings employee from one of the big three is quoted as follows: *"Let's hope we are all wealthy and retired by the time this house of cards falters."* (Michael M. Grynbaum, "Study Finds Flawed Practices at Ratings Firms," The New York *Times*, July 9, 2008, emphasis added.) For that outcome, retirement within perhaps eight months would have been necessary, since the subprime meltdown began in earnest in August 2007.

Investors—the buyers of the securities—were left to bear much of the burden. Beyond that, big banks fired CEOs and wrote down their own holdings by hundreds of billions of dollars.

Were investors at fault for not seeing the handwriting on the wall? Yes, to the extent that they believed the rating agencies' sunny risk evaluations. What is still being sorted out is the way the rating agencies misled not just investors but even the big banks themselves in this high-stakes shell game.

While top officials at the agencies blame inadequate information and faulty mathematical models, it is also clear that market incentives led to over-optimistic ratings and subsequent foot-dragging in the face of new information.

The raters are paid by the issuers of securities (the borrowers), not by investors (the lenders). Moreover, the bond rating agencies not only assigned risk to the bundled (or "securitized") issues of subprime mortgages—the ones that turned sour once house prices began to fall—they were also active (and well-paid) early-stage participants in the packaging of such issues into more complex collateralized debt obligations.

The rating agencies added to their portfolio of services, stepping in to show CDO originators how to attain the highest bond rating for a given level of risk. As the rating agencies became more like investment banks, charging additional fees for what amounted to consulting services, the ratings they

assigned became marketing tools.

Not surprisingly, along with this new marketing role came a debasement of the ratings. As Moody's admitted, the 2001-2006 default rates for its lowest investment-grade CDOs were at least 8 times as high as for comparably rated corporate bonds. And that was before financial markets seized up in the latter half of 2007.

No wonder there is now talk of more regulation of the raters, as signaled by the beginning of the SEC's formal oversight in September 2007. Still, in an informal or "voluntary" set of arrangements, the SEC had long acted as a guarantor of the cozy, monopolistic arrangements the rating agencies enjoyed. In 1975 the SEC installed a certification process to anoint quasi-official rating agencies. These were dubbed Nationally Recognized Statistical Rating Organizations or NRSROs (also known by critics as "No Room—Standing Room Only"). In recent years today's big three agencies were the only such accredited raters. Their ratings became legally required for many bond issuers. And all three were paid by the issuers of the securities.

In the backwash of the subprime crisis, the SEC finally certified a ratings firm that is paid by investors—not bond issuers. On December 21, 2007, the SEC declared Egan-Jones Ratings of Haverford, Pennsylvania, an NRSRO, following petitions by Egan-Jones for the better part of a decade.

One way to sum up the role the rating agencies played in the meltdown is to note the contrast between the subprime and Enron episodes. In Enron, the auditors, and especially Arthur Andersen, received enormous criticism. But despite auditor KPMG's missteps with New Century in 2007, the auditors were seldom cited as sources of the subprime meltdown. Instead, many observers singled out the bond rating agencies as central to the problem—and perhaps also liable for investor lawsuits.

Where Were the Bank Regulators?

In testimony before Congress SEC Chair Christopher Cox contended that the Securities and Exchange Commission was on top of the Bear Stearns problem at every step of the way toward Bear's takeover in early 2008 by JPMorgan Chase. At no point, Cox said, did the investment bank's reserves fall below what the regulations required, meaning that there was never an occasion for the SEC to intervene.

As to Bear's demise, Cox argued that when there is a silent run on a bank,

no amount of reserves will suffice. The rebuttal, of course, is that when reserves are perceived as truly adequate there will be no run on the bank.

In the event, the Fed broke new ground and intervened to manage a bailout for Bear Stearns. This took the form of Bear's sale to JP Morgan Chase on the weekend before St. Patrick's Day 2008. With this move the Fed crossed over into uncharted territory. Before this intervention, in other words, the Fed was committed only to supporting commercial banks (not investment banks) in their hour of need.

Why did the Fed choose to intervene to save a financial institution that seemingly could have failed with no risk to American taxpayers? The answer can be found in Fed meeting minutes released later. The Fed feared a Bear Stearns bankruptcy would set off a "contagion," igniting a chain of contracts known as credit default swaps the system could not deliver on. Credit default swaps can be thought of as endlessly intertwined insurance policies. The Fed evidently feared that one falling domino could trigger a series of defaults on such contracts and a cascade of bank failures in the U.S. and abroad.

What seems clear is that regulators, both public and private, failed to monitor and control the U.S. financial system's excesses. The subprime mortgage debacle seemed to indicate a system-wide regulatory failure, raising the likelihood of bank bailouts at taxpayers' expense.

Do Regulators Contribute to Financial Crises?

What accounts for this apparent breakdown in supervision? In an article presented at Cambridge University at a conference on financial regulation, Professor Edward J. Kane of Boston College linked weak regulation in the U.S. to financial globalization.

Kane suggests that U.S. regulators turned a blind eye to the dramatic deterioration in recent lending practices because they feared foreign "regulatory competition." The premise is that financial institutions can to some extent shop around for the regulatory regime that would benefit them most, in part by setting up offshore affiliates in more permissive locations.

In this view, two reinforcing regulatory failures paved the way to the subprime meltdown. First, regulators put too much trust in the risk evaluations assigned by the bond rating agencies—Moody's, S&P, and Fitch. In practice, such "insider ratings" proved much too sunny, partly because the raters themselves were in on the gold rush, while it lasted.

Second, as already noted, the risky new securities that banks sponsored became, in effect, invisible. Once banks and affiliated SIVs securitized subprime mortgages and bundled them into collateralized debt obligations, the banks were allowed to park such CDOs in the SIVs off the banks' balance sheets and out of sight of the regulators. Yet the banks remained responsible for the CDOs. In short, some large banks had incurred much more risk than met the eye.

Was all this a one-time derailment or a recurring episode in the history of financial regulation? Kane makes a strong case for the latter view. One of his tables, simplified here, posits five stages in a common scenario of financial crises in which regulation, and government-subsidized lending to favored political sectors, play a causal role.

New Rules for Banks?

One likely outcome of the subprime meltdown is an overhaul of bank regulation. In particular, we can expect a more uniform treatment of investment banks (think Bear Stearns, before it was dissolved) and commercial banks (think Bank of America).

Five Stages of a Regulation-Induced Banking Crisis

1) Loss exposures increase at highly leveraged banks, who then seek safety-net subsidies tied to government-promoted forms of lending (e.g., U.S. housing).
2) When problems upset financial markets, banks and regulators allow losses to be hidden by resorting to accounting trickery on bank balance sheets.
3) Stress is placed on traditional safety-net support mechanisms, leading to calls for public intervention and bailouts.
4) Public bailouts leave "zombie banks" (as in Japan) and no real solutions.
5) Or the mess gets cleaned up, through bank closures and new banking rules.

Source: Adapted from Edward J. Kane, "Regulation and Supervision: An Ethical Perspective," April 2008, Figure One.

Where should the new rule-book start? Not by overturning deregulation measures that allowed interstate branching and hence increased competition, or those that ended state usury laws capping interest rates on loans. By general consensus, these reforms have worked fairly well.

Instead, what may need a new look is the 1999 repeal of the Glass-Steagall Act. Enacted in 1933 as a reaction to shady stock manipulation in the Roaring Twenties, Glass-Steagall mandated a separation of lending and deal-making. The first function was to be handled by commercial banks, the second by investment banks—and never the twain should meet. As might be expected, by the mid-1980s, a half-century later, this separation had begun to fray at the edges.

By 1987, in a 3-2 vote, the Federal Reserve Board gave its sanction to ending the Glass-Steagall divide. As it happened, one of the two dissenters was Paul Volcker, then Fed Chair. In his view, Glass-Steagall still served a useful function. (Indeed, after stepping down later that year, he would eventually be appointed to clean up the savings-and-loan mess of the late 1980s, itself a result in part of a botched approach to deregulation.)

In 1999, after the urge-to-merge CEOs of Citibank and the Travelers Insurance company had personally lobbied President Clinton, Glass-Steagall was formally, once-and-for-all repealed. This opened the door to "full-service" or "smorgasbord" or "one-stop" universal banks.

The rationale? In the new banking environment at the Millennium, three safeguards would supposedly protect the public from the abuses that had led to the original act. (1) Under then chief Arthur Leavitt, the SEC had become a tiger with teeth, capable of patrolling the financial industry. (2) Investors (meaning largely institutional investors) had become highly sophisticated. (3) The bond rating agencies could serve the public interest by evaluating and publicizing risks associated with corporate and (as it turned out!) mortgage-backed securities.

In retrospect, of course, none of these three safeguards turned out to insulate investors from the dot-com collapse of 2000—any more than they prevented the subprime crisis. However weak the three slender reeds now look, another problem with repeal was cited at the time by *The Economist* magazine, a bastion of free-market thinking since at least 1850. As the magazine pointed out in an unsigned opinion piece, "Killing Glass-Steagall," in its issue of October 30, 1999,

> Why, if politicians are at last to do something about the Depression-era rules that govern financial firms, have they not tried to update America's supervisory structure at the same time? It is hopelessly fragmented and costly. …History is liberally dotted with crises caused by liberalizing finance without improving supervision.

It appears that this missing link from 1999 is likely to re-surface in today's search for new rules for banks. In practice, post-Glass-Steagall banks have tended, in spite of some diversification, to retain their identities as primarily investment or primarily commercial banks.

If the Fed is going to bail out investment banks (not just commercial banks), then investment banks will probably be required to be as transparent and accountable as commercial banks. On the accounting side, both will probably be required to show formerly hidden *off-balance-sheet* assets and liabilities on their balance sheets and to spell out their risk exposure more clearly than in the past.

To that extent, the repeal of Glass-Steagall would now come full circle, and "universal" banks of whatever stripe would be subject to uniform rules.

GLOSSARY

Acid-test ratio (also called *quick ratio*): the ratio of cash plus temporary investments plus receivables to total current liabilities.

Account receivable: a balance owed to a business by a customer as the result of sales of merchandise or services on credit.

Accounting period: the period covered by a set of financial statements, usually a quarter or a year.

Accrual: the recognition of a future cash receipt or payment. On the balance sheet, accruals denote liabilities for deferred payment of expenses.

Additional paid-in capital (also called *capital surplus* and *paid-in capital*): the cumulative proceeds of a corporation's offerings of stock at prices in excess of par value.

Adjustable rate mortgage (ARM): a mortgage in which the introductory interest rate can be changed by the lender over time as market interest rates vary, or in which initial lower interest rates are contractually scheduled to reset later at a higher rate. The "adjustment period" refers to the interval between potential interest rate adjustments. One variant is a pay-option ARM (or "option ARM"), which requires no payments at all in the early months or years of a mortgage.

Adjusted operating cash flow: the sum of cash provided by operations, cash payments for income taxes, and cash payments for net interest.

Allocation: the process of systematically apportioning a cash outlay or receipt to the expenses or revenues of several accounting periods.

Allowance for doubtful accounts (also called *allowance*): a valuation account that contains an estimate of the portion of accounts receivable that is uncollectible.

Amortization: the process of allocating a revenue, expense, gain, or loss

over several accounting periods by recording the transaction as an asset or liability as appropriate and then writing down the value of the asset or liability systematically in subsequent accounting periods, recognizing the amount of the write-down as an expense (in the case of an asset) or revenue (in the case of a liability).

Asset: a physical, technical, or financial resource owned by an enterprise. The FASB has defined assets as follows:

Assets are probable future economic benefits obtained or controlled by a particular entity as a result of past transactions or events.

An asset has three essential characteristics: (a) it embodies a probable future benefit that involves a capacity, singly or in combination with other assets, to contribute directly or indirectly to future net cash inflows, (b) a particular entity can obtain the benefit and control others' access to it, and (c) the transaction or other event giving rise to the entity's right to or control of the benefit has already occurred. Assets commonly have other features that help identify them — for example, assets may be acquired at a cost and they may be tangible, exchangeable, or legally enforceable. However, those features are not essential characteristics of assets. Their absence, by itself, is not sufficient to preclude an item's qualifying as an asset. That is, assets may be acquired without cost, they may be intangible, and although not exchangeable they may be usable by the entity in producing or distributing other goods or services. Similarly, although the ability of an entity to obtain benefit from an asset and to control others' access to it generally rests on a foundation of legal rights, legal enforceability of a claim to the benefit is not a prerequisite for a benefit to qualify as an asset if the entity has the ability to obtain and control the benefit in other ways.

Asset replacement ratio: cash provided by operations less dividend payments, stated as a percentage of the average investment in assets. This ratio is a measure of the rate at which an enterprise can replace its stock of assets without relying on outside financing.

Audit: an examination of an enterprise's accounting records and procedures to determine whether the enterprise's financial statements conform to Generally Accepted Accounting Principles (GAAP). The auditors must be independent public accountants who proceed in accordance with generally

accepted auditing standards.

Average cost method: a method of valuing the units remaining in an inventory at the end of an accounting period. Average cost is the total cost of purchases during the period plus the value of the beginning inventory divided by the sum of the number of units purchased and the number of units in the beginning inventory.

Balance sheet (also called *statement of financial condition*, *statement of condition*, *statement of financial position*, and *statement of assets and liabilities*): a financial statement that lists the values of the assets, liabilities, and equity or net assets of an enterprise on a particular date.

Bond: an interest-bearing long-term debt security.

Bond-rating agencies: Moody's, Standard and Poor's, and the smaller Fitch are the three biggest rating agencies (deemed Nationally Recognized Statistical Rating Organizations or NRSROs), whose job it is to assign alphabetical (AAA, BBB, etc.) risk ratings to municipal, corporate, or other debt issues. In the run-up to the subprime crisis, the rating agencies were later found to have compromised their methods and misled the investing public, in particular by rating risky CDOs as AAA or highest quality. The big three rating agencies are paid by the debt issuer, not the investor, which creates the appearance of a conflict of interest. A smaller NSRSO (only recognized in December 2007) is Egan-Jones, which is paid by investors, not issuers of debt.

Book value (also called *capital*, *equity*, and *net worth*): the difference between a business enterprise's total assets and its total liabilities. Book value is the residual interest that the owners of a business hold in the assets of the business after its liabilities have been settled.

Capital: this word is used in many different ways. In financial statements, it generally is synonymous with *book value*, *equity*, and *net worth*.

Capital lease (also called *financial lease*): a rental agreement that includes most of the features of outright ownership. A capital lease is an alterna-

tive to cash purchase and to borrowing as a means of financing the use of equipment.

Capital maintenance: investments made to maintain an enterprise's existing scale of operations. Depending on the context, capital maintenance can apply to both the physical and the financial size of an enterprise's capital stock.

Capital surplus (also called *additional paid-in capital* and *paid-in capital*): the cumulative proceeds of a corporation's offerings of stock at prices in excess of par value.

Capitalization ratio: long-term liabilities divided by the sum of long-term liabilities and total equity. There are a multitude of possible adjustments to this basic formula.

Carrying value: the balance of an account adjusted for a related valuation account.

Cash: currency and checking-account balances. In common usage, cash includes cash equivalents, which are highly liquid short-term debt securities such as Treasury bills and commercial paper.

Cash fixed charges coverage (see also *fixed charges ratio*): the ratio of adjusted operating cash flow to fixed charges. This ratio measures the margin by which an enterprise's operations cover interest payments and repayments of long-term debt.

Cash flow: a payment or receipt of cash.

Cash flow adequacy: the degree to which a business's cash flows from operations can fund fixed assets spending, inventory additions, and dividends, in that order. If cash flows are inadequate, the business will have to rely on outside financing to conduct some of these activities.

Cash flow adequacy ratio: the ratio of cash provided by operations plus inventory additions to fixed assets spending plus inventory additions plus

dividend payments.

Cash flow from financing: a transaction involving both a cash receipt or payment and a change in equity or in long-term liabilities, including the current portion of long-term debt. Cash flows from financing exclude operating cash flows, which produce changes in retained earnings, an equity account.

Cash flow from investments: a transaction involving both a cash receipt or payment and a change in a non-current asset.

Cash flow from operations: a cash flow involving a change in a current operating asset or liability, a revenue, expense, gain or loss, or both.

Cash flow per share: cash provided by operations divided by the weighted average number of common shares outstanding.

Cash operating margin: cash provided by operations as a percentage of net sales.

Cash reinvestment ratio: depreciation and amortization plus proceeds from sales of fixed assets as a percentage of fixed assets spending. This ratio is a measure of the portion of fixed assets spending devoted to capital maintenance.

Cash return on assets: the ratio of adjusted operating cash flow to the average investment in assets.

CDO (collateralized debt obligation): complex securities that bundle or package specific types of debt, such as mortgage or credit-card debt, and then are sliced up into different "tranches" or shares to be sold as bonds to investors. Such tranches carry different maturities, ratings of risk, and yields. CDOs quintupled in volume between 2003 and 2006, when they reached $500 billion.

Clean opinion (also called *unqualified opinion*): a report of independent accountants affirming that an enterprise's financial statements are fairly

presented in all material respects, and in accordance with GAAP.

Commitment: Commitments are agreements, usually formal contracts, to transact business in the future. Examples of commitments include purchase orders, long-term purchase and supply contracts, lines of credit, and employment contracts.

Common stock: the class of stock created when a business incorporates. Owners of common stock have the lowest-priority claim on a corporation's assets in a liquidation proceeding. A corporation may not pay dividends on common stock until it pays dividends on preferred stock, if any.

Comprehensive income: the sum of revenues, expenses, gains, and losses during an accounting period.

Conduits: Like SIVs, conduits borrow short-term by issuing commercial paper and using the proceeds to issue longer-termed securities at higher rates of interest. Unlike SIVs, conduits typically are restricted in raising funds to short-term notes.

Consolidation: the process of combining the accounting records of an enterprise and its subsidiaries to produce a single set of financial statements. Consolidation involves adding together comparable account balances of a parent and its subsidiaries and then netting out the effects of transactions within the organization as a whole.

Contingent liability: losses or obligations that may result from past events or transactions, pending some future outcome or decision. Examples of contingent liabilities include loan guarantees and pending litigation.

Contra-asset account: a valuation account used to adjust the carrying value of an asset.

Corporation: a business that raises funds by issuing shares certifying a proportional ownership stake in some or all of the business's equity.

Cost of goods sold (sometimes called *cost of products sold*): purchasing

and production expenses attributable to the merchandise sold during an accounting period. Technically, the cost of goods sold should include depreciation of production equipment, although in practice such depreciation often is listed separately.

Cost principle: an accounting rule that requires enterprises to record acquisitions of assets at cost.

Credit default swap (CDS): a contract to protect lenders from the possibility of a default by a borrower. A CDS is one form of derivative, meaning that its value depends on (derives from) the value of another asset. A CDS is typically sold by a third party (not the borrower or lender, in simplest terms) and can be understood as an insurance contract or "bet" on the likelihood of a borrower's default.

Cumulative effect of changes in accounting principles: when an enterprise changes the set of accounting principles that it uses, it must compute what the earnings of previous periods would have been under the new set of principles. The enterprise then must add the cumulative differences between reported earnings and recomputed earnings to earnings for the current period. This amount is the cumulative effect of changes in accounting principles.

Current: expected to be liquidated or settled within 1 year or the average duration of one operating cycle, whichever is longer.

Current ratio: current assets divided by current liabilities. This ratio was once a primary indicator of solvency.

Debt-equity ratio: total liabilities divided by total equity. There are a multitude of possible adjustments to this basic formula.

Debt ratio: total liabilities divided by total assets. There are a multitude of possible adjustments to this basic formula.

Debt refinancing ratio: the ratio of reduction of debt to issuance of debt. If this ratio is below 1, an enterprise is increasing its leverage. If the ratio is above 1, it is reducing its debt burden. The ratio measures an enterprise's

reliance on debt as a source of financing.

Deferral: the process of recording cash flows during the current period as assets and liabilities to be recognized as expenses and revenues in future periods.

Deferred charges: costs that an enterprise incurs that it expects to benefit its operations in more than one accounting period. Examples include moving costs and reorganization costs. An enterprise amortizes a deferred charge over the expected duration of the effect of the transaction that incurred the charge.

Deferred income taxes: a liability that accrues as a business recognizes income or gains for financial reporting purposes but not for tax purposes. The business recognizes the taxes due later as a current expense. Some businesses also maintain deferred income-tax accounts on the asset side of the balance sheet. These accounts accumulate payments of tax due immediately on income or gains that a business defers for financial reporting purposes.

Deficit: in a corporation, negative retained earnings. In partnerships and sole proprietorships, which do not make a distinction between retained earnings and paid-in capital, a deficit is simply negative equity. Similarly, a deficit in a nonprofit enterprise denotes negative net assets.

Depletion: the amortization of the costs of acquiring natural resources.

Depreciation: the amortization of the costs of acquiring buildings, plant, equipment, and other fixed assets.

Dilution: the reduction in the interests of a corporation's existing stockholders due to the issuance of additional common stock at disadvantageous terms.

Direct method: the computation of net cash flows from operations by taking the net total of a list of operating cash inflows and outflows.

Discontinued operations: divisions, subsidiaries, or entire business lines

that an enterprise has sold or liquidated or plans to sell or liquidate.

Discounting: (1) the sale of receivables to third parties before maturity, usually for less than face value; (2) reducing the value of a price or payment.

Dividend yield: the ratio of a corporation's dividend per share to its market price per share.

Earnings: at its broadest, the sum of revenues, expenses, gains, and losses for an accounting period. There are many different ways to measure earnings, depending on which items are included.

Earnings from operations (also called *income from operations* and *operating earnings*): revenues from an enterprise's principal activities (operating revenues) net of expenses attributable to those activities (operating expenses). This measure usually excludes the portion of the provision for income taxes attributable to the enterprise's principal activities.

Earnings multiple (also called *price-earnings ratio*, *P-E ratio*, *price-earnings multiple*, *multiple*, and *times earnings*): market price divided by earnings per common share before adjustment for extraordinary items. Estimated future per-share earnings often are used in this ratio.

Earnings per share (EPS): more accurately called earnings per *common* share, this is earnings less preferred dividend requirements all divided by the weighted average number of common shares outstanding during the accounting period. When a corporation's capital structure is such that current common shareholders risk more than a 3 percent dilution of their interests, the corporation must present *primary* and *fully diluted* EPS in its audited financial statements. These measures account for the potential dilution. Fully diluted EPS is the more conservative measure.

Economic entity: an organization that controls resources or incurs obligations, or both. Economic entities include for-profit enterprises (businesses), nonprofit enterprises, governments, and households.

Efficiency: the degree to which a business can minimize the cost of exist-

ing operations by maximizing the use of resources.

Enterprise: a business or a nonprofit organization.

Equity (also called *book value*, *capital*, and *net worth*): the difference between a business enterprise's total assets and its total liabilities. Equity is the residual interest that the owners of a business hold in the assets of the business after its liabilities have been settled.

Expense: strictly speaking, a cash outlay attributable to an enterprise's principal activities. The cash outlay need not occur in the same accounting period in which the expense is recognized. In common usage, many losses are labeled expenses and some expenses are labeled losses.

Extraordinary item: a gain or loss that is material, unusual, and not expected to recur in the foreseeable future. Extraordinary items often are disaster-related.

Extras: noncash distributions to a corporation's shareholders, including spin-offs, warrants, rights, and stock dividends.

Financial Accounting Standards Board (FASB): an independent rule-making organization for the accounting profession.

Financial lease (also called *capital lease*): a rental agreement that includes most of the features of outright ownership. A financial lease is an alternative to cash purchase and to borrowing as a means of financing the use of equipment.

Financial leverage index: the ratio of return on equity to return on assets. When it exceeds 1, this ratio indicates a business's effective use of leverage.

Financial statement: a summary report on the financial operating results of an enterprise (the changes in its accounts during a given period) or on its financial position (the end-of-period balances of its accounts).

First-in, first-out (FIFO) method: a method of valuing the units remaining in an inventory at the end of an accounting period. The unit prices of the most recent purchases are applied to units remaining in inventory.

Fixed charges ratio (see also *cash fixed charges coverage*): the ratio of pretax operating earnings to the sum of net interest expense and principal repayment requirements. This ratio is a conservative measure of long-term solvency.

Fixed assets: properties, plant, equipment, and natural resources.

Flexibility: the degree to which a business can minimize the cost of expanding its operations by keeping resources in reserve.

Foreign currency translation adjustment: the accumulation of discrepancies arising from the consolidation of the financial statements of foreign subsidiaries. The foreign currency translation adjustment appears in the equity or net assets section of the parent enterprise's balance sheet. The discrepancies arise because equity accounts are translated at different exchange rates than those used for asset and liability accounts.

Free cash flow: this phrase is used to describe many different quantities. In this book, it is the margin by which the sum of inventory additions and cash provided by operations exceeds fixed assets spending plus inventory additions plus dividends. The notion behind any formula for free cash flow is to determine the amount of cash that a business has at its discretion after covering certain important nonoperating items, such as fixed assets spending. Two important uses for this residual cash are repayment of debt and investments in affiliates.

Fund: a subset of accounts in the books of a nonprofit enterprise. A fund consists of assets and liabilities used for a specific purpose (*e.g.*, current operations, buildings, equipment, endowment, etc.) and the resulting net assets.

Fund balances: a synonym for the net assets of a nonprofit enterprise.

funds statement

Funds statement (also called *statement of cash flows*, *statement of changes in financial position*, and *statement of sources and applications of funds*, or *source & app*): a financial statement that reconciles an enterprise's beginning and ending cash balances for a given accounting period by listing the various sources and uses of cash.

Gain: a cash receipt not attributable to an enterprise's principal activities and not a donation to or investment in the enterprise. The cash receipt need not occur in the same period in which the gain is recognized. In common usage, some gains are labeled revenues.

Generally Accepted Accounting Principles (GAAP): the set of rules that govern accounting practices in the United States.

Going-concern assumption: an accounting principle that requires accountants to value transactions on the assumption that an enterprise will continue to operate, unless there is specific evidence to the contrary. This assumption is a major justification for recording asset values at cost.

Goodwill: the excess of the purchase price of an acquisition over the fair market value of its net identifiable assets. Goodwill represents payment in recognition of the acquisition's above-average earnings potential.

Gross profit margin: gross profit on sales as a percentage of net sales.

Gross profit on sales: net sales less the cost of goods sold.

Horizontal analysis: the intertemporal comparison of the line items in an enterprise's financial statements and of key ratios computed from those statements.

Hurdle rate of return: the rate of return necessary to make an investment worthwhile. This rate usually equals the cost of financing the investment.

Identifiable assets: assets other than goodwill.

Income from operations (also called *earnings from operations* and *oper-*

ating earnings): revenues from an enterprise's principal activities (operating revenues) net of expenses attributable to those activities (operating expenses). This measure usually excludes the portion of the provision for income taxes attributable to the enterprise's principal activities.

Income statement (also called *P&L*, *results of operations*, *statement of earnings*, *statement of income*, *statement of operations*, and *statement of profit and loss*): a financial statement that lists an enterprise's revenues, expenses, gains, and losses for an accounting period and the total of those items. The total for a business enterprise is called earnings or net income, and the total for a nonprofit organization is called the change in net assets or the change in fund balances.

Indirect method: the computation of net cash flows from operations by adding noncash expenses and increases in current liabilities to net income, and subtracting noncash revenues and increases in current assets.

Interest coverage ratio (also called *times interest earned*): the ratio of pretax operating earnings to net interest expense. This ratio measures a business's long-term solvency.

Investment in assets: total assets plus accumulated depreciation less current operating liabilities (current liabilities except dividends payable, notes payable, and the current portion of long-term debt).

Last-in, first-out (LIFO) method: a method of valuing the units remaining in an inventory at the end of an accounting period. The unit prices of the beginning inventory and the earliest purchases in the period are applied to units remaining in inventory.

Leverage: long-term borrowing. A lever is a device that allows the operator to move disproportionately large objects. Leverage allows equity owners to control a disproportionately large amount of assets.

Liability: a nonownership claim on a portion of the assets of an enterprise. The FASB has defined liabilities as follows:

Liabilities are probable future sacrifices of economic benefits arising from

present obligations of a particular entity to transfer assets or provide services to other entities in the future as a result of past transactions or events.

A liability has three essential characteristics: (a) it embodies a present duty or responsibility to one or more other entities that entails settlement by probable future transfer or use of assets at a specified or determinable date, on occurrence of a specified event, or on demand, (b) the duty or responsibility obligates a particular entity, leaving it little or no discretion to avoid the future sacrifice, and (c) the transaction or other event obligating the entity has already happened. Liabilities commonly have other features that help identify them — for example, most liabilities require the obligated entity to pay cash to one or more identified other entities and are legally enforceable. However, those features are not essential characteristics of liabilities. Their absence, by itself, is not sufficient to preclude an item's qualifying as a liability. That is, liabilities may not require an entity to pay cash but to convey other assets, to provide or stand ready to provide services, or to use assets. And the identity of the recipient need not be known to the obligated entity before the time of settlement. Similarly, although most liabilities rest generally on a foundation of legal rights and duties, existence of a legally enforceable claim is not a prerequisite for an obligation to qualify as a liability if for other reasons the entity has the duty or responsibility to pay cash, to transfer other assets, or to provide services to another entity.*

Liquidate: to convert to cash.

Liquidity: the ease with which an asset can be converted to cash. By definition, cash is perfectly liquid. The amount of time that the conversion to cash takes is the most common measure of liquidity, although the cost of conversion often is a consideration.

Liquidity put: An agreement between, for example, a bank and its affiliated structured investment vehicles (SIVs) or conduits. It obligates the bank to repurchase (or "repo") securities such as CDOs in the event that the buyer returned the CDO to the SIV for failure to yield promised yields, such as

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* Financial Accounting Standards Board of the Financial Accounting Foundation, "Statement of Financial Accounting Concepts No. 6: Elements of Financial Statements," *Financial Accounting Series* 17 (December 1985), p. 13.

when mortgages become delinquent and mortgage-based securities then fail to deliver promised yields. During the subprime crisis of 2007 and 2008, it was sometimes said that big banks moved risk out the front door (by parking securities off the balance sheet with affiliated SIVs), only to have the risk eventually show up at the back door, when the SIVs needed the banks to honor the repurchase agreements.

Long-term: noncurrent, *i.e.*, not expected to be liquidated or settled within 1 year or one operating cycle, whichever is longer. This term is applied to liabilities much more often than to assets.

Loss: a cash payment not attributable to an enterprise's principal activities and not a payment to owners. The cash payment need not occur in the same period in which the loss is recognized. In common usage, many losses are labeled expenses and some expenses are labeled losses.

Lower of cost or market rule: an accounting rule that requires enterprises to carry assets at current market values when their market values fall below original cost.

Matching principle: a generally accepted accounting principle that requires enterprises to match the revenues generated during an accounting period with the expenses incurred to generate those revenues by recognizing expenses accordingly.

Material uncertainty: an unresolved matter that, when resolved, has some probability of making a significant impact on an enterprise's financial statements.

Minority interest: the share of the net assets of a majority-owned subsidiary that the parent enterprise does not own. Minority interest appears as a liability and as a deduction from earnings in the accounts of a parent enterprise.

Multiple (also called *price-earnings ratio*, *P-E ratio*, *price-earnings multiple*, *earnings multiple*, and *times earnings*): market price divided by earnings per common share before adjustment for extraordinary items.

Estimated future per-share earnings often are used in this ratio.

Multiple-step income statement: an income statement that includes a computation of gross profit (step 1) followed by a computation of earnings (step 2).

Net assets: the difference between a nonprofit enterprise's total assets and its total liabilities. Net assets are the residual assets of a nonprofit that remain after its liabilities have been settled.

Net earnings (also called *net income*): revenues and gains for an accounting period net of expenses and losses.

Net identifiable assets: total assets less the sum of total liabilities and goodwill.

Net income: (also called *net earnings*): revenues and gains for an accounting period net of expenses and losses.

Net loss: negative net earnings.

Net realizable value: the market value of an asset less anticipated selling expenses.

Net sales: total sales revenues less allowances for discounts and returned merchandise.

Net worth: the difference between an enterprise's total assets and its total liabilities. In a business context, net worth is synonymous with *book value*, *capital*, and *equity*. In a nonprofit context, net worth is synonymous with *net assets*.

Noncurrent: not expected to be liquidated or settled within 1 year or one operating cycle, whichever is longer.

Note: a written promise to pay a debt. Notes often bear interest.

Off-balance-sheet financing: the use of sources of nonequity financing that do not appear as liabilities in an enterprise's accounts.

Operating cycle: in a manufacturing or merchandising company, the period comprising the production or purchase of goods, the sale of goods on account, and the conversion of accounts receivable to cash.

Operating earnings (also called *earnings from operations* and *income from operations*): revenues from an enterprise's principal activities (operating revenues) net of expenses attributable to those activities (operating expenses). This measure usually excludes the portion of the provision for income taxes attributable to the enterprise's principal activities.

Operating lease: a rental agreement that includes few of the features of outright ownership.

Operating profit margin (also called *operating margin*): pretax earnings from operations as a percentage of net sales.

Operating working capital: current operating assets (current assets except loans receivable from officers) less current operating liabilities (current liabilities except dividends payable, notes payable, and the current portion of long-term debt).

Originate-to-distribute mortgage model: in contrast to the traditional model in which a savings or commercial bank evaluates the credit-worthiness of the prospective homebuyer and then holds the mortgage until its maturity, in the originate-to-distribute model, the mortgage originator writes up the mortgage contract, then, after taking up-front origination fees, sells (distributes) the mortgage to a third party, typically a processing service, who will then receive the actual mortgage payments. As a result of this sequence, mortgage originators are less likely to concern themselves with whether the borrower will be able to make the mortgage payments. This was the model used in making a sizable share of the subprime mortgages from 2004 on.

Other assets: a balance-sheet item that usually includes intangible assets

such as copyrights, patents, trademarks and other intellectual property rights. Other assets sometimes includes deferred charges if they are not listed separately.

Overtrading: excessive turnover of an asset, which can restrict sales unnecessarily.

P&L (also called *income statement*, *results of operations*, *statement of earnings*, *statement of income*, *statement of operations*, and *statement of profit and loss*): a financial statement that lists an enterprise's revenues, expenses, gains, and losses for an accounting period and the total of those items. The total for a business enterprise is called earnings or net income, and the total for a nonprofit organization is called the change in net assets or the change in fund balances.

Paid-in capital (also called *capital surplus* and *additional paid-in capital*): the cumulative proceeds of a corporation's offerings of stock at prices in excess of par value.

Parent enterprise: an enterprise that owns the majority of the equity in a business.

Partnership: a form of business organization in which the ownership of the equity is allocated by an agreement among the principals in the business, who are called partners.

Par value (also called *stated value*): the legal minimum book value of a class of a corporation's stock. A corporation's directors cannot declare a dividend that would reduce the total book value of equity below the total par value of the corporation's stock. Some states do not require a corporation to establish a par value for its stock.

Payable: a liability for the amount of a credit account, a note, or an accrued expense.

Pay-option adjustable rate mortgage (option ARM): see Adjustable rate mortgage.

Preferred stock: classes of stock that take priority over common stock in liquidation proceedings. Preferred stock also may be preferred as to dividends, if a corporation cannot pay a dividend on common stock when in arrears on its preferred dividends.

Present value: the sum of a series of future cash payments, *e.g.*, dividends, interest, or principal, adjusted for the time value of money. The time-value adjustment involves discounting future payments by the amount of interest foregone by not receiving them immediately.

Pretax earnings: earnings from operations (before income taxes) less net interest expense and certain other nonoperating items.

Price-earnings ratio (also called *P-E ratio*, *price-earnings multiple*, *earnings multiple*, *multiple*, and *times earnings*): market price divided by earnings per common share before adjustment for extraordinary items. Estimated future per-share earnings often are used in this ratio.

Profitability: the extent to which a business's revenues exceed its expenses. Profitability usually is measured as a percentage of revenues, assets, or equity.

Provision for income taxes: the income tax expense for the current accounting period plus the net addition to deferred income tax liabilities.

Quality: the likelihood of an asset's conversion to cash without any loss.

Quality of earnings: the ratio of operating cash flows to net earnings.

Quick assets: the sum of cash, temporary investments, and receivables.

Quick ratio (also called *acid-test ratio*): the ratio of cash plus temporary investments plus receivables to total current liabilities.

Ratio analysis: the comparison of line items and groups of items within a set of financial statements. Ratios are particularly useful for comparing the financial statements of two or more enterprises.

realization principle

Realization principle: a generally accepted accounting principle that requires enterprises to recognize revenues in the accounting period in which they sell goods or render services, regardless of the timing of cash receipts.

Receivable: a credit account or a note from the lender's point of view; the lender holds the right to receive the proceeds when the account or note is liquidated. *Receivables* usually refers to the sum of accounts receivable and notes receivable.

Recourse: a common provision of discounting transactions that requires sellers of receivables to continue to assume the risk of delinquent and uncollectible accounts.

Report of independent accountants (also called *report of independent auditors*): the auditors' opinion of the fairness of presentation of a set of audited financial statements.

Results of operations (also called *income statement*, *P&L*, *statement of earnings*, *statement of income*, *statement of operations*, and *statement of profit and loss*): a financial statement that lists an enterprise's revenues, expenses, gains, and losses for an accounting period and the total of those items. The total for a business enterprise is called earnings or net income, and the total for a nonprofit organization is called the change in net assets or the change in fund balances.

Retained earnings (also called *reinvested earnings* and *profit employed in the business*): the cumulative sum of additions to a corporation's equity, consisting of earnings net of dividends.

Return on assets: the ratio of pretax operating earnings to average total assets. This ratio measures the efficiency of a business's operations and it is a popular measure of return on investment.

Return on equity: the ratio of earnings applicable to common shareholders to average common shareholders' equity. This ratio is a popular measure of return on investment.

Return on investment: a business's earnings as a percentage of the resource base used to produce those earnings.

Revenue: strictly speaking, a cash receipt attributable to an enterprise's principal activities. The cash receipt need not occur in the same accounting period in which the revenue is recognized. In common usage, many gains are labeled revenues.

Securitization: the bundling or packaging of assets that generate cash flow, such as individual mortgages, for resale as (in this case) mortgage-based securities. The pooling process is intended to reduce the risk of default on the individual loans.

Single-step income statement: an income statement that presents a computation of earnings without a computation of gross profit.

SIV: structured investment vehicle; special purpose entity created by large banks as an affiliate where liabilities can be recorded off the balance sheets of the banks themselves, in a process that increases bank leverage beyond what bank regulations allow. Like conduits, SIVs issue lower-interest securities to raise money to pay for higher-yield issues of credit-card or mortgage-based securities. Unlike conduits, SIVs can use leverage and can borrow by issuing longer-term securities.

Sole proprietorship: a form of business organization in which one principal, the sole proprietor, owns all of the equity of a business.

Solvency: an enterprise's ability to meet its obligations promptly.

Source & app (also called *funds statement*, *statement of cash flows*, *statement of changes in financial position*, and *statement of sources and applications of funds*): a financial statement that reconciles an enterprise's beginning and ending cash balances for a given accounting period by listing the various sources and uses of cash.

Specific identification method: a method of valuing the units remaining in an inventory at the end of an accounting period. The method is to add

up the prices paid for each unit remaining in inventory.

Stated value (also called *par value*): the legal minimum book value of a class of a corporation's stock. A corporation's directors cannot declare a dividend that would reduce the total book value of equity below the total stated value of the corporation's stock. Some states do not require a corporation to establish a stated value for its stock.

Statement of assets and liabilities (also called *balance sheet*, *statement of financial condition*, *statement of condition*, *statement of financial position*): a financial statement that lists the values of the assets, liabilities, and capital of an enterprise on a particular date.

Statement of cash flows (also called *funds statement*, *statement of changes in financial position*, and *statement of sources and applications of funds*, or *source & app*): a financial statement that reconciles an enterprise's beginning and ending cash balances for a given accounting period by listing the various sources and uses of cash.

Statement of changes in net assets (also called *statement of changes in fund balances*): a financial statement that reconciles the beginning-of-period and end-of-period net assets of a nonprofit enterprise by accounting for net earnings and donations for the period. In many cases, this statement also documents transfers among an enterprise's various funds.

Statement of condition (also called *balance sheet*, *statement of financial condition*, *statement of financial position*, *statement of assets and liabilities*): a financial statement that lists the values of the assets, liabilities, and equity or net assets of an enterprise on a particular date.

Statement of earnings (also called *income statement*, *P&L*, *results of operations*, *statement of income*, *statement of operations*, and *statement of profit and loss*): a financial statement that lists an enterprise's revenues, expenses, gains, and losses for an accounting period and the total of those items. The total for a business enterprise is called earnings or net income, and the total for a nonprofit organization is called the change in net assets or the change in fund balances.

Statement of financial condition (also called *balance sheet*, *statement of condition*, *statement of financial position*, *statement of assets and liabilities*): a financial statement that lists the values of the assets, liabilities, and equity or net assets of an enterprise on a particular date.

Statement of income / operations (also called *income statement*, *P&L*, *results of operations*, *statement of earnings*, *statement of operations*, and *statement of profit and loss*): a financial statement that lists an enterprise's revenues, expenses, gains, and losses for an accounting period and the total of those items. The total for a business enterprise is called earnings or net income, and the total for a nonprofit organization is called the change in net assets or the change in fund balances.

Statement of owners' equity (also called *statement of partners' equity* and *statement of shareholders' equity*): a financial statement that reconciles a business's beginning-of-period and end-of-period total equity by accounting for the disposition of earnings, investments by owners, and distributions to owners during an accounting period.

Statement of profit and loss (also called *income statement*, *P&L*, *results of operations*, *statement of earnings*, *statement of income*, and *statement of operations*): a financial statement that lists an enterprise's revenues, expenses, gains, and losses for an accounting period and the total of those items. The total for a business enterprise is called earnings or net income, and the total for a nonprofit organization is called the change in net assets or the change in fund balances.

Statement of retained earnings: a financial statement that accounts for a corporation's allocation of net earnings between dividends and the retained earnings account.

Statement of shareholders'/ share-owners'/ stockholders' equity (also called *statement of owners' equity* and *statement of partners' equity*): a financial statement that reconciles a business's beginning-of-period and end-of-period total equity by accounting for the disposition of earnings, investments by owners, and distributions to owners during an accounting period.

statement of sources

Statement of sources and applications of funds (also called *funds statement*, *statement of cash flows*, *statement of changes in financial position*, and *source & app*): a financial statement that reconciles an enterprise's beginning and ending cash balances for a given accounting period by listing the various sources and uses of cash.

Subprime loans: loans to borrowers with poor credit histories and therefore a higher probability of delinquency and default. Subprime mortgages were thus mortgages extended to homebuyers with a higher likelihood of defaulting on the mortgage, especially if house prices fell.

Subsidiary: a business in which one enterprise controls the election of the board of directors, usually by owning the majority of that business's equity.

Surplus: a synonym for net assets, often used in the financial statements of nonprofit enterprises.

Tax allocation: an accounting practice businesses use to reconcile tax expenses recognized in published financial statements with actual tax payments. Tax allocation is necessary because of the many differences between income as defined in tax statutes and income as measured by applying generally accepted accounting principles (GAAP). Businesses reconcile statutory taxes with GAAP taxes by using deferred income tax liabilities and assets to allocate tax payments among the expenses of several accounting periods.

Times earnings (also called *price-earnings ratio*, *P-E ratio*, *price-earnings multiple*, *earnings multiple*, and *multiple*): market price divided by earnings per common share before adjustment for extraordinary items. Estimated future per-share earnings often are used in this ratio.

Times interest earned (also called *interest coverage ratio*): the ratio of pretax operating earnings to net interest expense. This ratio measures a business's long-term solvency.

Total return: the sum of a corporation's dividends, extras, and the change

in its share price for a given period, usually expressed as a percentage of the beginning share price.

Treasury stock: stock that a corporation has issued and subsequently repurchased.

Turnover: the ratio of net sales volume to the value of a balance-sheet item.

Unqualified opinion (also called *clean opinion*): a report of independent accountants affirming that an enterprise's financial statements are fairly presented in all material respects, and in accordance with GAAP.

Valuation account: an account used to adjust for changing circumstances in the amount initially recorded in an asset, liability, or equity account. A valuation account is part of the related account and is neither an asset nor a liability in its own right. The valuation accounts that appear in financial statements typically are contra-asset accounts, such as depreciation and allowances.

Vertical analysis: the comparison of the size of each line item in a financial statement to some benchmark item on that statement. Sales and total assets are the most common benchmark items.

Working capital (see also *operating working capital*): current assets minus current liabilities.

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American Institute for Economic Research
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AMERICAN INSTITUTE
for ECONOMIC RESEARCH
250 Division Street, Post Office Box 1000
Great Barrington, Massachusetts 01230

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