CHAPTER EIGHT

8

RETURN ON INVESTED CAPITAL AND PROFITABILITY ANALYSIS

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A LOOK BACK `<`

Chapter 7 examined cash flow measures of business activities and showed how this information complements our study of accrual measures in earlier chapters. We also demonstrated how reconstruction of transactions assists in the use of cash flow data.

A LOOK AT THIS CHAPTER `●`

This chapter focuses on return with an emphasis on profitability. We emphasize return on invested capital and explain variations in its measurement. Special attention is directed at return on net operating assets and return on common shareholders' equity. We explore disaggregations of both these return measures and describe their relevance to our analysis. Financial leverage is explained and analyzed using the return measures in this chapter.

A LOOK AHEAD `>`

Chapter 9 extends our focus on analysis tools to include prospective analysis and the forecasting of financial statements. We illustrate forecasting mechanics and demonstrate the application of prospective analysis for valuation of common stock.

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ANALYSIS OBJECTIVES

• Describe the usefulness of return measures in financial statement analysis.

• Explain return on invested capital and variations in its computation.

• Analyze return on net operating assets and its relevance for analysis.

• Describe disaggregation of return on net operating assets and the importance of its components.

• Describe the relation between profit margin and asset turnover.

• Analyze return on common shareholders' equity and its role in analysis.

• Describe disaggregation of return on common shareholders' equity and the relevance of its components.

• Explain operating and financial leverage and how to assess a company's success in using leverage to increase returns.

A Good Fit for Gap?

SAN FRANCISCO–Gap Inc.'s return on equity reached a high of 59% in 2000; then it took a nosedive. Gap had lost touch with its customers. Its distinctive lines became uninspired and its Old Navy value-priced line of clothes cannibalized customers from the higher-margin Gap lines and cheapened the company's image. Sales growth slowed from over 30% per year to less than half that level. Inventory turnover dropped from over seven times a year to less than four as the company struggled to reduce unsold inventories.

Gap had borrowed heavily as it spent money to upgrade and expand its stores. Its financial leverage increased to more than $0.76 in debt for each $1.00 in equity, nearly double the $0.40 average for all publicly traded companies. Given its lack of profitability and high debt load, credit agencies lowered the rating on Gap bonds to just above "junk" status.

Gap desperately needed a change in strategy. It brought in Paul Pressler to run the company. Pressler had previously managed Disney's theme parks and brought a new customer focus. He began closing unprofitable stores to generate cash that he then used to pay down debt. Gap's financial leverage dropped by over half, to a more conservative level of 29%.

> ... Gap has yet to return to its glory years ...

He upgraded the company's information systems to gain better control over operations, and its gross profit margin increased from 30% to 39%; a dramatic increase for a company in the highly competitive retail clothing industry. Pressler also successfully trimmed a percentage point off Gap's SG&A expenses as a percent of sales.

The increase in gross margin and decrease in operating costs combined to increase Gap's operating profit margin from loss levels to an 8% profit, which is much higher than the 5.5% average for competitors.
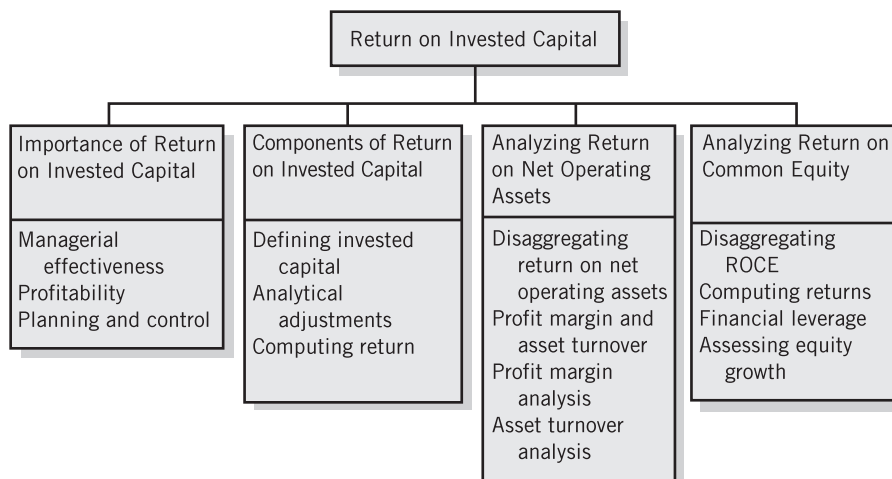
In response, Gap's stock price doubled. Yet, many analysts see its increased stock price as merely reflective of a stronger balance sheet as Gap used its cash to reduce debt and to repurchase shares.

Gap's marketing side has yet to bear fruit. "The stores do not look good; the product is not great, nor is it just OK," says Jennifer Black, a retailing analyst who has her own firm. "They lost their focus . . . who is their target customer?" (*Forbes,* 2005)

Downsizing and systems upgrades can only do so much. Although Pressler has been a good fit so far for Gap, he has yet to return Gap to its glory years as a premier marketer. Gap's share price will not fully take off until he does.

PREVIEW OF CHAPTER 8

Financial statement analysis involves assessing both risk and return. *Return on invested capital* refers to a company's earnings relative to both the level and source of financing. It is a measure of a company's success in using financing to generate profits. This chapter describes return on invested capital and its relevance to financial statement analysis. We explain variations in measurement of return on invested capital and their interpretation. We also disaggregate return on invested capital into important components for additional insights into company performance and future operations. The role of financial leverage and its importance for returns analysis is examined. This chapter demonstrates each of these analysis techniques using actual financial statement data, including those of Campbell Soup Company.

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                          ┌─────────────────────────────┐
                          │  Return on Invested Capital  │
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Importance of Return on Invested Capital	Components of Return on Invested Capital	Analyzing Return on Net Operating Assets	Analyzing Return on Common Equity
Managerial effectiveness Profitability Planning and control	Defining invested capital Analytical adjustments Computing return	Disaggregating return on net operating assets Profit margin and asset turnover Profit margin analysis Asset turnover analysis	Disaggregating ROCE Computing returns Financial leverage Assessing equity growth

IMPORTANCE OF RETURN ON INVESTED CAPITAL

We can analyze company performance in several ways. Revenue, net income, and asset growth are performance measures in common use. Yet none of these measures *individually* are useful as a comprehensive measure of company performance. The reason stems from their interdependency and the interdependency of business activities. For example, increases in revenue are desirable only if they increase profits. Asset increases are desirable only if they generate additional sales volume. To assess net income we must relate it to invested capital. For example, a profit of $1 million is assessed differently if a company's invested capital is $2 million or $200 million.

Analysis of company performance demands *joint* analysis, where we assess one measure relative to another. The relation between income and invested capital, referred to as **return on invested capital (ROIC)** or *return on investment (ROI),* is probably the most widely recognized measure of company performance. It allows us to compare companies on their success with invested capital. It also allows us to assess a company's return relative to its capital investment risk, and we can compare the return on invested capital to returns of alternative investments. Government treasury bonds reflect a minimum return due to their low risk. Riskier investments are expected to yield higher returns. Analysis of return on invested capital compares a company's income, or other performance measure, to the company's level and source of financing. It determines a company's ability to succeed, attract financing, repay creditors, and reward owners. We use return on invested capital in several areas of our analysis including: (1) managerial effectiveness, (2) level of profitability, and (3) planning and control.

Measuring Managerial Effectiveness

The level of return on invested capital depends primarily on the skill, resourcefulness, ingenuity, and motivation of management. Management is responsible for a company's business activities. It makes financing, investing, and operating decisions. It selects actions, plans strategies, and executes plans. Return on invested capital, especially when computed over intervals of a year or longer, is a relevant measure of a company's managerial effectiveness.

Measuring Profitability

Return on invested capital is an important indicator of a company's long-term financial strength. It uses key summary measures from both the income statement (profits) and the balance sheet (financing) to assess profitability. This profitability measure has several advantages over other long-term measures of financial strength or solvency that rely on only balance sheet items (such as debt to equity ratio). It can effectively convey the return on invested capital from varying perspectives of different financing contributors (creditors and shareholders).

Measure for Planning and Control

Return on invested capital serves an important role in planning, budgeting, coordinating, evaluating, and controlling business activities. This return is composed of the returns (and losses) achieved by the company's segments or divisions. These segment returns are also made up of the returns achieved by individual product lines, projects, and other components. A well-managed company exercises control over returns achieved by each of its profit centers and rewards its managers on these results. In evaluating investing alternatives, management assesses performance relative to expected returns. Out of this assessment come strategic decisions and action plans for the company.

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DELL HURDLE
Dell Computer has its marketing department compute return on investment for *each* equipment sale.

ANALYSIS VIEWPOINT   *. . . YOU ARE THE AUDITOR*

You are the audit manager responsible for substantive audit tests of a manufacturing client. Your analytical procedures reveal a 3% increase in sales from $2 to $2.06 (millions) and a 4% decrease in total expenses from $1.9 to $1.824 (millions). Both changes are within your "reasonableness" criterion of ±5%. Accordingly, you do not expand audit tests of these accounts. The audit partner in charge questions your lack of follow-up on these deviations and expressly mentions *joint* analysis. What is the audit partner referring to?


■■■■■■■ COMPONENTS OF RETURN ON INVESTED CAPITAL

Analyzing company performance using return on invested capital is conceptually sound and appealing. **Return on invested capital** is computed as:

$$\frac{\text{Income}}{\text{Invested capital}}$$

There is, however, not complete agreement on the computation of either the numerator or denominator in this relation. These differences are valid and stem from the diverse perspectives of financial statement users. This section describes these differences and explains how different computations are relevant to different users or analyses. We begin with a discussion of invested capital, followed by consideration of income.

Invested Capital for a Typical Company

Long-term debt

Current liabilities

Preferred equity

Common equity
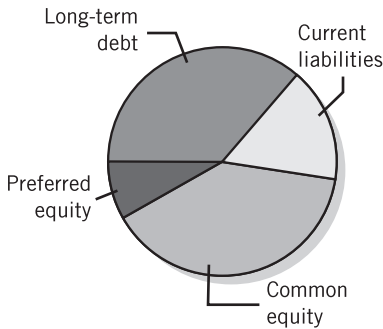
Defining Invested Capital

There is no universal measure of invested capital from which to compute rate of return. The different measures of invested capital used reflect users' different perspectives. In this section we describe two different measures of invested capital and explain their relevance to different users and interpretations.
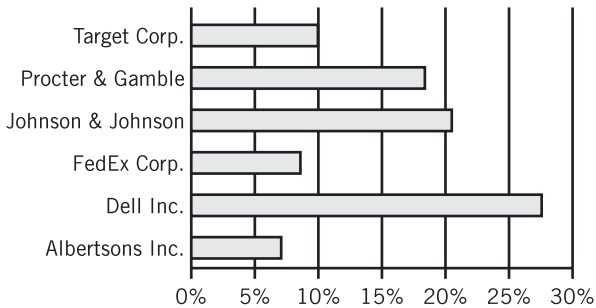
Net Operating Assets

Many analysts segregate the balance sheet and income statements into operating and nonoperating components and compute a **return on net operating assets (RNOA)** as the summary measure of performance. This parsing of financial statements into operating and nonoperating components follows from the view that operating activities are the most long-lasting and relevant for the determination of stock price.

Operating activities are the core activities of the company. They include all the activities necessary to bring a company's product or service to market, and to service its customer needs. Operating activities are crucial, and companies must execute them well over the long run if they are to survive. In the income statement, operating activities typically include sales, cost of goods sold, and selling and general and administrative (SG&A) expenses. On the balance sheet, operating activities are represented by the assets and liabilities relating to these income statement accounts, such as accounts receivable, inventories, PPE, accounts payable, and accrued expenses.

Net Operating Income after Tax to Net Operating Assets

Target Corp.		
Procter & Gamble		
Johnson & Johnson		
FedEx Corp.		
Dell Inc.		
Albertsons Inc.		

0% 5% 10% 15% 20% 25% 30%

Many firms invest excess cash in financial assets, such as marketable securities, and earn returns that are typically included in the income statement as "other" income. Likewise, firms borrow money on short-term and long-term debt, resulting in interest expense. Although effective management of an investment portfolio along with astute borrowing can benefit income, these nonoperating revenues and expenses are regarded as ancillary to the core operating activities of the business. Consequently, investment returns and borrowing expenses do not typically have a major impact on company value, unless they are extreme.

Our approach is to analyze a company along this operating/nonoperating dimension, with the return on net operating assets (RNOA) as the summary measure of performance. RNOA, which we more fully explore below, is defined as net operating income after tax (NOPAT) divided by average net operating assets (NOA).

More specifically, operating assets are comprised of total assets less financial assets such as investments in marketable securities. Operating liabilities are comprised of total liabilities less interest-bearing debt. Operating assets less operating liabilities yields *net operating assets (NOA)*. The appropriate income measure to compare with net operating assets is *net operating income after tax (NOPAT),* which equals revenues less operating expenses such as cost of goods sold, SG&A expenses, and taxes (NOPAT excludes investment income and interest expense). We discuss the composition of both NOA and NOPAT in greater depth later in the chapter. Returns on net operating assets for selected companies are provided in the margin graphic.

Common Equity Capital

Return on common equity (ROCE) is defined as net income less preferred dividends divided by average common equity. Common equity is equal to total shareholders' equity less preferred stock. Preferred stock is excluded from the computation since, from the viewpoint of common shareholders, preferred stock has a fixed claim to the net assets and cash flow of the company, just like debt.

Common equity can alternatively be defined as equal to total assets less debt and preferred stock. The proportion of debt and equity financing of assets is a capital structure decision that each company must make. The amount of equity in the capital structure, and thus the amount of equity used in the computation of return on equity, is, therefore, a function of the degree to which the company is financed with debt (that is, more debt means less equity). Likewise, the numerator (net income) is impacted by the amount of interest expense that the company must pay on its debt. As we discuss more fully below, the return on common equity captures both the returns on net operating assets discussed above and the effects of financial leverage (the use of debt versus equity in the capital structure). Net income to common equity for selected companies is provided in the margin graphic.

Net Income to Common Equity
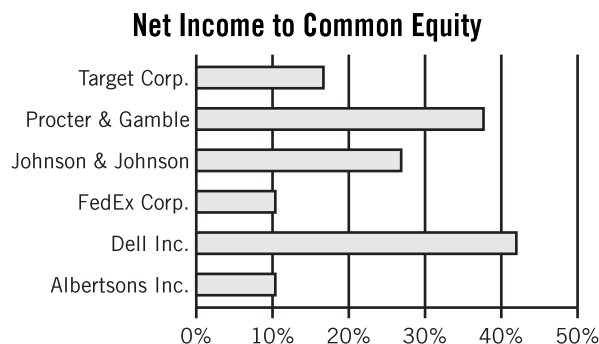
Computing Invested Capital for the Period

Regardless of our *invested capital* definition, we compare the return for the period with its investment base. The invested capital for the period is typically computed using the *average* capital available to a company during the period. An average is used to reflect changes in invested capital during the period. The most common method is adding beginning and ending year invested capital and dividing by 2. We must use care in applying averaging. Companies in certain industries choose a "natural" rather than calendar business year. For example, in retailing the natural business year ends when inventories and sales are low (for example, January 31 after the holiday season). In this case, averaging year-ends yields the lowest rather than the average invested capital during the period. A more accurate method is to average interim amounts–for example, adding quarter-end invested capital amounts and dividing by 4.

Adjustments to Invested Capital and Income

Our analysis of return on invested capital uses reported financial statement numbers as a starting point. As we discussed in several prior chapters, many accounting numbers call for analytical adjustment. Also, several numbers not reported in financial statements need to be included. Some adjustments, like those relating to inventory, affect both the numerator and denominator of return on invested capital, moderating their effect. Whatever their impacts, the analysis of return on invested capital should use the appropriately adjusted financial statement numbers as described in earlier chapters.

Computing Return on Invested Capital

This section applies our discussion to an analysis of return on invested capital. We illustrate the different measures of both income and invested capital for the computations. For this purpose, we draw on the financial statements of Excell Corporation reproduced in Exhibits 8.1 and 8.2. Our return on invested capital computations are for Year 9 and use amounts rounded to the nearest million.

Exhibit 8.1

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EXCELL CORPORATION
Income Statements
For Years Ended December 31, Year 8 and Year 9

($ thousands)	Year 8	Year 9
Sales	$1,636,298	$1,782,254
Cost of goods sold and operating expenses	1,473,293	1,598,679
Operating profit	163,005	183,575
Interest expense	21,825	20,843
Pretax profit	141,180	162,732
Tax expense	52,237	58,584
Net income	$ 88,943	$ 104,148

Return on Net Operating Assets

Return on net operating assets (RNOA) is computed as:

$$\text{RNOA} = \frac{\text{Net operating profits after tax (NOPAT)}}{\text{Average net operating assets (NOA)}}$$

The denominator of the equation, **net operating assets (NOA),** is equal to operating assets less operating liabilities. Operating assets and liabilities are those necessary to conduct the company's business, and include cash, accounts receivable, inventories, prepaid expenses, deferred tax assets, property, plant and equipment (PPE), and long-term investments related to strategic acquisitions (such as equity method investments, goodwill, and acquired intangible assets). Netted from these operating assets are current operating liabilities, such as accounts payable and accrued expenses, and long-term operating liabilities, such as pensions and other postretirement (OPEB) liabilities and deferred income tax liabilities.

Nonoperating assets include investments in marketable securities, nonstrategic equity investments, and investments in discontinued operations prior to sale. Nonoperating liabilities include bonds and other long-term interest-bearing liabilities, and the noncurrent portion of capitalized leases. **Net financial obligations (NFO)** is equal to nonoperating liabilities less nonoperating assets (liabilities are listed first to yield a positive sign since most companies have more financial liabilities than financial assets).

The distinction between operating and nonoperating activities is summarized in the following representation of a typical balance sheet:

BALANCE SHEET

Operating assets	OA		Financial liabilities*	FL	
Less operating liabilities	(OL)		Less financial assets	(FA)	
			Net financial obligations	NFO	
			Stockholders' equity†	SE	
Net operating assets	NOA		Net financing	NFO + SE‡	

*Includes preferred stock.
†Excludes preferred stock.
‡NOA = NFO + SE.

Exhibit 8.2

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EXCELL CORPORATION
Balance Sheets
At December 31, Year 8 and Year 9

($ thousands)	Year 8	Year 9
Assets		
Cash	$ 115,397	$ 71,546
Marketable securities	38,008	43,854
Accounts receivable, net	177,538	182,859
Inventories	204,362	256,838
Total current assets	535,305	555,097
Investments in unconsolidated subsidiaries	33,728	62,390
Marketable securities	5,931	56,997
Property, plant, & equipment, net	1,539,221	1,633,458
Goodwill	6,550	6,550
Total long-term assets	1,585,430	1,759,395
Total assets	$2,120,735	$2,314,492
Liabilities		
Notes payable	$ 7,850	$ 13,734
Accounts payable	138,662	155,482
Taxes payable	24,370	13,256
Current maturities of long-term debt	30,440	33,822
Total current liabilities	201,322	216,294
Long-term debt	507,329	473,507
Pension and OPEB liabilities	743,779	852,237
Total long-term liabilities	1,251,108	1,325,744
Equity		
Common stock	413,783	413,783
Additional paid-in capital	19,208	19,208
Retained earnings	436,752	540,901
Treasury stock	(201,438)	(201,438)
Total stockholders' equity	668,305	772,454
Total liabilities and equity	$2,120,735	$2,314,492

Since the accounting equation stipulates that Assets = Liabilities + Equity, we can also represent the balance sheet with the following operating- and nonoperating-based identity:

Net operating assets (NOA) = Net financial obligations (NFO) + Stockholders' equity (SE)

For Excell Corporation (Exhibit 8.2), the net operating assets (NOA) are equal to total assets less nonoperating assets, such as short-term and long-term investments in marketable securities. Operating liabilities are equal to total liabilities less nonoperating liabilities, such as notes payable to banks, long-term indebtedness payable within one year, and long-term indebtedness. Net operating assets (NOA) for Years 8 and 9 is

computed as follows:

	Year 8	Year 9
Cash..	$ 115,397	$ 71,546
Accounts receivable, net	177,538	182,859
Inventories	204,362	256,838
Investments in unconsolidated subsidiaries	33,728	62,390
Property, plant, & equipment, net	1,539,221	1,633,458
Goodwill	6,550	6,550
Accounts payable..	(138,662)	(155,482)
Taxes payable...	(24,370)	(13,256)
Pension and OPEB liabilities	(743,779)	(852,237)
Net operating assets	$1,169,985	$1,192,666

Investments in unconsolidated subsidiaries relate to equity method investments, which we discuss in Chapter 5. These are presumed to be strategic investments and, therefore, are treated as operating assets. Likewise, goodwill is treated as operating so long as the investment is strategic in nature and is presumed as such unless facts dictate otherwise. Investments in discontinued operations (not present in this example) are treated as nonoperating since the business unit no longer contributes to the operating profits of the company.

Net financial obligations are equal to financial obligations such as notes and other debt payable and dividends payable (not present in this example), less financial assets such as short-term and long-term investments in marketable securities. For Excell, NFO for Years 8 and 9 is computed as follows:

	Year 8	Year 9
Notes payable	$ 7,850	$ 13,734
Current maturities of long-term debt....................	30,440	33,822
Long-term debt..	507,329	473,507
Marketable securities—current............................	(38,008)	(43,854)
Marketable securities—noncurrent......................	(5,931)	(56,997)
Net financial obligations	$501,680	$420,212

Finally, NOA = NFO + SE as follows:

$$
\begin{array}{llll}
 & \text{NOA} & = \text{NFO} & + & \text{SE} \\
\text{Year 8} & \$1,169,985 & = \$501,680 & + & \$668,305 \\
\text{Year 9} & \$1,192,666 & = \$420,212 & + & \$772,454
\end{array}
$$

The numerator of the RNOA equation, **net operating profit after tax (NOPAT),** is the after-tax profit earned from net operating assets. The distinction between operating and nonoperating activities is summarized in the following representation of a typical income statement:

INCOME STATEMENT

Operating revenues..		OR
Operating expenses		(OE)
Operating tax expense		
Tax provision	(TAX)	
Tax shield on interest	(SHLD)	
Operating tax expense		(TE)
Operating income		OI
Net financial expense		
Interest expense*	(INTX)	
Interest revenue	INTR	
Tax shield on interest	SHLD	
Net financial expense		(NFE)
Net income..		(NI)

Includes dividends on preferred stock.

Operating income includes sales less cost of goods sold (COGS), operating expenses (OE) such as selling, general and administrative (SG&A) expenses, and income taxes. Operating tax expense has two components: the tax provision less the tax shield. Tax shield on interest refers to the reduction of taxable income (and, thus, tax expense) arising from the deductibility of interest expense. The tax shield on interest reduces the effective tax rate (tax expense/pretax income) which is applied to both pretax operating profit and nonoperating revenue and expense. Items excluded from NOPAT include interest revenue and expense, dividend revenue, nonoperating investment gains and losses, and income or loss from discontinued operations (all computed net of tax).

Specifically, NOPAT is computed as follows[1]:

$$\text{NOPAT} = (\text{Sales} - \text{Operating expenses}) \times (1 - [\text{Tax expense}/\text{Pretax profit}])$$

For Excell, NOPAT for Years 8 and 9 is,

	Effective tax rate	NOPAT
Year 8	$52,237/$141,180 = 37%	$163,005 × (1 − 37%) = $102,693
Year 9	$58,584/$162,732 = 36%	$183,575 × (1 − 36%) = $117,488

Excell's **return on net operating assets (RNOA)** for Year 9 is equal to:

$$\text{RNOA} = \text{NOPAT}/\text{Average NOA}$$
$$= \$117,488/[(\$1,169,985 + \$1,192,666) \div 2]$$
$$= 9.95\%$$

Return on Common Shareholders' Equity

Return on common equity typically excludes from invested capital all but common shareholders' equity. The **return on common equity** of Excell Corporation for Year 9

[1] Alternatively, some analysts simply *assume* a flat marginal corporate tax rate, such as 35%. The implication is that deviations from this *assumed* rate are treated as nonoperating revenue (expense).
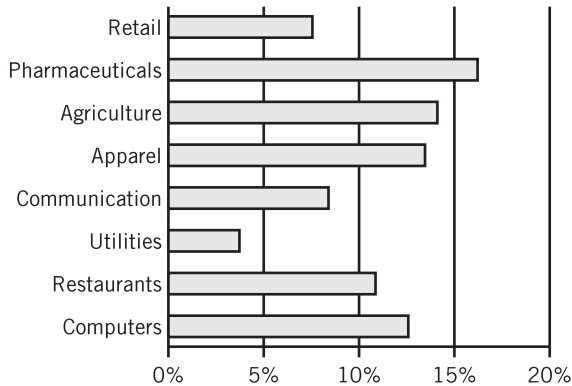
is computed as:

$$\frac{\text{Net income} - \text{Preferred dividends}}{\text{Average common shareholders' equity}}$$

$$\frac{\$104{,}148 - \$0}{(\$668{,}305 + \$772{,}454)/2} = 14.46\%$$

As we explain on page 463, ROCE consists of two components: an operating return (RNOA) and a nonoperating return (the positive or negative effects of financial leverage). Excell's higher return on common shareholders' equity as compared to its return on net operating assets reflects the favorable effects of financial leverage in this case.

ANALYZING RETURN ON NET OPERATING ASSETS

Return on invested capital is useful in management evaluation, profitability analysis, and planning and control. Our use of return on invested capital for these tasks requires a thorough understanding of this return measure. This is because the return measure includes components with the potential to contribute to an understanding of company performance. This section examines this return when invested capital is viewed from an operating standpoint, commonly referred to as **return on net operating assets (RNOA).**

Return on Net Operating Assets for Selected Industries

Disaggregating Return on Net Operating Assets

Recall that the return on net operating assets (RNOA) is computed as:

$$\frac{\text{Net operating profit after tax (NOPAT)}}{\text{Average net operating assets (NOA)}}$$

We can disaggregate this return into meaningful components relative to sales. This disaggregation of return on net operating assets is:

Return on net operating assets = Net operating × Net operating
profit margin   asset turnover

$$\frac{\text{NOPAT}}{\text{Average NOA}} = \frac{\text{NOPAT}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Average NOA}}$$

The NOPAT to sales relation is called **net operating profit margin** (or simply NOPAT margin) and measures a company's operating profitability relative to sales. The sales to net operating assets relation is called the **net operating asset turnover** (or simply NOA turnover) and measures a company's effectiveness in generating sales from net operating assets. This decomposition highlights the role of these components, both NOPAT margin and NOA turnover, in determining return on net operating assets (RNOA). NOPAT margin and NOA turnover are useful measures that require analysis to gain insights into a company's profitability. We describe the major components determining return on net operating assets in Exhibit 8.3. The first level of this analysis focuses on the interaction of NOPAT margin and NOA turnover. The second level of analysis highlights other important factors determining profit margin and asset turnover.

Disaggregating Return on Net Operating Assets   **Exhibit 8.3**
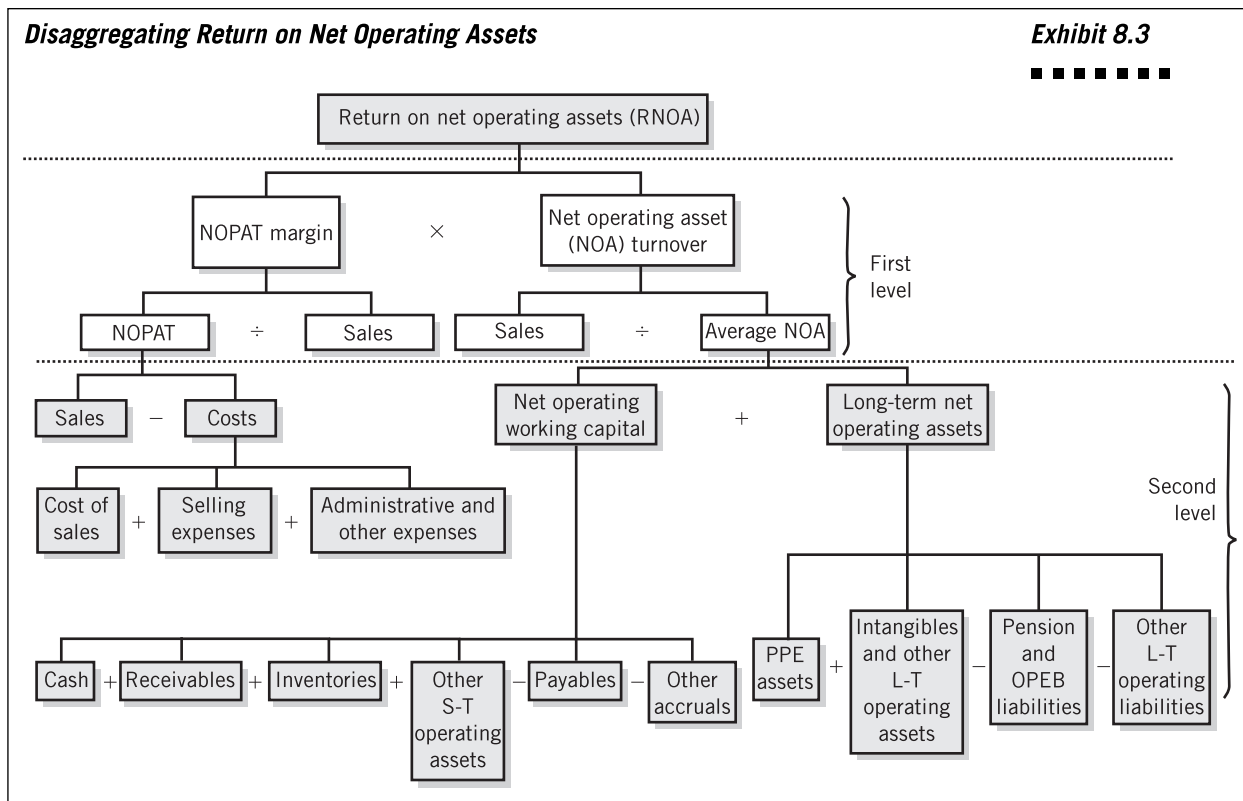
Effect of Operating Leverage

Net operating assets (NOA) are reduced by increases in operating liabilities, thus increasing net operating asset turnover. Provided that the increase in operating liabilities does not affect NOPAT, RNOA is also increased. The operating liability effect is seen in this alternate decomposition of RNOA:

$$RNOA = \frac{NOPAT}{Sales} \times \frac{Sales}{Average\ OA} \times (1 + OLLEV)$$

where OA is Operating Assets (gross) and OLLEV **(Average Operating liabilities/ Average NOA)** is the operating liability leverage ratio. Since OLLEV is a positive number, increasing OLLEV increases RNOA.

The intuition behind the equation is this: operating liabilities generally do not entail a cost if used judiciously. For example, increasing accounts payable by delaying payment allows the company to use suppliers' capital which is at low or no cost so long as the payment is not delayed too much. (At some point, however, the supplier, realizing that the use of its capital is adding to its cost [that is, receivables, a nonearning asset, are higher] will exact a higher price for its goods or services or may decide not to sell to the company altogether.) The result is a reduction in NOA, no increase in NOPAT, and an increase in RNOA. The firm has, in effect, profited from the use of its suppliers' capital. This avoids the need to finance its operating assets with costly debt or equity capital.

Relation between Profit Margin and Asset Turnover

The relation between NOPAT margin and NOA turnover is illustrated in Exhibit 8.4. As defined, RNOA equals NOPAT margin (in percent) multiplied by NOA turnover. As Exhibit 8.4 shows, Company X achieves a 10% RNOA with a relatively high NOPAT margin and a low NOA turnover. In contrast, Company Z achieves the same RNOA

Exhibit 8.4

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Analysis of Return on Net Operating Assets

	Company X	Company Y	Company Z
Sales...	$5,000,000	$10,000,000	$10,000,000
NOPAT	$ 500,000	$ 500,000	$ 100,000
NOA..	$5,000,000	$ 5,000,000	$ 1,000,000
NOPAT margin	10%	5%	1%
NOA turnover.......................................	1	2	10
Return on net operating assets...........	10%	10%	10%

but with a low NOPAT margin and high NOA turnover. Company Y's margin and turnover is between these two companies. Namely, Company Y has a 10% RNOA with a NOPAT margin one-half that of Company X and an NOA turnover double that of Company X. This exhibit indicates there are many combinations of profit margins and asset turnovers yielding a 10% RNOA.

Since RNOA is a function of both margin and turnover, it is tempting to analyze a company's ability to increase RNOA by increasing profit margin while holding turnover constant, or vice versa. Unfortunately, the answer is not that simple because the two measures are not independent. Profit margin is a function of sales (selling price × units sold) and operating expenses. Turnover is also a function of sales (sales/assets). Consequently, increasing profit margin by increasing selling prices impacts units sold. Also, reductions of marketing-related operating expenses in an effort to increase profitability usually impacts product demand. Selling prices, marketing, R&D, production, and a host of other business areas must all be managed effectively to maximize RNOA.

We can generalize the returns analysis of Exhibit 8.4 to show a continuous range of possible combinations of profit margins and asset turnovers yielding a constant return on assets (the solid line in the graph in Exhibit 8.5). Exhibit 8.5 portrays graphically this

Exhibit 8.5

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Relation between NOPAT Margin, NOA Turnover, and Return on Net Operating Assets
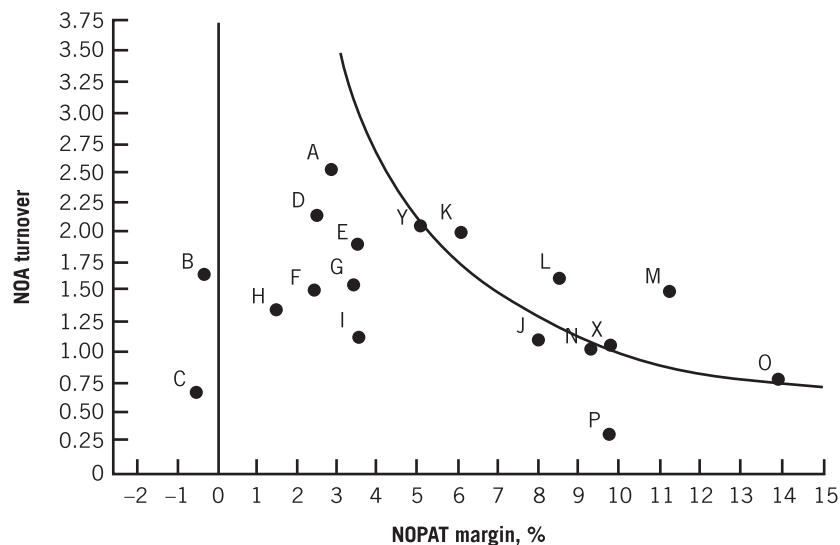
relation between NOPAT margin (horizontal axis) and NOA turnover (vertical axis). The curve drawn in this exhibit traces all combinations of NOPAT margin and NOA turnover yielding a constant return on net operating assets. This curve slopes from the upper left corner of low NOPAT margin and high NOA turnover to the lower right corner of high NOPAT margin and low NOA turnover. We plot the data from Companies X and Y (from Exhibit 8.4) in Exhibit 8.5–designated points X and Y, respectively. The remaining points A through P are combinations of NOPAT margins and NOA turnovers of other companies. Graphing returns of companies within an industry around a constant return on asset curve is a valuable method of comparing profitability. More important, such graphing reveals the relation between NOPAT margin and NOA turnover determining RNOA and is extremely useful in company analysis.

Disaggregating return on net operating assets as in Exhibit 8.5 provides insights in assessing companies' strategic actions to increase returns. For example, Companies B and C must concentrate on restoring profitability. Moreover, assuming the industry represented in Exhibit 8.5 has a representative NOPAT margin and NOA turnover, the evidence suggests Company P should focus on improving NOA turnover while Company A should focus on increasing NOPAT margin. Other companies like H and I should best concentrate on both NOPAT margin and NOA turnover.

Analysis of return on assets can reveal additional insights into strategic activity. As an example, consider two companies in the same industry with identical returns on net operating assets.

|	Company AA	Company BB
Sales	$ 1,000,000	$20,000,000
Income	$ 100,000	$ 100,000
Assets	$10,000,000	$10,000,000
NOPAT margin	10%	0.5%
NOA turnover	0.1	2.0
Return on net operating assets	1%	1%

Both companies' returns on net operating assets are poor. Yet, the strategically corrective action for each is different. Our analysis of such cases must evaluate the likelihood of managerial success and other factors in improving performance. In particular, Company AA has a 10% NOPAT margin while Company BB's is considerably lower. On the other hand, a dollar invested in assets yields only $0.10 in sales for Company AA, whereas Company BB achieves $2 in sales for each dollar invested. Accordingly, one part of our analysis focuses on Company AA's assets, asking questions such as: Why is turnover so low? Are there assets yielding little or no return? Are there idle assets requiring disposal? Are assets inefficiently or ineffectively utilized? We would expect that Company AA can achieve immediate improvements by concentrating on increasing turnover (by increasing sales, reducing investment, or both). It is likely more difficult for Company AA to increase profit margin much beyond the industry norm.

Company BB confronts a much different scenario. Our analysis suggests Company BB should focus on correcting its low profit margin. Reasons for low profit margins are varied but often include inefficient production methods, unprofitable product lines, excess capacity with high fixed costs, or excessive selling and administrative expenses. Companies with low profit margins sometimes discover that changes in tastes and technology require increased investment in assets to finance sales. This implies that to maintain its return on assets, a company must increase its profit margin or else production is no longer moneymaking.

There is a tendency to view a high profit margin as a sign of good operating performance. Yet we must emphasize the importance of return on invested capital (however defined) as the ultimate test of profitability. A supermarket is content with a NOPAT margin of 1% to 2% because of its high NOA turnover owing to a relatively low asset investment. Similarly, a discount store accepts a low NOPAT margin to generate high asset turnover (primarily in inventories). In contrast, capital-intensive industries like steel, chemicals, and automobiles having large asset investments and low NOA turnovers must achieve higher NOPAT margins to be successful. Exhibit 8.6 portrays graphically the relation between NOPAT margin and NOA turnover for several industries. We graph the 10.3% return on assets curve in Exhibit 8.6 because it is the median for publicly traded companies.

Exhibit 8.6	Net Operating Asset Turnover and Net Operating Profit Combinations for a Given RNOA
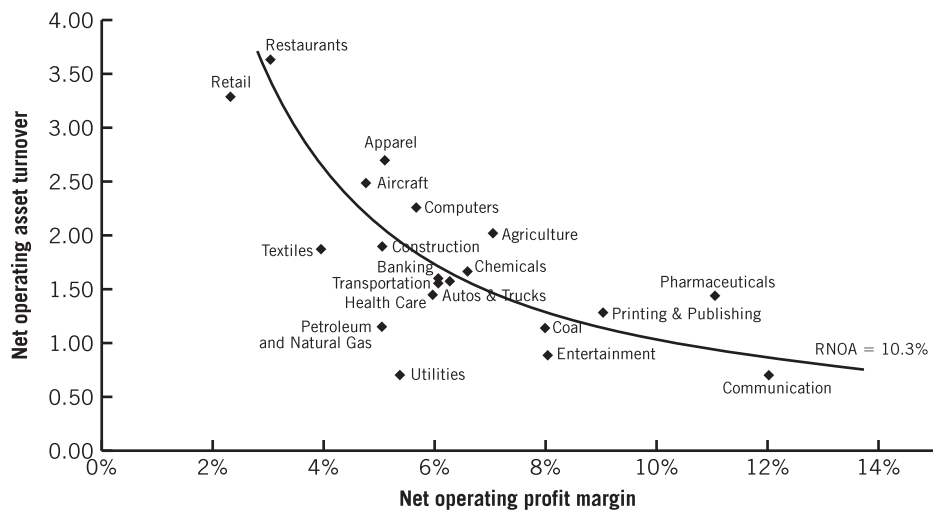
We must remember that analysis of returns for a single year is potentially misleading. The cyclical nature of many industries yields swings in profit margins where some years' profits can be excessive while others are not. Companies must be analyzed using returns computed over several years and spanning a business cycle.

Disaggregation of Profit Margin

Operating profit margin (OPM) is defined as

$$\frac{\text{Net operating profit after tax (NOPAT)}}{\text{Sales}}$$

The operating profit margin is a function of the per-unit selling price of the product or service compared with the per-unit costs of bringing that product or service to market and servicing customer needs after the sale. For analysis purposes, it is useful to disaggregate pretax profit margin (PM) into its components:

$$\text{Pretax PM} = \text{Pretax sales PM} + \text{Pretax other PM}$$

$$\text{Pretax sales PM} = \frac{\text{Gross margin}}{\text{Sales}} - \frac{\text{Selling expense}}{\text{Sales}} - \frac{\text{Administration expense}}{\text{Sales}} - \frac{\text{R\&D}}{\text{Sales}}$$

$$\text{Pretax other PM} = \frac{\text{Equity income}}{\text{Sales}} \pm \frac{\text{Special items}}{\text{Sales}} \pm \cdots$$

Following are several areas of importance in our analysis of profitability.

Gross Profit. Gross profit (or *gross margin*) is measured as revenues less cost of sales. It is frequently reported as a percent (*gross profit percent*), computed as gross profit divided by sales. The gross profit, or gross profit percent, is a key performance measure. All other costs must be covered by gross profit, and any income earned is the balance remaining after these costs. Also, gross profit must be sufficiently large to finance essential future-directed discretionary expenditures like research and development, marketing, and advertising. Gross profits vary across industries depending on factors like competition and differences in the factors of production (production wage rates, costs of raw materials, levels of capital investment, and the like).

Analyzing changes in sales and cost of sales is useful in identifying major drivers of gross profit. Changes in gross profit often derive from one or a combination of the following:

- Increase (decrease) in sales volume.
- Increase (decrease) in unit selling price.
- Increase (decrease) in cost per unit.

Interpreting the results of an analysis of changes in gross profit requires identifying the major factors responsible for these changes. Moreover, we often extend the analysis to focus on strategic activities to remedy or improve gross profit (through volume, price, or cost). For example, if we determine the reason for a decrease in gross profit is a decline in unit selling prices, and this reflects overcapacity in the industry and price cutting, then our analysis of the company is pessimistic given management's lack of potential strategic responses. However, if the reason for a decrease in gross profit is an increase in unit costs, then our analysis is more optimistic yielding a wider range of potential strategic responses for management.

When interpreting cost of sales and gross profit, especially for comparative analysis, we must direct attention to potential distortions arising from accounting methods. Even though this is applicable to all cost analysis, it is especially important with inventories and depreciation accounting (recall that depreciation expense relating to production equipment is a component of cost of goods sold). These two items merit special attention because they represent costs that are usually substantial in amount and subject to alternative accounting methods that can markedly affect their measurement.

Selling Expenses. The importance of the relation between selling expenses and revenues varies across industries and companies. In certain companies, selling expenses are primarily commissions that are highly variable, while in others they are largely fixed. Our analysis must attempt to distinguish between these variable and fixed components, which can then be usefully analyzed relative to revenues.

When selling expenses as a percentage of revenues show an increase, we should focus attention on the increase in selling expense generating the associated increase in revenues. Beyond a certain level of selling expenses, there are lower marginal increases in revenues. This can be due to market saturation, brand loyalty, or increased expense in new territories. It is important for us to distinguish between the percentage of selling expenses to revenues for new versus continuing customers. This has implications for forecasts of profitability. If a company must substantially increase selling expenses to increase sales, its profitability is limited or can decline.

Certain sales promotion expenses, particularly advertising, yield current *and* future benefits. Measuring future benefits from these expenses is extremely difficult. Expenditures

for future-directed marketing activities are largely discretionary, and our analysis must consider year-to-year trends in these expenditures. Beyond the ability of these expenditures to influence future sales, they provide insights into management's tendency to "manage" reported earnings.

General and Administrative Expenses.   Most general and administrative expenses are fixed, largely because these expenses include items like salaries and rent. There is a tendency for these expenses to increase, especially in prosperous times. When analyzing these expenses, our analysis should direct attention at both the trend in these expenses and the percentage of revenues they consume.

Disaggregation of Asset Turnover

The standard measure of asset turnover in determining return on assets is:

$$\frac{\text{Sales}}{\text{Average Net Operating Assets}}$$

Further evaluation of component changes in turnover rates for individual assets can be useful in a company analysis. This section examines asset turnover for *component asset and liability accounts.*

Asset turnover measures the intensity with which companies utilize assets. The most relevant measure of asset utilization is sales, since sales are essential to profits. In special cases like start-up or development companies, our analysis of turnover must recognize that most assets are committed to *future* business activities. Also, unusual supply problems or work stoppages are conditions affecting asset utilization and require special evaluation and interpretation. This section describes various analyses using disaggregation of asset turnover.

In general, turnover rates reflect the relative productivity of assets, that is, the level of sales volume that we derive from each dollar invested in a particular asset. All things equal, we prefer higher turnover rates for assets than lower (the reverse is true for liabilities). This generalization must be viewed with caution, however. We can increase turnover rates by lowering our investment in assets, but this might be counterproductive. Consider, for example, if we choose to reduce the amount of credit we grant to our customers. At some point we will lose sales, and any benefits we derive from the lower levels of receivables will be offset by a decline in sales. The same argument holds for inventories. We need a certain level of inventories to support our current level of sales. Any less and we run the risk of stock-outs and lost sales. So, our investment in assets must be *optimized,* not necessarily minimized.

Accounts Receivable Turnover.   The accounts receivable turnover rate is defined as follows:

Accounts receivable turnover = Sales/Average accounts receivable

Receivables are an asset that must be financed at some cost of capital. In addition, receivables entail collection risk and require additional overhead in the form of credit and collection departments. From this perspective, reducing the level of receivables lessens these costs. If we reduce receivables too much with an overly restrictive credit policy, however, the reduction adversely impacts sales. Receivables must, therefore, be effectively managed.

An alternate view of accounts receivable turnover is the **average collection period,** which follows:

$$\text{Average collection period = Accounts receivable/Average daily sales}$$

This metric reflects how long accounts receivable are outstanding, on average. In general, the lower the receivables turnover rate, the higher the average collection period.

Inventory Turnover.   The inventory turnover rate is computed as follows:

$$\text{Inventory turnover = Cost of goods sold/Average inventory}$$

This ratio uses cost of goods sold (COGS) as the measure of sales volume because the denominator, inventory, is reported at cost, not retail. Accordingly, both the numerator and denominator are measured at cost. A decline in the inventory turnover ratio often indicates that the firm's products are uncompetitive, perhaps because of a style that is out of fashion or noncurrent technology. In addition, inventories must be financed at some cost and they yield additional costs in the form of insurance, storage, logistics, theft, and the like. Companies want enough inventory to meet customer demand without stock-outs, and no more.

Like the average collection period, an alternate view of the inventory turnover rate follows:

$$\text{Average inventory days outstanding = Inventory/Average daily cost of goods sold}$$

The average inventory days outstanding gives us some indication of the length of time that inventories are available for sale. We want the average inventory days outstanding to be as short as possible. This can be accomplished by minimizing raw materials through production management techniques, like just-in-time deliveries, or the reduction of work-in-progress inventory from use of efficient production processes that eliminate bottlenecks. In addition, companies desire to minimize finished goods inventory by producing to order, not to estimated demand, if possible. These management tools increase inventory turnover and reduce the inventory days outstanding.

Long-Term Operating Asset Turnover.   Long-term operating asset turnover is computed as follows:

$$\text{Long-term operating asset turnover = Sales/Average long-term operating assets}$$

Capital intensive industries, such as manufacturing companies, require large investments in long-term assets. Accordingly, such companies have lower long-term operating asset turnovers than do less capital intensive companies, like service businesses. Long-term operating assets must be financed at some cost of capital. In addition, they must be insured and maintained. Moreover, since investment capital is a finite resource, every dollar invested in long-term operating assets is one dollar less that can be invested in other more quickly turning earning assets. For these reasons, companies desire to minimize the investment in long-term operating assets required to generate a dollar of sales.

The long-term operating asset turnover rate can be increased by either increasing the numerator by increasing throughput (sales) or by reducing the denominator. Reducing long-term operating assets is a difficult process. Aside from outright disposal of underutilized assets, many companies have attempted to reduce their investment in long-term operating assets by acquiring them together with other companies. Corporate alliances, joint ventures, and special purpose entities (discussed in Chapter 3) are some of the techniques that are effectively used to reduce investment in long-term operating assets.

Accounts Payable Turnover.   Current operating assets like inventories are financed in large part by accounts payable. Such payables usually represent interest-free financing and are, therefore, less expensive than using borrowed money to finance inventory purchases or production. Accordingly, companies use trade credit whenever possible. This is called *leaning on the trade.* The **accounts payable turnover rate** is computed as:

$$\text{Accounts payable turnover} = \text{Cost of goods sold/Average accounts payable}$$

Like inventories, payables are reported at cost, not retail prices. Thus, for consistency with the denominator, cost of goods sold (not sales) is used in the numerator. All else equal, companies prefer to utilize this cheap source of financing as much as possible and, therefore, have a lower accounts payable turnover rate (meaning a higher level of payables). Lowering the accounts payable turnover rate is accomplished by delaying payment to suppliers, and this delay in payment can damage relations with the supplier if used excessively. Payables, therefore, must be managed carefully.

A metric analogous to accounts payable turnover is the **average payable days outstanding,** which follows:

$$\text{Average payable days outstanding} = \text{Accounts payable/Average daily} \\ \text{cost of goods sold}$$

A lower accounts payable turnover rate corresponds to a higher average payable days outstanding.

Net Operating Working Capital Turnover.   Net operating working capital is equal to operating current assets less operating current liabilities. Net operating working capital is an asset that must be financed just like any other asset. Consequently, companies desire to *optimize* investment in this asset. The operating working capital turnover rate is computed as follows:

$$\text{Net operating working capital turnover} = \text{Net sales/Average net operating} \\ \text{working capital}$$

Companies generally desire a higher net operating working capital turnover rate than a lower one, all else equal, because a higher operating working capital turnover reflects less investment in working capital for each dollar of sales. Net operating working capital turns more quickly as receivables and inventories turn more quickly, and it also turns more quickly when companies lean on the trade (when payables turn more slowly). Thus, turnover of net operating working capital improves as a result of proper management of its components.

ANALYZING RETURN ON COMMON EQUITY

Return on common shareholders' equity (ROCE), or simply return on common equity, is of great interest to the shareholders of a company. Creditors usually receive a fixed return on their financing. Preferred shareholders usually receive a fixed dividend. Yet common shareholders are provided no fixed or promised returns. These shareholders have claims on the *residual* earnings of a company only after all other financing sources are paid. Accordingly, the return on shareholders' equity is most important to common shareholders. The relation between return on shareholders' equity and return on net operating assets is also important as it bears on the analysis of a company's success with financial leverage.

Return on common shareholders' equity serves a key role in equity valuation. Recall the accounting-based stock valuation formula from Chapter 1:

$$V_t = BV_t + \frac{NI_{t+1} - (k \times BV_t)}{(1+k)} + \frac{NI_{t+2} - (k \times BV_{t+1})}{(1+k)^2} + \cdots$$

where V is company value, BV is book value of stockholders' equity, NI is net income, and k is cost of equity capital (the return that shareholders *expect* to earn on their investment). Through algebraic simplification, the formula can be restated in terms of future returns on common shareholders' equity (ROCE):

$$V_t = BV_t + \frac{(ROCE_{t+1} - k)BV_t}{(1+k)} + \frac{(ROCE_{t+2} - k)BV_{t+1}}{(1+k)^2} + \cdots$$

where ROCE is as defined above. This formula is intuitively appealing. Namely, it implies that companies with expected ROCE greater than the investors' required rate of return (k) increase value in excess of that implied by book value alone.

Disaggregating the Return on Common Equity

While ROCE in the above formula is computed using the beginning-of-period balance of common equity, in practice we use the *average* balance for the period under analysis. As with return on net operating assets, disaggregating return on common equity into components is extremely useful for analysis purposes. Recall that the return on common shareholders' equity is computed as:
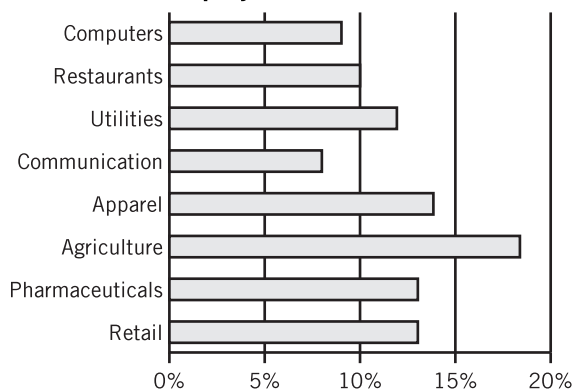
$$\frac{\text{Net income} - \text{Preferred dividends}}{\text{Average common shareholders' equity}}$$

Return on Equity for Selected Industries

We can disaggregate return on common shareholders' equity to obtain:[2]

$$\textbf{ROCE = RNOA + (LEV} \times \textbf{Spread)}$$

where **RNOA** is the return on net operating assets, as defined above, and the second term **(LEV × Spread)** is the effect of financial leverage. The first component of the financial leverage effect is the degree of financial leverage **(LEV)**, measured by the

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[2] An alternate view of the ROCE disaggregation is provided by the following equivalent equation:

$$\textbf{ROCE = Adjusted profit margin} \times \textbf{Asset turnover} \times \textbf{Leverage}$$

$$\frac{\begin{array}{c}\text{Net income} - \\ \text{Preferred dividends}\end{array}}{\begin{array}{c}\text{Average} \\ \text{common equity}\end{array}} = \frac{\begin{array}{c}\text{Net income} - \\ \text{Preferred dividends}\end{array}}{\text{Sales}} \times \frac{\text{Sales}}{\begin{array}{c}\text{Average} \\ \text{assets}\end{array}} \times \frac{\begin{array}{c}\text{Average} \\ \text{assets}\end{array}}{\begin{array}{c}\text{Average} \\ \text{common equity}\end{array}}$$

For Excell Corporation, the ROCE for Year 9 can alternatively be computed as follows:

$$\text{ROCE} = \frac{\$104{,}148}{\$1{,}782{,}254} \times \frac{\$1{,}782{,}254}{([\$2{,}120{,}735 + \$2{,}314{,}492]/2)} \times \frac{(\$2{,}120{,}735 + \$2{,}314{,}492)/2}{(\$668{,}305 + \$772{,}454)/2}$$

$$14.46\% = 5.844\% \quad \times 0.804 \quad\quad \times 3.078$$

relative amounts of net financial obligations and stockholders' equity used by the company to finance its net operating assets. The second component is the **spread,** the return on net operating assets (RNOA) less the net financial return **(NFR)**, where NFR is the average net return on financial (nonoperating) liabilities and assets. NFR is computed as the net financial expense **(NFE)** divided by the average net financial obligations **(NFO)** outstanding during the year. Just as NFO includes interest-bearing liabilities, less marketable securities and other nonoperating assets (such as discontinued operations and other nonstrategic investments), so does NFE include interest expense, less investment returns on marketable securities. Further, just as NFO can be either positive (reflecting more nonoperating liabilities than nonoperating assets) or negative (reflecting more nonoperating assets than nonoperating liabilities), so can NFE be positive (reflecting more interest expense than investment returns) or negative (reflecting more investment returns than interest expense). Specifically, the terms used in the equation above are defined as follows:

Term	Definition
LEV (financial leverage)	Average NFO/Average equity
NFO (net financial obligations)	Interest-bearing liabilities less marketable securities and other nonoperating assets (or NOA − Equity)
Spread	RNOA–NFR
NFR(net financial rate)	NFE/Average NFO
NFE (net financial expense)	Interest expense less investment returns from nonoperating assets

The effect of financial leverage (LEV) on ROE can be summarized as follows: financial leverage increases ROE so long as the spread is positive. Simply put, if a company can earn a higher return on net operating assets than the cost of debt that finances those assets, the excess return accrues to the benefit of its shareholders. All else equal, then, its shareholders would be better off continuing to employ lower-cost debt as the company expands than to finance that expansion with higher-cost equity capital (only up to a certain level, of course, as continued issuance of debt is risky).

Return on common equity (ROCE) consists of both an operating component (RNOA) and a nonoperating component (LEV $\times$ Spread). This operating and nonoperating distinction is important for several reasons:

- The vast majority of companies provide goods and services to customers as their primary business. This is where their expertise lies. Although finance divisions in companies are staffed with highly competent personnel, we want those companies to excel in their core competencies, and not to have poor operating performance masked by good financial performance.
- Operating activities have the most pronounced and long-lasting effects on company value. Research confirms that the stock price multiple on operating earnings is many times that on financial earnings.
- Although companies can realize an increase in ROE through judicious use of financial leverage, debt payments (interest and principal) are contractual obligations that must be met in good times and in bad. Increasing debt, therefore, increases the risk of default should cash flows decline, and default can have disastrous consequences for the firm, including bankruptcy.

It is for these reasons that analysts are vitally concerned about the proportion of ROCE that accrues from operating activities and that which results from an increase in financial leverage.

For Excell Corporation, the components of ROCE disaggregation for Year 9 follow:

RNOA .... 9.95% (from page 453 above)

LEV (Average NFO/Average SE) .... 0.64 $= \dfrac{(\$501,680 + \$420,212)/2}{(\$668,305 + \$772,454)/2}$

NFR (NFE/Average NFO) .... 2.90% $= \dfrac{\$20,843 \times (1 - 0.36)}{(\$501,680 + \$420,212)/2}$

Spread (RNOA − NFR)................................... 7.05% = (9.95% − 2.90%)

ROCE (RNOA + [LEV × Spread])..................14.46% = 9.95% + (0.64 × 7.05%)

ROCE using the standard definition is 14.46%, computed as $\left[\frac{\$104,148 - \$0}{(\$668,305 + \$772,454)/2}\right]$ per above. For Excell Corporation, 69% (9.95%/14.46%) of its ROCE is derived from operating activities (RNOA). The average for publicly traded firms is about 84% (Nissim and Penman, 2001). Excell is, therefore, relying relatively more than usual on nonoperating activities to achieve its current level of ROCE.

Return on nonoperating activities is a function of the degree of financial leverage and the spread. The degree of financial leverage is generally under the control of the company. It can decide the relative proportions of debt and equity in its capital structure and the amount of liquidity (excess cash invested in marketable securities) that it maintains.

Spread is a function of the interest rate on debt and investment returns. Both of these can be examined separately as follows:

$$\text{NFE/NFO} = (\text{Net interest rate} \times \text{FL/NFO}) - (\text{Return on financial assets} \times \text{FA/NFO})$$

where FL and FA are financial liabilities and financial assets, respectively. Most companies borrow money on fixed rates of interest (or utilize swaps and other derivative instruments to convert floating rate borrowings to fixed). The interest rate portion of NFE is, therefore, likely to be relatively fixed. The investment return portion, however, is likely to fluctuate with swings in the capital markets. An increased spread which arises from a boom market will not be sustained, and the resulting increase in ROCE should not be given as much weight in our analysis as will an increase resulting from more persistent operating returns.

ANALYSIS VIEWPOINT   **. . . YOU ARE THE CONSULTANT**

You are the management consultant to a client seeking a critical review of its performance. As part of your analysis you compute ROCE and its components (industry norms in parenthesis): asset turnover = 1.5 (1.0); leverage = 2.1 (2.2); pretax adjusted profit margin = 0.05 (0.14); and retention rate = 0.40 (0.24). What does your preliminary analysis of these figures suggest?

Computing Return on Invested Capital

This section applies our analysis of return on invested capital to the financial statements of Campbell Soup Company reproduced in Appendix A.

Return on Net Operating Assets (RNOA)

Campbell Soup's net operating assets (NOA) for years 11 and 10 are computed as follows ($ millions):

CAMPBELL SOUP NET OPERATING ASSETS (NOA)

	Year 11	Year 10
Cash	$ 178.9	$ 80.7
Accounts receivable	527.4	624.5
Inventories	706.7	819.8
Prepaid expenses	92.7	118.0
Property, plant, & equipment	1,790.4	1,717.7
Intangible assets	435.5	383.4
Other assets	404.6	349.0
Accounts payable	(482.4)	(525.2)
Accrued liabilities	(408.7)	(491.9)
Taxes payable	(67.7)	(46.4)
Other liabilities	(305.0)	(319.9)
Net operating assets	$2,872.4	$2,709.7

Its net financial obligations are computed as follows ($ millions):

CAMPBELL SOUP NET FINANCIAL OBLIGATIONS (NFO)

	Year 11	Year 10
Notes payable	$ 282.2	$ 202.3
Dividend payable	37.0	32.3
Long-term debt	772.6	805.8
Marketable securities	(12.8)	(22.5)
Net financial obligations	$1,079.0	$1,017.9

The operating accounting identity holds as follows ($ millions):

	Net operating assets (NOA)	=	Net financial obligations (NFO)	+	Stockholders' equity (SE)
Year 11	2,872.4	=	1,079.0	+	1,793.4
Year 10	2,709.7	=	1,017.9	+	1,691.8

Campbell Soup's net operating profit after tax (NOPAT) is computed as follows ($ millions):

Effective tax rate .... $39.8\% = \$265.9/\$667.4$

NOPAT .... $\$460.4 = (\$6,204.1 - \$4,095.5 - \$956.2 - \$306.7 - \$56.3 - \$0.8$
$- \$26.2 + \$2.4) \times (1 - 39.8\%)$

Campbell Soup's return on net operating assets (RNOA) for Year 11 is ($ millions),

$$\frac{\$460.4}{(\$2,872.4 + \$2,709.7)/2} = 16.5\%$$

Disaggregated Return on Net Operating Assets

We can disaggregate Campbell's Year 11 return on net operating assets (RNOA) into its operating profit margin and net operating asset turnover components:

$$\text{Return on net operating assets} = \text{Operating profit margin} \times \text{Net operating asset turnover}$$

$$= \frac{\text{NOPAT}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Average net operating assets}}$$

$$16.5\% = \frac{\$460.4}{\$6,204.1} \times \frac{\$6,204.1}{(\$2,872.4 + \$2,709.7)/2} = 7.42\% \times 2.22$$

Return on Common Equity

Campbell Soup's return on common shareholders' equity for Year 11 is computed as follows ($ millions and includes reference codes to Campbell's relevant financial statement items):

$$\text{ROCE} = \frac{\text{Net income} - \text{Preferred dividends}}{\text{Average common equity}}$$

$$= \frac{\$401.5\,\boxed{28} - \$0}{[(\$1,793.4) + (\$1,691.8)]/2\,\boxed{54}} = \frac{\$401.5}{\$1,742.6} = 23\%$$

Disaggregated Return on Common Equity

Campbell Soup's ROCE, computed as a function of RNOA, financial leverage, and spread is as follows ($ millions):

RNOA	16.5% (above)	
LEV	0.6%	$= [(\$1,079.0 + \$1,017.9)/2]/[(\$1,793.4 + \$1,691.8)/2]$
NFR	5.6%	$= (\$460.4 - \$401.5)/[(\$1,079.0 + \$1,017.9)/2]$
Spread	10.9%	$= 16.5\% - 5.6\%$
ROCE	23%	$= 16.5\% + (0.60 \times 10.9\%)$

Campbell Soup's RNOA is further disaggregated into its margin and turnover components as follows ($ millions):

RNOA	=	NOPAT margin (NOPAT/Sales)	×	NOA turnover (Sales/Average NOA)
16.5%	=	7.4% ($460.4/$6,204.1)	×	2.22 $6204.1/([2,872.4 + $2,709.7]/2)

The third level analysis proceeds with the computation of individual revenue and expense items as a percent of sales. For Year 11, the common size income

statement follows:

Campbell Soup Company Common Size Income Statement	Year 11
Sales	100.0%
Cost of goods sold	66.0
Gross profit	34.0
Marketing & selling expenses	15.4
Administrative expenses	4.9
Research & development expenses	0.9
Operating profit	12.8
Interest expense	1.9
Interest income	−0.4
Foreign exchange losses	0.0
Other expense	0.4
Special items	0.0
	10.9
Equity earnings in affiliates	0.0
Minority interests	−0.1
Earnings before taxes	10.8
Tax expense	4.3
Net earnings	6.5%

Turnover rates for individual assets are also computed as follows ($ millions):

Accounts receivable turnover (Sales/Average accounts receivables)	10.77[a]
Average collection period (Accounts receivable/Average daily sales)	31.03[b]
Inventory turnover (Cost of goods sold/Average inventories)	5.37[c]
Average inventory days outstanding (Inventories/Average daily cost of goods sold)	62.98[d]
Long-term operating asset turnover (Sales/Average long-term operating assets)	2.44[e]

[a]($6,204.1/([$527.4 + $624.5]/2))
[b]($527.4/([$6204.1/365]))
[c]($4,095.5/([$706.7 + $819.8])/2)
[d]($706.7/($4,095.5/365))
[e]($6,204.1/([$1,790.4 + $435.5 + $404.6] + [$1,717.7 + $383.4 + $349.0])/2)

   We conduct a comparative analysis of these ratios across time in the section on analysis of return on invested capital for the Comprehensive Case chapter. An analysis of return on invested capital measures across time is often revealing of company performance. If ROCE declines, it is important for us to identify the component(s) responsible for this decline to better assess past and future company performance. We can also then better assess areas of greatest potential improvement in ROCE and the likelihood of a company successfully pursuing this strategy. For example, if leverage cannot be prudently increased our analysis focuses on operating profit margin and net operating asset turnover. An analysis of company strategies and the potential for improvements also depends on industry and economic conditions. We pursue answers to questions such as: Is operating profit margin high or low in comparison with the industry? What is the potential improvement in net operating asset turnover in this industry? Evaluating returns using the structured approach described in this chapter and interpreting them in their proper context can greatly aid our analysis.

Analysis Research
■ ■ ■ ■ ■ ■ ■

RETURN ON COMMON SHAREHOLDERS' EQUITY

How does a company's return on common shareholders' equity (ROCE) behave across time? Do certain companies consistently have high or low ROCE? Do companies' ROCEs tend to move toward an average ROCE? Analysis research has addressed these important questions. *On average,* a company's ROCE for the current period is a good predictor of its ROCE for the next period. However, as the time horizon increases, a company's ROCE tends to converge toward the average industry ROCE. This is usually attributed to the effects of competition. Companies that are able to sustain high ROCEs typically command large premiums over book value.

A large portion of the variability in companies' ROCEs is due to changes in RNOA. This is because, on average, leverage factors do not vary significantly over time. Finally, disaggregating net income into operating and nonoperating components improves forecasts.

Assessing Growth in Common Equity
Equity Growth Rate

We can assess the common equity growth rate of a company through earnings retention. This analysis emphasizes equity growth *without* resort to external financing. To assess equity growth, we assume earnings retention *and* a constant dividend payout over time. The **equity growth rate** is computed as:

$$\text{Equity growth rate} = \frac{\text{Net income} - \text{Preferred dividends} - \text{Common dividends}}{\text{Average common equity}}$$

The equity growth rate for Year 11 of Campbell Soup, using its financial statements reproduced in Appendix A, is computed as:

$$14.9\% = \frac{\$401.5 \boxed{28} - \$0 - \$142.2 \boxed{89}}{(\$1,793.4 + \$1,691.8) \div 2 \boxed{54}}$$

This measure implies that Campbell Soup can grow 14.9% per year without increasing its current level of financing and assuming a continuation of current levels of profitability and common stock dividends.

Sustainable Equity Growth Rate

The **sustainable equity growth rate,** or simply sustainable equity growth, recognizes that internal growth for a company depends on *both* earnings retention and the return earned on the earnings retained. Specifically, the **sustainable equity growth rate** is computed as:

$$\text{Sustainable equity growth rate} = \text{ROCE} \times (1 - \text{Payout rate})$$

For Campbell Soup Company, we find the dividend payout rate for Year 11 equals 35% ($142.2/$401.5). We then compute Campbell Soup's sustainable equity growth rate for Year 11 as:

$$14.95\% = 23\% \times (1 - 0.35)$$

When estimating future equity growth rates it is often advisable to average (or otherwise recognize) sustainable growth rates for several recent years. We should also recognize potential changes in earnings retention and forecasted ROCE.

.....APPENDIX 8A CHALLENGES OF DIVERSIFIED COMPANIES

The analysis of financial statements of diversified companies must separate and interpret the impact of individual business segments on the company as a whole. This is challenging because different segments or divisions can experience varying rates of profitability, risk, and growth opportunities. Their existence is an important reason why our analysis requires considerable detailed information by business segment. Our evaluation, projection, and valuation of earnings requires this information be separated into segments sharing characteristics of variability, growth, and risk. Asset composition and financing requirements of segments often vary and demand separate analysis. A creditor is interested in knowing which segments provide cash and which use it. The makeup of investing and financing activities, the size and profitability of segments, and the performance of segment management provide important information. We show in Chapter 11 that income forecasting benefits from forecasting by segments.

REPORTING BY SEGMENTS

Information reported on operating results and financial position by segments varies. Full disclosure would provide detailed income statements, balance sheets, and statements of cash flow for each important segment. However, full disclosure by segments is rare in practice because of difficulties in separating segments and management's reluctance to release information that can harm its competitive position.

Regulatory agencies have established reporting requirements for industry segments, international activities, export sales, and major customers. Evaluating risk and return is a major objective of financial statement analysis, and practice recognizes the value of segment disclosures in this evaluation. Analysis of companies operating across industry segments or geographic areas, which often have different rates of profitability, risk, and growth, is aided by segment data. These data assist us in analyzing uncertainties affecting the timing and amount of expected cash inflows and outflows.

Practice considers a segment significant if its sales, operating income (or loss), *or* identifiable assets are 10% or more of the combined amounts of all the company's operating segments. To ensure that these segments constitute a substantial portion of a company's operations, the combined sales of all segments reported must be at least 75% of the company's combined sales. For each segment, companies must report selected annual financial information (see *SFAS 131*) including: (1) sales—both to other segments and to external customers; (2) operating income—revenues less operating expenses; (3) identifiable assets; (4) interest and tax expenses or benefits; (5) special items' gains and losses; and (6) depreciation, depletion, and amortization expense. Additionally, if a company derives 10% or more of revenues from sales to a single customer, revenues from this customer must be reported. The SEC also requires a narrative description of the company's business by operating segments such as information on competition, customer dependence, principal products and services, backlogs, sources and availability of raw materials, patents, research and development costs, number of employees, and the seasonality of its business.

ANALYSIS IMPLICATIONS OF SEGMENT REPORTS

Diversified companies, and the loss of identity for subsidiary companies in consolidated financial statements, create challenges for analysis. While segment information is available, our analysis must be careful in using this information for profitability tests. The more specific and detailed segment information is, the more dependent it is on accounting allocations of revenues and expenses. Allocation of common costs as practiced in internal accounting is often based on notions of fairness, reasonableness, and acceptability to managers. These notions are of little relevance to our profitability analysis. Allocations of joint expenses are often arbitrary and limited in their validity and precision. Examples are research and development costs, promotion expenses, advertising costs, interest, pension costs, federal and state income taxes, and general and administrative costs. There are no accepted principles in allocating or transferring costs of one segment to another. We must recognize these limitations when relying on segment reports.

Segment reports are and must be analyzed as "soft" information–information subject to manipulation and preinterpretation by management. It must be treated with uncertainty, and inferences drawn from these data must be subjected to alternative sources of verification. Nevertheless, segment data supported by alternative evidence can be extremely useful for analysis. Specifically, segment data can aid our analysis of:

- *Sales growth.* Analysis of trends in sales by segments is useful in assessing profitability. Sales growth is often the result of one or more factors including: (1) price changes, (2) volume changes, (3) acquisitions/divestitures, and (4) changes in exchange rates. A company's Management's Discussion and Analysis section usually offers insights into the causes of sales growth.
- *Asset growth.* Analysis of trends in identifiable assets by segments is relevant for our profitability analysis. Comparing capital expenditures to depreciation can reveal the segments undergoing "real" growth. When analyzing geographic segment reports, our analysis must be alert to changes in foreign currency exchange rates that can significantly affect reported values.
- *Profitability.* Measures of operating income to sales and operating income to identifiable assets by segment are useful in analyzing profitability. Due to limitations with segment income data, our analysis should focus on trends versus absolute levels.

Exhibit CC.1 in the Comprehensive Case chapter reports a summary of segment information for Campbell Soup Company. Note 2 of Campbell Soup's financial statements also reports geographic area information.

Analysis Research
■ ■ ■ ■ ■ ■   **USEFULNESS OF SEGMENT DATA**

Analysis research provides evidence that segment disclosures are useful in forecasting future profitability. We know that total sales and earnings of a company equals the sum of the sales and earnings of all segments (less any intercompany transactions). As long as different segments are subject to different economic factors, the accuracy of segment-based forecasts should exceed that of forecasts based on consolidated data.

Combining company-specific segment data with industry-specific forecasts improves the accuracy of sales and earnings forecasts. Evidence shows that the introduction of segment reporting requirements increased the accuracy and reduced the dispersion of earnings forecasts made by professional securities analysts. This implies that our profitability analysis can also benefit from segment data.

GUIDANCE ANSWERS TO ANALYSIS VIEWPOINTS

AUDITOR

Joint analysis is the assessment of one measure of company performance relative to another. In the case of our manufacturing client, both *individual* analyses yield percentage changes within the ±5% acceptable range. However, a joint analysis would suggest a more alarming situation. Consider a joint analysis using profit margin (net income/sales). The client's profit margin is 11.46% ($2,060,000 − $1,824,000/$2,060,000) for the current year compared with 5.0% ($2,000,000 − $1,900,000/$2,000,000) for the prior year–a 129% increase in profit margin! This is what the audit partner is concerned with, and encourages expanded audit tests including joint analysis to verify or refute the client's figures.

CONSULTANT

Your preliminary analysis highlights deviations from the norm in (1) asset turnover, (2) pretax adjusted profit margin, and (3) retention rate. Asset turnover for your client is better than the norm. Your client appears to efficiently use its assets. One note of warning: we need to be assured all assets are accounted for and properly valued, and we want to know if the company is sufficiently replacing its aging assets. Your client's pretax adjusted profit margin is 60% lower than the norm. This is alarming, especially in light of the positive asset turnover ratio. Our client has considerably greater costs than the norm, and we need to direct efforts to identify and analyze these costs. Retention rate is also considerably worse than competitors. Our client is paying a greater proportion of its income in taxes. We need to utilize tax experts to identify and appropriately plan business activities with tax considerations in mind.

QUESTIONS

8–1. How is return on invested capital used as an internal management tool?

8–2. Why is return on invested capital one of the most relevant measures of company performance? How do we use this measure in our analysis of financial statements?

8–3. Why is interest, expense ignored when computing return on net operating assets (RNOA)?

8–4. Discuss the motivation for excluding "nonproductive" assets from invested capital when computing return. What circumstances justify excluding intangible assets from invested capital?

8–5. Why must income used in computing return on invested capital be adjusted to reflect the capital base (denominator) used in the computation?

8–6. What is the relation between return on net operating assets and sales? Consider both NOPAT sales and sales to net operating assets in your response.

8–7. Company A acquires Company B because the latter has a NOPAT margin exceeding the industry norm. After acquisition, a shareholder complains that the acquisition lowered return on net operating assets. Discuss possible reasons for this occurrence.

8–8. Company X's NOPAT margin is 2% of sales. Company Y has a net operating asset turnover of 12. Both companies' RNOA are 6% and are considered unsatisfactory by industry norms. What is the net operating asset turnover of Company X? What is the NOPAT margin for Company Y? What strategic actions do you recommend to the managements of the respective companies?

8–9. What is the purpose of measuring asset turnover for different asset categories?

8–10. What factors (limitations) enter into our evaluation of return on net operating assets?

8–11. How is the equity growth rate computed? What does it measure?

8–12. *a.* How do return on net operating assets and return on common equity differ?
b. What are the components of return on common shareholders' equity? What do the components measure?

8–13. *a.* Equity turnover is sales divided by average shareholders' equity. What does equity turnover measure? How is it related to return on common equity? (*Hint:* Look at the components of ROCE.)
b. "Growth in earnings per share from an increase in equity turnover is unlikely to continue indefinitely." Do you agree or disagree with this assertion? Explain your answer and discuss the components of equity turnover for their impact on earnings.

8–14. What circumstances justify including convertible debt as equity capital when computing return on shareholders' equity?

(CFA Adapted)

EXERCISES

FIT Corporation's return on net operating assets (RNOA) is 10% and its tax rate is 40%. Its net operating assets ($4 million) are financed entirely by common shareholders' equity. Management is considering its options to finance an expansion costing $2 million. It expects return on net operating assets to remain unchanged. There are two alternatives to finance the expansion:

1. Issue $1 million bonds with 12% coupon, and $1 million common stock.
2. Issue $2 million bonds with 12% coupon.

Required:

a. Determine net operating income after tax (NOPAT) and net income for each alternative.
b. Compute return on common shareholders' equity for each alternative (use ending equity).
c. Calculate the assets-to-equity ratio for each alternative.
d. Compute return on net operating assets and explain how the level of leverage interacts with it in helping determine which alternative management should pursue.

EXERCISE 8–1
Analyzing Financial Leverage for Alternative Financing Strategies

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Roll Corporation's return on net operating assets (RNOA) is 10% and its tax rate is 40%. Its net operating assets ($10 million) are financed entirely by common shareholders' equity. Management is considering using bonds to finance an expansion costing $6 million. It expects return on net operating assets to remain unchanged. There are two alternatives to finance the expansion:

1. Issue $2 million bonds with 5% coupon and $4 million common stock.
2. Issue $6 million bonds with 6% coupon.

Required:

a. Compute Roll's current net operating income after tax (NOPAT) and net income.
b. Determine net income and net operating income after tax for each alternative financing plan.
c. Compute return on common shareholders' equity for each alternative (use ending equity).
d. Explain any difference in the ROCE for the alternative plans computed in (*c*). Include a discussion of leverage in your response.

EXERCISE 8–2
Analyzing Returns and Strategies of Alternative Financing

Selected financial information from Syntex Corporation is reproduced below:

1. NOA turnover (average NOA equals ending NOA) is 2.
2. NOPAT margin equals 5%.
3. Leverage ratio (average NFO/average common equity) is 1.786, and the Spread is 4.4%.

Required:

a. Compute return on net operating assets (RNOA).
b. Compute return on common equity using its three major components.
c. Analyze the disaggregation of return on common equity. What is the "leverage advantage (in percent return)" accruing to common equity"?

EXERCISE 8–3
Disaggregating Return Measures for Analyzing Leverage

Refer to the financial data in Case 10–5 (on page 595). In analyzing this company, you feel it is important to differentiate between operating success and financing decisions.

Required:

a. Explain the difference between ABEX's ROCE in Year 5 and in Year 9. Your analysis should include computation and discussion of the components determining return on common shareholders' equity.
b. Explain why ABEX's earnings per share nearly doubled between Year 5 and Year 9 despite the decline in its return on common shareholders' equity.

(CFA Adapted)

EXERCISE 8–4
Disaggregating and Analyzing Return on Common Equity

CHECK
(*a*) Year 9 ROCE, 9.07%

EXERCISE 8–5

Analyzing Returns and Effects of Leverage

Selected financial information for ADAM Corporation is reproduced below:

1. NOA turnover (average NOA equals ending NOA) is 3.
2. NOPAT margin is 7%.
3. Leverage ratio (average NFO to average common equity) is 1.667, and the Spread is 8.4%.

Required:

a. Compute return on net operating assets (RNOA).
b. Compute return on common equity using its three major components.
c. Prepare an analysis of the composition of return on common equity describing the advantage or disadvantage accruing to common shareholders' equity from use of leverage.

EXERCISE 8–6

Analyzing Financial Leverage for Shareholders' Returns

Rose Corporation's condensed balance sheet for Year 2 is reproduced below:

Assets

Current assets....................................	$ 250,000
Noncurrent assets	1,750,000
Total assets......................................	$2,000,000

Liabilities and Equity

Current liabilities..............................	$ 200,000
Noncurrent liabilities (8% bonds)	675,000
Common stockholders' equity............	1,125,000
Total liabilities and equity.................	$2,000,000

Additional Information:

1. Net income for Year 2 is $157,500.
2. Income tax rate is 50%.
3. Amounts for total assets and shareholders' equity are the same for Years 1 and 2.
4. All assets and current liabilities are considered to be operating.

Required:

a. Determine whether leverage (from long-term debt) benefits Rose's shareholders. (*Hint:* Examine ROCE with and without leverage.)
b. Compute Rose's NOPAT and RNOA (use ending NOA).
c. Demonstrate the favorable effect of leverage given the disaggregation of ROCE and your answer to part (b).

EXERCISE 8–7

Understanding Return Measures (multiple choice)

1. Which of the following situations best correspond with a ratio of "sales to average net tangible assets" exceeding the industry norm? (Choose one answer.)
   a. A company expanding plant and equipment during the past three years.
   b. A company inefficiently using its assets.
   c. A company with a large proportion of aged plant and equipment.
   d. A company using straight-line depreciation.
2. A measure of asset utilization (turnover) is (choose one answer):
   a. Sales divided by average long-term operating assets.
   b. Return on net operating assets.

c. Return on common equity.
d. NOPAT divided by sales.

3. Return on net operating assets depends on the (choose one answer):
  a. Interest rates and pretax profits.
  b. Debt to equity ratio.
  c. After-tax operating profit margin and NOA turnover.
  d. Sales and total assets.

Return on net operating assets is a function of both profit margin and net operating asset turnover.

Required:

How do you believe that knowledge of operating profit margin and operating asset turnover would contribute to analysis of the reported return net operating assets for the following companies (that is, if the business reported high return on net operating assets, is it more likely that operating profit margin is especially high or that operating asset turnover is especially high or both)? Make your assessments relative to industry norms.

a. BMW
b. Ford
c. Sak's Fifth Avenue

d. Target
e. Wal-Mart

f. McDonald's
g. Amazon.com

EXERCISE 8–8
Predicting the Components of Return on Assets

Two auto dealers, Legend Auto Sales and Reliable Auto Sales, compete in the same area. Both purchase autos for $10,000 each and sell them for $12,000 each. Both maintain 10 cars on the lot at all times. A local basketball legend owns Legend Auto Sales. As a result, Legend sells 100 cars each year, while Reliable sells only 50 cars each year. The dealerships have no other revenues or expenses.

Required:

The town banker has denied Reliable Auto Sales a loan because its return on net operating assets is inferior to its rival. The owner of Reliable Auto Sales has engaged you to help explain why its return on net operating assets is inferior to that of Legend Auto Sales. Please prepare a memorandum for Reliable Auto Sales explaining the problem. Present quantitative support for your conclusions.

EXERCISE 8–9
Analyzing Return on Assets

A machine that produces hockey pucks costs $20,500 and produces 10 pucks per hour. Two similar companies purchase the machine and begin producing and selling pucks. The first company, Northern Sales is located in International Falls, Minnesota. The second company, Southern Sales is located in Huntsville, Alabama. Northern Sales operates the machine 20 hours per day to meet customer demand. Southern sales operates the machine 10 hours per day to meet customer demand. Sales data for the first month of operations are:

	Northern	Southern
Property, plant, and equipment	$20,500	$20,500
Accumulated depreciation—Property, plant, and equipment	$500	$500
Pucks sold	6,000 pucks	3,000 pucks
Sales	$12,000	$6,000

EXERCISE 8–10
Analyzing Property, Plant, and Equipment Turnover

Required:

Calculate the property, plant, and equipment turnover ratio (sales divided by average PPE) for both Northern Sales and Southern Sales. Explain how this ratio impacts the return on net operating assets of each company (assume the profit margin for each company is the same and that there has been no change in PPE).

EXERCISE 8–11

Analyzing the Relation between Revenues and Expenses

A press report carried the following news item: *General Motors, Ford, and Chrysler are expected to post losses on fourth-quarter operations despite sales gains. Automakers' revenues are based on factory output rather than retail sales by dealers, and last quarter's sales increases were from the bulging inventories at the end of the third quarter, rather than from models produced in the fourth quarter.*

Required:
Discuss likely accounting-based reasons that contribute to these expected fourth-quarter losses of automakers.

PROBLEMS

PROBLEM 8–1

Determining Return on Invested Capital (conceptual)

Quaker Oats, in its annual report discloses the following:

Quaker Oats Company

Financial Objectives: Provide total shareholder returns (dividends plus share price appreciation) that exceed both the cost of equity and the S&P 500 stock index over time. Quaker's total return to shareholders for Year 11 was 34%. That compares quite favorably to our cost of equity for the year, which was about 12%, and to the total return of the S&P 500 stock index, which was 7%. Driving this strong performance, real earnings from continuing operations grew 7.4% over the last five years, return on equity rose to 24.1%. [Quaker Oats' stock price at the beginning and end of Year 11 was $48 and $62, respectively, and the Year 11 dividends are $1.56 per share.]

The Benchmark for Investment

We use our cost of capital as a benchmark, or hurdle rate, to ensure that all projects undertaken promise a suitable rate of return. The cost of capital is used as the discount rate in determining whether a project will provide an economic return on its investment. We estimate a project's potential cash flows and discount these cash flows back to present value. This amount is compared with the initial investment costs to determine whether incremental value is created. Our cost of capital is calculated using the approximate market value weightings of debt and equity used to finance the Company.

Cost of equity + Cost of debt = Cost of capital

When Quaker is consistently able to generate and reinvest cash flows in projects whose returns exceed our cost of capital, economic value is created. As the stock market evaluates the Company's ability to generate value, this value is reflected in stock price appreciation.

The cost of equity. The cost of equity is a measure of the minimum return Quaker must earn to properly compensate investors for the risk of ownership of our stock. This cost is a combination of a "risk-free" rate and an "equity risk premium." The risk-free rate (the U.S. Treasury Bond rate) is the sum of the expected rate of inflation and a "real" return of 2 to 3%. For Year 11, the risk-free rate was approximately 8.4%. Investors in Quaker stock expect the return of a risk-free security plus a "risk premium" of about 3.6% to compensate them for assuming the risks in Quaker stock. The risk in holding Quaker stock is inherent in the fact that returns depend on the future profitability of the Company. Quaker's cost of equity was approximately 12%.

The cost of debt. The cost of debt is simply our after-tax, long-term debt rate, which was around 6.4%.

Required:

a. Quaker reports the "return to shareholders" to be 34%.
    (1) How is this return computed (provide calculations)?
    (2) How is this return different from return on common equity?

b. Explain how Quaker Oats arrives at a 3.6% "risk premium" needed by common shareholders as compensation for assuming the risks of Quaker Oats' stock.

c. Explain how Quaker Oats determines the 6.4% cost of debt.

Zear Company produces an electronic processor and sells it wholesale to manufacturing and retail outlets at $10 each. In Zear's Year 8 fiscal period, it sold 500,000 processors. Fixed costs for Year 8 total $1,500,000, including interest costs on its 7.5% debentures. Variable costs are $4 per processor for materials. Zear employs about 20 hourly paid plant employees, each earning $35,000 in Year 8.

PROBLEM 8–2
Analyzing Company Returns and Proposed Wage Increases

Zear is currently confronting labor negotiations. The plant employees are requesting substantial increases in hourly wages. Zear forecasts a 6% increase in fixed costs and no change in either the processor's price or in material costs for the processors. Zear also forecasts a 10% growth in sales volume for Year 9. To meet the necessary increase in production due to sales demand, Zear recently hired two additional hourly plant employees.

The condensed balance sheet for Zear at the end of fiscal Year 8 follows (the tax rate is 50%):

Assets		Liabilities and equity	
Current assets		Current liabilities	$2,000,000
Cash	$ 700,000	Long-term 7½% debenture	2,000,000
Receivables	1,000,000	6% preferred stock, 10,000	
Other	800,000	shares, $100 par value	1,000,000
Total current assets	2,500,000	Common stock	1,800,000
Fixed assets (net)	5,500,000	Retained earnings	1,200,000
Total assets	$8,000,000	Total liabilities and equity	$8,000,000

Required:

a. Compute Zear's return on invested capital for Year 8 where invested capital is:
   (1) Net operating assets at end of Year 8 (assume all assets and current liabilities are operating).
   (2) Common equity capital at end of Year 8.

b. Calculate the maximum annual wage increase Zear can pay each plant employee and show a 10% return on net operating assets.

CHECK
(*a*) RNOA = 7.92%

(CFA Adapted)

Selected income statement and balance sheet data from **Merck & Co.** for Year 9 are reproduced below:

Merck & Co.

PROBLEM 8–3
Disaggregating and Interpreting Return on Common Equity

MERCK & COMPANY, INC.
Year 9 Selected Financial Data ($ millions)

Income Statement Data

Sales revenue	$7,120
Depreciation	230
Interest expense	10
Pretax income	2,550
Income taxes	900
Net income	1,650

(continued)

PROBLEM 8–3
(concluded)

Balance Sheet Data

Current assets	$4,850
Fixed assets, net	2,400
Total assets	7,250
Current liabilities	3,290
Long-term debt	100
Shareholders' equity	3,860
Total liabilities & shareholders' equity	7,250

CHECK
(*a*) ROCE = 42.7%
(*b*) RNOA = 42.0%

Required:

a. Calculate return on common equity for Year 9 using year-end amounts and assuming no preferred dividends.

b. Disaggregate Merck's ROCE into operating (RNOA) and nonoperating components. Comment on Merck's use of leverage. (Assume all assets and current liabilities are operating and a 35% tax rate.)

PROBLEM 8–4

Disaggregating and Analyzing Return on Invested Capital

As a financial analyst at a debt-rating agency, you are asked to analyze return on invested capital and asset utilization (turnover) measures for ZETA Corporation. Selected financial information for Years 5 and 6 of ZETA Corporation are reproduced in the Comprehensive Case chapter (see Case CC–2).

CHECK
(*a*) RNOA = 18.14%

Required:

a. Compute the following return measures for Year 6 (assume a 50% tax rate):
   (1) Return on net operating assets.   (2) Return on common equity.

b. Disaggregate ROCE for Year 6. Comment on Zeta's use of financial leverage.

PROBLEM 8–5

Disaggregating and Analyzing Return on Common Equity

Selected financial statement data from Texas Telecom, Inc., for Years 5 and 9 are reproduced below ($ millions):

	Year 5	Year 9
Income Statement Data		
Revenues	$542	$979
Operating income	35	68
Interest expense	7	0
Pretax income	28	68
Income taxes	14	34
Net income	14	34
Balance Sheet Data		
Long-term operating assets	$ 52	$ 63
Working capital	123	157
Total liabilities	50	0
Total shareholders' equity	125	220

CHECK
(*a*) Yr. 5 RNOA = 10.0%

Required:

a. Calculate return on common equity and disaggregate ROCE for Years 5 and 9 using end-of-year values for computations requiring an average (assume fixed assets and working capital are operating and a 50% tax rate).

b. Comment on Texas Telecom's use of financial leverage.

Johnson Corporation sells primarily two products: (A) consumer cleaners and (B) industrial puri-fiers. Its gross margin and components for the past two years are:

	Year 7	Year 6
Sales revenue		
Product A..............................	$60,000	$35,000
Product B	30,000	45,000
Total......................................	90,000	80,000
Deduct cost of goods sold		
Product A..............................	50,000	28,000
Product B	19,500	27,000
Total......................................	69,500	55,000
Gross margin.........................	$20,500	$25,000

In Year 6, the selling price of A is $5 per unit, while in Year 7 it is $6 per unit. Product B sells for $50 per unit in both years. Security analysts and the business press expressed surprise at Johnson's 12.5% increase in sales and $4,500 decrease in gross margin for Year 7.

Required:

Prepare an analysis statement of the change in gross margin for Year 7 versus Year 6. Discuss and show the effects of changes in quantities, prices, costs, and product mix on gross margin.

Comparative income statements of Spyres Manufacturing Company for Years 9 and 8 are repro-duced below:

	Year 9	Year 8
Net sales.................................	$600,000	$500,000
Cost of goods sold....................	490,000	430,000
Gross margin	110,000	70,000
Operating expenses..................	101,000	51,000
Income before taxes.................	9,000	19,000
Income taxes...........................	2,400	5,000
Net income..............................	$ 6,600	$ 14,000

Required:

a. Prepare common size statements showing the percent of each item to net sales for both Year 8 and Year 9. Include a column reporting the percentage increase or decrease for Year 9 relative to Year 8 (round numbers to the tenth of 1%).

b. Interpret the trend shown in your percentage calculations of *a*. What areas identified from this analysis should be a matter of managerial concern?

PROBLEM 8–8

Variations in Income and Income Components

At a meeting of your company's Investment Policy Committee the possibility of investing in ZETA Corporation (see Case CC-2 in the Comprehensive Case chapter) is considered. During discussions, a committee member asked about the major factors explaining the change in ZETA Corporation's income from Year 5 to Year 6.

Required:

Analyze variations in income and income components for ZETA Corporation that compares Year 6 to Year 5. Analyze and interpret your results. (*Hint:* ZETA's notes are useful for this purpose.)

PROBLEM 8–9

Analyzing Line-of-Business Data (extending beyond the book)

Selected data from Kemp Corporation are reproduced below:

KEMP CORPORATION
Product-Line Information ($ thousands)

	Year 1	Year 2	Year 3	Year 4
Data communications equipment				
Net sales	$4,616	$5,630	$4,847	$6,890
Income contribution	570	876	996	1,510
Inventory	2,615	2,469	2,103	1,897
Time recording devices				
Net sales	3,394	4,200	4,376	4,100
Income contribution	441	311	34	412
Inventory	1,193	2,234	2,574	2,728
Hardware for electronics industry				
Net sales	—	—	$ 1,564	$ 1,850
Income contribution	—	—	771	919
Inventory	—	—	331	287
Home sewing products				
Net sales	$1,505	$ 1,436	1,408	1,265
Income contribution	291	289	276	342
Inventory	398	534	449	526
Corporate totals				
Net sales	9,515	11,266	12,195	14,105
Income contribution	1,302	1,476	2,077	3,183
Inventory	4,206	5,237	5,457	5,438

Required:

a. For Year 4, compute the following ratios:
   (1) Inventory/Sales.
   (2) Inventory/Income contribution.

b. Compute the percentage of each product line's income contribution to the total for each year. Interpret this evidence.

c. Comment on the desirability of an investment in each product line.

CASES

While you are an analyst at Investment Counselors, Inc., the senior portfolio manager at your firm makes a decision to increase sporting goods apparel manufacturer stocks in the firm's managed funds. You are assigned to recommend one stock as an initial investment to meet this long-run objective. You diligently analyze and evaluate all communication stocks and narrow the decision to two athletic shoe manufacturing companies: Nike and Reebok.

The senior portfolio manager requests that you analyze the internal sources of earnings growth for each company. You decide to disaggregate and evaluate the internal growth components for each company to explain any trends in your variable of interest, *return on common equity.* You identify the key components driving ROCE and develop the following spreadsheet:

CASE 8–1

Comprehensive Analysis of Return on Common Equity

Nike	Year 5	Year 4	Year 3	Year 2	Year 1
Return on equity (ROCE)	21.6%	12.1%	18.1%	17.8%	18.5%
Return on net operating assets (RNOA)	19.2%	15.5%	14.2%	13.4%	13.3%
Financial leverage (LEV)	14.4%	24.8%	32.8%	41.3%	46.0%
Spread	16.6%	−13.9%	11.9%	10.6%	11.3%
Sales growth	14.55%	8.13%	4.26%	5.49%	2.49%
Gross profit margin	42.9%	41.0%	39.3%	39.0%	39.9%
SG&A expense/Sales	32.7%	31.9%	31.4%	30.6%	31.5%
NOPAT/Sales	7.8%	7.1%	7.0%	6.6%	6.8%
Tax expense/Pretax income	34.8%	34.1%	34.3%	36.0%	37.0%
NOA turnover	2.44	2.19	2.03	2.02	1.96
Receivables turnover	5.83	5.50	5.78	5.95	5.79
Average collection period	62.62	66.33	63.19	61.37	63.09
Inventory turnover	4.45	4.37	4.29	4.03	4.13
Average inventory days outstanding	82.07	83.50	85.04	90.54	88.37
Long-term operating asset turnover	6.56	5.46	4.67	4.47	4.18
Accounts payable turnover	10.48	11.72	12.83	11.86	10.62
Average payable days outstanding	34.84	31.13	28.46	30.78	34.36
Return on equity (ROCE)	15.7%	15.1%	15.0%	13.4%	1.9%
Return on net operating assets (RNOA)	12.7%	12.3%	12.1%	10.1%	7.9%
Financial leverage (LEV)	36.7%	44.5%	53.8%	78.8%	101.0%
Spread	8.2%	6.3%	5.4%	4.2%	−6.0%
Sales growth	11.43%	4.51%	4.45%	−1.19%	−10.07%
Gross profit margin	38.4%	38.3%	36.7%	37.9%	38.5%
SG&A expense/Sales	32.2%	32.4%	31.8%	33.6%	35.2%
NOPAT/Sales	5.0%	4.8%	4.3%	3.8%	3.2%
Tax expense/Pretax income	30.8%	31.0%	31.0%	36.1%	36.0%
NOA turnover	2.55	2.59	2.84	2.66	2.50
Receivables turnover	7.31	7.77	7.42	6.81	6.20

(continued)

CASE 8–1
(concluded)

Reebok	Year 5	Year 4	Year 3	Year 2	Year 1
Average collection period	49.96	46.98	49.22	53.58	58.86
Inventory turnover	5.71	5.06	5.01	4.40	3.76
Average inventory days outstanding	63.95	72.10	72.88	82.88	97.17
Long-term operating asset turnover	13.67	12.62	12.31	10.25	9.03
Accounts payable turnover	13.33	13.16	12.66	10.92	9.99
Average payable days outstanding	27.37	27.74	28.83	33.43	36.54

Required:

a. Describe and interpret how the recent five-year trend in the components of ROCE determine the ROCE for both Nike and Reebok.

b. Recommend a "buy" on one of these companies based on your analysis. Support your recommendation with reference to your analysis in *(a)*.

CASE 8–2
Analyzing Return on Invested Capital

Walt Disney Company (Disney) is a diversified international entertainment company with operations in three business segments. Revenue and operating income data for the three segments are shown below.

Walt Disney Company

BUSINESS SEGMENT DATA
Years Ending September 30

($ millions) Business Segments	YEAR 13 Revenue	YEAR 13 Operating Income	YEAR 9 Revenue	YEAR 9 Operating Income
Theme Parks and Resorts	$3,441	$ 747	$2,595	$ 785
Film Entertainment	3,673	622	1,588	256
Consumer Products	1,415	355	411	188
	$8,529	$1,724	$4,594	$1,229

The profitability of the leisure-time industry is influenced by various factors including economic conditions, the amount of available leisure time, oil and transportation prices, and weather patterns. Disney management has been very aggressive in raising theme park admission prices. For the 10-year period ending in Year 13, admission prices increased at an annual rate of 8–9% compared to less than 4% for U.S. consumer price inflation. Disney's Film Entertainment business has grown rapidly because of increasing acceptance of The Disney Channel and, importantly, management efforts to exploit the expanding distribution opportunities available for its extensive

video library. Disney's Consumer Products revenue has also grown meaningfully as the company has moved its product mix aggressively toward direct publishing and direct retail and away from higher-margined licensing and royalty income sources. During the fourth quarter of fiscal Year 13 (ending September 30, Year 13), Disney wrote off the full carrying value of Euro Disney. The charge was $350 million ($218 million after tax).

WALT DISNEY COMPANY
Selected Financial Statement and Other Data
Years Ending September 30

($ millions except per share data)	Year 13	Year 9
Income Statement		
Revenue	$ 8,529	$4,594
Operating expenses	(6,968)	(3,484)
Interest expense	(158)	(24)
Investment and interest income	186	67
Income (loss) from Euro Disney	(515)	0
Pretax income	1,074	1,153
Taxes	(403)	(450)
Net income	$ 671	$ 703
Earnings per share	$ 1.23	$ 1.27
Dividends per share	$ 0.23	$ 0.11
Balance Sheet		
Cash	$ 363	$ 381
Receivables	1,390	224
Inventories	609	909
Other	1,889	662
Current assets	4,251	2,176
Property, plant, and equipment, net	5,228	3,397
Other assets	2,272	1,084
Total assets	$11,751	$6,657
Current liabilities	$ 2,821	$1,262
Borrowings	2,386	861
Other liabilities	1,514	1,490
Stockholder's equity	5,030	3,044
Total liabilities and stockholder's equity	$11,751	$6,657
Cash Flow from Operations	$ 2,145	$1,275
Other Data		
Common shares outstanding (millions)	544	552
Closing price, common stock per share	$ 37.75	$30.22

Note: Total assets except "other" current assets, current liabilities, and other liabilities are considered operating, as is the Euro Disney loss.

Required:

a. Calculate and disaggregate Disney's return on common equity for *each* of the *two* fiscal years ending September 30, Year 9, and September 30, Year 13 (use years-end figures for any ratio computations typically using averages).

b. Drawing only on your answers to part (*a*) and the data available, identify the *two* components that contributed most to the observed change in Disney's return on common equity between Year 9 and Year 13. State *two* reasons for the observed change in *each* of the *two* components.

(CFA Adapted)

CASE 8–3

Analysis of Common-Size Profitability Information

The following data are excerpted from the annual report of **Lands' End:**   **Lands' End**

For the period ended	Year 9	Year 8	Year 7	Year 6	Year 5
Net sales	100%	100%	100%	100%	100%
Cost of sales	55.0	53.4	54.5	57.0	57.6
Gross profit	45.0	46.6	45.5	43.0	42.4
Selling, general, and administrative	39.7	38.8	37.9	38.0	36.0
Other expenses	3.0	2.7	3.0	2.0	2.8
Net income	2.3%	5.1%	4.6%	3.0%	3.6%

Required:

a. Discuss three factors that determine the level of sales and the level of gross profit as a percentage of sales in the context of the operations of Lands' End.

b. Interpret the gross profit percentage (45% in fiscal Year 9) in simple terms and in the context of Lands' Ends operations.

c. Catalog mailing costs constitute a large percentage of the selling, general, and administrative costs for Lands' End. These costs have risen steadily as a percent of sales (only 32.4% in fiscal Year 4). Discuss drivers (determinants) of total catalog mailing costs and indicate ways that Lands' End can control these costs. With each suggestion, indicate how the level of sales might be affected.

CASE 8–4

Analysing Line-of-Business Data

Selected financial data for Petersen Corporation's revenue and income (contribution) are reproduced below:

Line of Business	Year 1	Year 2	Year 3	Year 4
Revenue				
Manufactured and engineered products				
Engineered equipment	$ 30,341	$ 29,807	$ 32,702	$ 43,870
Other equipment	5,906	5,996	6,824	7,424
Parts, supplies, and services	29,801	29,878	33,623	44,223
Total manufactured & engineered products	66,048	65,681	73,149	95,517
Engineering and erecting services	—	—	12,261	36,758
Total environmental systems group	66,048	65,681	85,410	132,275
Frye Copysystems	25,597	28,099	31,214	39,270
Sinclair & Valentine	—	53,763	57,288	60,973
A. L. Garber	16,615	15,223	20,445	24,808
Total graphics group	42,212	97,085	108,947	125,051
Total consolidated revenue	$108,260	$162,766	$194,357	$257,326

(continued)

Line of Business	Year 1	Year 2	Year 3	Year 4
Income				
Manufactured and engineered products.................. $	3,785	$ 3,943	$ 9,209	$ 10,762
Engineering and erecting services	—	—	1,224	3,189
International operations..	2,265	2,269	2,030	2,323
Total environmental systems group	6,050	6,212	12,463	16,274
Frye Copysystems	1,459	2,011	2,799	3,597
Sinclair & Valentine..	—	3,723	4,628	5,142
A. L. Garber	(295)	926	1,304	1,457
Total graphics group...	1,164	6,660	8,731	10,196
Total divisional income..	7,214	12,872	21,194	26,470
Unallocated expenses and taxes	(5,047)	(8,146)	(13,179)	(16,449)
Total income from continuing operations .... $	2,167	$ 4,726	$ 8,015	$10,021

CASE 8–4
(concluded)

Required:

a. Use common-size statements to analyze every division's (1) contribution to total consolidated revenue, (2) contribution to total divisional income, and (3) ratio of income to revenue.

b. Interpret and comment on the evidence revealed from your computations in *a*.

Sears and Wal-Mart

CASE 8–5
Analysis of Profitability, Turnover, and Leverage

Wal-Mart and Sears (prior to its merger with Kmart), two large retailers in the U.S., offer an interesting study in contrasts. Wal-Mart has steadily grown to become the world's largest retail company and probably the most successful story in the history of retailing, Sears, on the other hand, had a long and checkered past. In the early 1990s the company almost went out of business. It subsequently reinvented itself, made a comeback (although somewhat bumpier than its investors and creditors would have liked) and, finally, merged with Kmart. The table below provides some comparative information on the two companies for 1999 (the financial statements are available in Exhibits I and II).

$ Billions	Market Cap	Revenue	Total Assets	Equity	Net Income	Earnings Growth*	ROE	Dividend Payout	P/E Ratio	P/B Ratio
Sears	$ 11.21	$ 41.07	$36.95	$ 6.84	$1.45	5.5%	22.5%	24%	7.73	1.64
Wal-Mart	$244.02	$166.81	$70.349	$25.83	$5.38	17.5%	22.9%	16%	45.35	9.45

*Cannot compute form data provided

The differences between the two companies are striking, especially with respect to market valuation. While Wal-Mart's assets were twice that of Sears, its market capitalization at that time was more than 20 times that of Sears! The P/E and P/B ratios shed further light on this issue: the P/E and P/B ratios for Wal-Mart are almost six times as large as those of Sears!

This differential valuation is more surprising because Wal-Mart and Sears appeared to be equally profitable: in that year their ROEs were comparable at 22.5% and 22.9%, respectively. Part of the higher market valuation of Wal-Mart could be attributable to its superior growth: Wal-Mart's earnings grew at a compounded 17.5% per annum during the 1990s compared to 5.5% for Sears over a comparable period. However, earnings growth may not be the entire story. A more detailed analysis of the profitability of the two companies is called for, and it is important to analyze how each company generates this return.

CHECK
(2) Sears RNOA = 8.76%;
Wal-Mart
RNOA = 15.02%

Required:

1. Rearrange the income statement and the balance sheet of the two companies for 1999 and 1998 in the operating/nonoperating format described in the text (for example, compute NOA, NFO and SE for the balance sheet, and compute NOPAT, NFE and NI for the income statement.)

2. Provide a breakdown of the ROEs of the two companies for 1999, showing the financial and operating leverages described in the text and their effects (you may use closing balance sheet data for computation of the return ratios). What does this analysis tell you about the inherent riskiness of the two companies?

3. Analyze the profit margin and asset turnover ratios of Sears and Wal-Mart by using line item information from the financial statements.

4. Sears's low return-on-assets ratios and high leverage could be partly attributable to its credit card operations—in effect, Sears is partly a financial institution. Exhibit III provides select financial information about Sears' credit card and other businesses obtained from segment information in notes to its financial statements. Using this information, analyze the relative returns on Sears's retailing and financing businesses and its impact on the overall risk-return profile of the company.

5. Summarize your conclusions for the difference between the market capitalization for Sears and Wal-Mart using the analysis you performed in parts 1 through 4.

Sears' Financial Statements

Exhibit I

SEARS CONSOLIDATED STATEMENTS OF INCOME

($ millions)	1999	1998
Revenues		
Merchandise sales and services	$36,728	$36,957
Credit revenues	4,343	4,618
Total revenues	41,071	41,575
Costs and expenses		
Cost of sales, buying, and occupancy	27,212	27,444
Selling and administrative	8,418	8,384
Provision for uncollectible accounts	871	1,287
Depreciation and amortization	848	830
Interest	1,268	1,423
Restructuring and impairment costs	41	352
Total costs and expenses	38,658	39,720
Operating income	2,413	1,855
Other income, net	6	28
Income before income taxes, minority interest, and extraordinary loss	2,419	1,883
Income taxes	904	766
Minority interest	62	45
Income before extraordinary loss	1,453	1,072
Extraordinary loss on early extinguishment of debt, net of tax		24
Net income	$ 1,453	$ 1,048

SEARS CONSOLIDATED BALANCE SHEETS

($ millions)	1999	1998
Assets		
Current assets		
Cash and cash equivalents	$ 729	$ 495
Retained interest in transferred credit card receivables	3,144	4,294
Credit card receivables	18,793	18,946
Less allowance for uncollectible accounts	760	974
Net credit card receivables	18,033	17,972
Other receivables	404	397
Merchandise inventories	5,069	4,816
Prepaid expenses and deferred charges	579	506
Deferred income taxes	709	791
Total current assets	28,667	29,271
Property and equipment		
Land	370	395
Buildings and improvements	5,837	5,530
Furniture, fixtures, and equipment	5,209	4,871
Capitalized leases	496	530
Gross property and equipment	11,912	11,326
Less accumulated depreciation	5,462	4,946
Total property and equipment, net.	6,450	6,380
Deferred income taxes	367	572
Other assets	1,470	1,452
Total assets	$36,954	$37,675
Liabilities		
Current liabilities		
Short-term borrowings	$ 2,989	$ 4,624
Current portion of long-term debt and capitalized lease obligations	2,165	1,414
Accounts payable and other liabilities	6,992	6,732
Unearned revenues	971	928
Other taxes	584	524
Total current liabilities	13,701	14,222
Long-term debt and capitalized lease obligations	12,884	13,631
Postretirement benefits	2,180	2,346
Minority interest and other liabilities	1,350	1,410
Total liabilities	30,115	31,609
Shareholders' equity		
Common shares ($0.75 par value per share, 1,000 shares authorized, 369.1 and 383.5 shares outstanding)	323	323
Capital in excess of par value	3,554	3,583
Retained earnings	5,952	4,848
Treasury stock—at cost	(2,569)	(2,089)
Deferred ESOP expense	(134)	(175)
Accumulated other comprehensive income	(287)	(424)
Total shareholders' equity	6,839	6,066
Total liabilities and shareholders' equity	$36,954	$37,675

Exhibit II   *Wal-Mart's Financial Statements*
■ ■ ■ ■ ■ ■ ■

WAL-MART INCOME STATEMENT

($ millions)	1999	1998
Revenues		
Net sales	$165,013	$137,634
Other income—net	1,796	1,574
	166,809	139,208
Cost and expenses		
Cost of sales	129,664	108,725
Operating, selling and general and administrative expenses	27,040	22,363
Interest costs		
Debt	756	529
Capital leases	266	268
	157,726	131,885
Income before income taxes, minority interest, equity in unconsolidated subsidiaries, and cumulative effect of accounting change	9,083	7,323
Provision for income taxes		
Current	3,476	3,380
Deferred	(138)	(640)
	3,338	2,740
Income before minority interest, equity in unconsolidated subsidiaries, and cumulative effect of accounting change	5,745	4,583
Minority interest and equity in unconsolidated subsidiaries	(170)	(153)
Income before cumulative effect of accounting change	5,575	4,430
Cumulative effect of accounting change, net of tax benefit of $119	(198)	
Net income	$ 5,377	$4,430

WAL-MART CONSOLIDATED BALANCE SHEETS

($ millions)	1999	1998
Assets		
Current assets		
Cash and cash equivalents	$ 1,856	$ 1,879
Receivables	1,341	1,118
Inventories		
At replacement cost	20,171	17,549
Less LIFO reserve	378	473
Inventories at LIFO cost	19,793	17,076
Prepaid expenses and other	1,366	1,059
	24,356	21,132
Total current assets		
Property, plant, and equipment, at cost		
Land	8,785	5,219
Building and improvements	21,169	16,061
Fixtures and equipment	10,362	9,296
Transportation equipment	747	553
	41,063	31,129
Less accumulated depreciation	8,224	7,455
Net property, plant, and equipment	32,839	23,674
Property under capital lease		
Property under capital lease	4,285	3,335
Less accumulated amortization	1,155	1,036
Net property under capital leases	3,130	2,299
Other assets and deferred charges		
Net goodwill and other acquired intangible assets	9,392	2,538
Other assets and deferred charges	632	353
Total Assets	$70,349	$49,996
Liabilities and Shareholders' Equity		
Current liabilities		
Commercial paper	$ 3,323	$ —
Accounts payable	13,105	10,257
Accrued liabilities	6,161	4,998
Accrued income taxes	1,129	501
Long-term debt due within one year	1,964	900
Obligations under capital leases due within one year	121	106
Total current liabilities	25,803	16,762
Long-term debt	13,672	6,908
Long-term obligations under capital leases	3,002	2,699
Deferred income taxes and other	759	716
Minority interest	1,279	1,799
Shareholders' equity		
Preferred stock ($ .10 par value; 100 shares authorized, none issued)		
Common stock ($ .10 par value; 5,500 shares authorized, 4,457 and 4,448 issued and outstanding in 2000 and 1999, respectively)	446	445
Capital in excess of par value	714	435
Retained earnings	25,129	20,741
Other accumulated comprehensive income	(455)	(509)
Total shareholders' equity	25,834	21,112
Total liabilities and shareholders' equity	$70,349	$49,996

Select Segment Information—Sears *Exhibit III*

($ millions)	1999 Credit	Others	Total	1998 Credit	Others	Total
Revenue	$ 4,085	$36,986	$41,071	$ 4,369	$37,206	$41,575
Depreciation	14	792	848	13	784	830
Interest revenue	0	59	59	0	59	59
Interest expense	1,116	211	1,327	1,244	238	1,482
Operating income	1,347	1,388	2,413	1,144	922	1,855
Total assets	$20,622	$14,541	$36,954	$21,605	$25,364	$37,675

Note: Columns for Others and Credit may not add up to Total because of corporate expenses.