

summary

Strategic management case analysis provides an effective method of learning how companies analyze problems, make decisions, and resolve challenges. Strategic cases include detailed accounts of actual business situations. The purpose of analyzing such cases is to gain exposure to a wide variety of organizational and managerial situations. By putting yourself in the place of a strategic decision maker, you can gain an appreciation of the difficulty and complexity of many strategic situations. In the process you can learn how to ask good strategic questions and enhance your analytical skills. Presenting case analyses can also help develop oral and written communication skills.

In this chapter we have discussed the importance of strategic case analysis and described the five steps involved in conducting a case analysis: becoming familiar with the material, identifying problems, analyzing strategic issues, proposing alternative solutions, and making recommendations. We have also discussed how to get the most from case analysis. Finally, we have described how the case analysis process follows the analysis-decision-action cycle of strategic management and outlined issues and questions that are associated with each of the previous 12 chapters of the text.

key terms

case analysis 416

financial ratio analysis 423

integrative thinking 428

devil's advocacy 434

dialectical inquiry 435

references

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APPENDIX 1 TO CHAPTER 13

Financial Ratio Analysis*

Standard Financial Statements

One obvious thing we might want to do with a company's financial statements is to compare them to those of other, similar companies. We would immediately have a problem, however. It's almost impossible to directly compare the financial statements of two companies because of differences in size.

For example, Oracle and IBM are obviously serious rivals in the computer software market, but IBM is much larger (in terms of assets), so it is difficult to compare them directly. For that matter, it's difficult to even

compare financial statements from different points in time for the same company if the company's size has changed. The size problem is compounded if we try to compare IBM and, say, SAP (of Germany). If SAP's financial statements are denominated in euros, then we have a size *and* a currency difference.

To start making comparisons, one obvious thing we might try to do is to somehow standardize the financial statements. One very common and useful way of doing this is to work with percentages instead of total dollars. The resulting financial statements are called *common-size statements*. We consider these next.

Common-Size Balance Sheets

For easy reference, Prufrock Corporation's 2014 and 2015 balance sheets are provided in Exhibit 13A.1. Using these, we construct common-size balance sheets by expressing each item as a percentage of total assets. Prufrock's 2014 and 2015 common-size balance sheets are shown in Exhibit 13A.2.

EXHIBIT 13A.1 Prufrock Corporation

Prufrock Corporation



	2014	2015
Assets		
Current assets		
Cash	\$ 84	\$ 98
Accounts receivable	165	188
Inventory	<u>393</u>	<u>422</u>
Total	<u>\$ 642</u>	<u>\$ 708</u>
Fixed assets		
Net plant and equipment	<u>\$ 2,731</u>	<u>\$ 2,880</u>
Total assets	<u>\$3,373</u>	<u>\$3,588</u>

Liabilities and Owners' Equity

Current liabilities

Accounts payable	\$ 312	\$ 344
Notes payable	<u>231</u>	<u>196</u>
Total	<u>\$ 543</u>	<u>\$ 540</u>
Long-term debt	<u>\$ 531</u>	<u>\$ 457</u>

Owners' equity

Common stock and paid-in surplus	\$ 500	\$ 550
Retained earnings	<u>1,799</u>	<u>2,041</u>
Total	\$2,299	\$2,591
Total liabilities and owners' equity	<u>\$3,373</u>	<u>\$3,588</u>

Balance sheets as of December 31, 2014 and 2015 (\$ millions).

EXHIBIT 13A.1

Prufrock Corporation Prufrock Corporation

EXHIBIT 13A.2 Prufrock Corporation

Prufrock Corporation



	2014	2015	Change
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Assets

Current assets

Cash	2.5%	2.7%	+	.2%
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Accounts receivable	4.9	5.2	+ .3
Inventory	<u>11.7</u>	<u>11.8</u>	<u>+ .1</u>
Total	<u>19.1</u>	<u>19.7</u>	<u>+ .6</u>
Fixed assets			
Net plant and equipment	<u>80.9</u>	<u>80.3</u>	<u>— .6</u>
Total assets	<u>100.0%</u>	<u>100.0%</u>	<u>— .0%</u>

Liabilities and Owners' Equity

Current liabilities

Accounts payable	9.2%	9.6%	<u>+ .4%</u>
Notes payable	<u>6.8</u>	<u>5.5</u>	<u>—1.3</u>
Total	<u>16.0</u>	<u>15.1</u>	<u>— .9</u>

Long-term debt	<u>15.7</u>	<u>12.7</u>	<u>—3.0</u>
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Owners' equity

Common stock and paid-in surplus	14.8	15.3	<u>+ .5</u>
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Retained earnings	<u>53.3</u>	<u>—</u>	<u>±</u>
		<u>56.9</u>	<u>3.6</u>

Total	<u>68.1</u>	<u>—</u>	<u>+4.1</u>
		<u>72.2</u>	

Total liabilities and owners' equities	<u>100.0%</u>	<u>100.0%</u>	<u>— .0%</u>
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Common-size balance sheets as of December 31, 2014 and 2015 (%).

Note: Numbers may not add up to 100.0% due to rounding.

EXHIBIT 13A.2

Prufrock Corporation Prufrock Corporation

Notice that some of the totals don't check exactly because of rounding errors. Also notice that the total change has to be zero since the beginning and ending numbers must add up to 100 percent.

In this form, financial statements are relatively easy to read and compare. For example, just looking at the two balance sheets for Prufrock, we see that current assets were 19.7 percent of total assets in 2015, up from 19.1 percent in 2014. Current liabilities declined from 16 percent to 15.1 percent of total liabilities and equity over that same time. Similarly, total equity rose from 68.1 percent of total liabilities and equity to 72.2 percent.

Overall, Prufrock's liquidity, as measured by current assets compared to current liabilities, increased over the year. Simultaneously, Prufrock's indebtedness diminished as a percentage of total assets. We might be tempted to conclude that the balance sheet has grown “stronger.”

Common-Size Income Statements

A useful way of standardizing the income statement, shown in Exhibit 13A.3, is to express each item as a percentage of total sales, as illustrated for Prufrock in Exhibit 13A.4.

EXHIBIT 13A.3 Prufrock Corporation

Prufrock Corporation



Sales	\$2,311
Cost of goods sold	1,344
Depreciation	<u>276</u>
Earnings before interest and taxes	\$ 691
Interest paid	<u>141</u>
Taxable income	<u>\$ 550</u>
Taxes (34%)	<u>187</u>

Net income	<u>\$ 363</u>
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Dividends	\$ 121
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Addition to retained earnings	242
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2015 income statement (\$ millions).

EXHIBIT 13A.3

Prufrock Corporation Prufrock Corporation

EXHIBIT 13A.4 Prufrock Corporation

Prufrock Corporation



Sales	100.0%
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Cost of goods sold	58.2
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Depreciation	<u>11.9</u>
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Earnings before interest and taxes	29.9
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Interest paid	<u>6.1</u>
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Taxable income	<u>23.8</u>
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Taxes (34%)	<u>8.1</u>
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Net income	<u>15.7%</u>
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Dividends	5.2%
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Addition to retained earnings	10.5
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2015 Common-size income statement (%).

EXHIBIT 13A.4

Prufrock Corporation Prufrock Corporation

This income statement tells us what happens to each dollar in sales. For Prufrock, interest expense eats up \$.061 out of every sales dollar and taxes take another \$.081. When all is said and done, \$.157 of each dollar

flows through to the bottom line (net income), and that amount is split into \$.105 retained in the business and \$.052 paid out in dividends.

These percentages are very useful in comparisons. For example, a relevant figure is the cost percentage. For Prufrock, \$.582 of each \$1 in sales goes to pay for goods sold. It would be interesting to compute the same percentage for Prufrock's main competitors to see how Prufrock stacks up in terms of cost control.

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Ratio Analysis

Another way of avoiding the problems involved in comparing companies of different sizes is to calculate and compare *financial ratios*. Such ratios are ways of comparing and investigating the relationships between different pieces of financial information. We cover some of the more common ratios next, but there are many others that we don't touch on.

One problem with ratios is that different people and different sources frequently don't compute them in exactly the same way, and this leads to much confusion. The specific definitions we use here may or may not be the same as others you have seen or will see elsewhere. If you ever use ratios as a tool for analysis, you should be careful to document how you calculate each one, and, if you are comparing your numbers to those of another source, be sure you know how its numbers are computed.

For each of the ratios we discuss, several questions come to mind:

1. How is it computed?
2. What is it intended to measure, and why might we be interested?
3. What is the unit of measurement?
4. What might a high or low value be telling us? How might such values be misleading?
5. How could this measure be improved?

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Financial ratios are traditionally grouped into the following categories:

1. Short-term solvency, or liquidity, ratios.
2. Long-term solvency, or financial leverage, ratios.

3. Asset management, or turnover, ratios.

4. Profitability ratios.

5. Market value ratios.

We will consider each of these in turn. In calculating these numbers for Prufrock, we will use the ending balance sheet (2015) figures unless we explicitly say otherwise. The numbers for the various ratios come from the income statement and the balance sheet.

Short-Term Solvency, or Liquidity, Measures

As the name suggests, short-term solvency ratios as a group are intended to provide information about a firm's liquidity, and these ratios are sometimes called *liquidity measures*. The primary concern is the firm's ability to pay its bills over the short run without undue stress. Consequently, these ratios focus on current assets and current liabilities.

For obvious reasons, liquidity ratios are particularly interesting to short-term creditors. Since financial managers are constantly working with banks and other short-term lenders, an understanding of these ratios is essential.

One advantage of looking at current assets and liabilities is that their book values and market values are likely to be similar. Often (though not always), these assets and liabilities just don't live long enough for the two to get seriously out of step. On the other hand, like any type of near cash, current assets and liabilities can and do change fairly rapidly, so today's amounts may not be a reliable guide to the future.

Current Ratio

Current Ratio One of the best-known and most widely used ratios is the *current ratio*. As you might guess, the current ratio is defined as:

$$\text{Current ratio} = \frac{\text{Current assets}}{\text{Current liabilities}}$$

For Prufrock, the 2015 current ratio is:

$$\text{Current ratio} = \frac{\$708}{\$540} = 1.31 \text{ times}$$

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Because current assets and liabilities are, in principle, converted to cash over the following 12 months, the current ratio is a measure of short-term liquidity. The unit of measurement is either dollars or times. So we could say Prufrock has \$1.31 in current assets for every \$1 in current liabilities, or we could say Prufrock has its current liabilities covered 1.31 times over.

To a creditor, particularly a short-term creditor such as a supplier, the higher the current ratio, the better. To the firm, a high current ratio indicates liquidity, but it also may indicate an inefficient use of cash and other short-term assets. Absent some extraordinary circumstances, we would expect to see a current ratio of at least

1, because a current ratio of less than 1 would mean that net working capital (current assets less current liabilities) is negative. This would be unusual in a healthy firm, at least for most types of businesses.

The current ratio, like any ratio, is affected by various types of transactions. For example, suppose the firm borrows over the long term to raise money. The short-run effect would be an increase in cash from the issue proceeds and an increase in long-term debt. Current liabilities would not be affected, so the current ratio would rise.

Finally, note that an apparently low current ratio may not be a bad sign for a company with a large reserve of untapped borrowing power.

Quick (or Acid-Test) Ratio

Quick (or Acid-Test) Ratio Inventory is often the least liquid current asset. It's also the one for which the book values are least reliable as measures of market value, since the quality of the inventory isn't considered. Some of the inventory may later turn out to be damaged, obsolete, or lost.

More to the point, relatively large inventories are often a sign of short-term trouble. The firm may have overestimated sales and overbought or overproduced as a result. In this case, the firm may have a substantial portion of its liquidity tied up in slow-moving inventory.

To further evaluate liquidity, the *quick*, or *acid-test*, *ratio* is computed just like the current ratio, except inventory is omitted:

$$\text{Quick ratio} = \frac{\text{Current assets} - \text{Inventory}}{\text{Current liabilities}}$$

Notice that using cash to buy inventory does not affect the current ratio, but it reduces the quick ratio. Again, the idea is that inventory is relatively illiquid compared to cash.

For Prufrock, this ratio in 2015 was:

$$\text{Quick ratio} = \frac{\$708 - 422}{\$540} = .53 \text{ times}$$

The quick ratio here tells a somewhat different story than the current ratio, because inventory accounts for more than half of Prufrock's current assets. To exaggerate the point, if this inventory consisted of, say, unsold nuclear power plants, then this would be a cause for concern.

Cash Ratio

Cash Ratio A very short-term creditor might be interested in the *cash ratio*:

$$\text{Cash ratio} = \frac{\text{Cash}}{\text{Current liabilities}}$$

You can verify that this works out to be .18 times for Prufrock.

Long-Term Solvency Measures

Long-term solvency ratios are intended to address the firm's long-run ability to meet its obligations, or, more

generally, its financial leverage. These ratios are sometimes called *financial leverage ratios* or just *leverage ratios*. We consider three commonly used measures and some variations.

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Total Debt Ratio

Total Debt Ratio The *total debt ratio* takes into account all debts of all maturities to all creditors. It can be defined in several ways, the easiest of which is:

$$\begin{aligned}\text{Total debt ratio} &= \frac{\text{Total assets} - \text{Total equity}}{\text{Total assets}} \\ &= \frac{\$3,588 - 2,591}{\$3,588} = .28 \text{ times}\end{aligned}$$

In this case, an analyst might say that Prufrock uses 28 percent debt.¹ Whether this is high or low or whether it even makes any difference depends on whether or not capital structure matters.

Prufrock has \$.28 in debt for every \$1 in assets. Therefore, there is \$.72 in equity (\$1 - .28) for every \$.28 in debt. With this in mind, we can define two useful variations on the total debt ratio, the *debt-equity ratio* and the *equity multiplier*:

$$\begin{aligned}\text{Debt-equity ratio} &= \text{Total debt} / \text{Total equity} \\ &= \$.28 / \$.72 = .39 \text{ times} \\ \text{Equity multiplier} &= \text{Total assets} / \text{Total equity} \\ &= \$1 / \$.72 = 1.39 \text{ times}\end{aligned}$$

The fact that the equity multiplier is 1 plus the debt-equity ratio is not a coincidence:

$$\begin{aligned}\text{Equity multiplier} &= \text{Total assets} / \text{Total equity} = \$1 / \$.72 = 1.39 \\ &= (\text{Total equity} + \text{Total debt}) / \text{Total equity} \\ &= 1 + \text{Debt-equity ratio} = 1.39 \text{ times}\end{aligned}$$

The thing to notice here is that given any one of these three ratios, you can immediately calculate the other two, so they all say exactly the same thing.

Times Interest Earned

Times Interest Earned Another common measure of long-term solvency is the *times interest earned* (TIE) *ratio*. Once again, there are several possible (and common) definitions, but we'll stick with the most traditional:

$$\begin{aligned}\text{Times interest earned ratio} &= \frac{\text{EBIT}}{\text{Interest paid}} \\ &= \frac{\$691}{\$141} = 4.9 \text{ times}\end{aligned}$$

As the name suggests, this ratio measures how well a company has its interest obligations covered, and it is often called the *interest coverage ratio*. For Prufrock, the interest bill is covered 4.9 times over.

Cash Coverage

Cash Coverage A problem with the TIE ratio is that it is based on earnings before interest and taxes (EBIT), which is not really a measure of cash available to pay interest. The reason is that depreciation, a noncash expense, has been deducted. Since interest is most definitely a cash outflow (to creditors), one way to define the *cash coverage ratio* is:

$$\begin{aligned}\text{Cash coverage ratio} &= \frac{\text{EBIT} + \text{Depreciation}}{\text{Interest paid}} \\ &= \frac{\$691 + 276}{\$141} = \frac{\$967}{\$141} = 6.9 \text{ times}\end{aligned}$$

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The numerator here, EBIT plus depreciation, is often abbreviated EBDIT (earnings before depreciation, interest, and taxes). It is a basic measure of the firm's ability to generate cash from operations, and it is frequently used as a measure of cash flow available to meet financial obligations.

Asset Management, or Turnover, Measures

We next turn our attention to the efficiency with which Prufrock uses its assets. The measures in this section are sometimes called *asset utilization ratios*. The specific ratios we discuss can all be interpreted as measures of turnover. What they are intended to describe is how efficiently, or intensively, a firm uses its assets to generate sales. We first look at two important current assets: inventory and receivables.

Inventory Turnover and Days' Sales in Inventory

Inventory Turnover and Days' Sales in Inventory During the year, Prufrock had a cost of goods sold of \$1,344. Inventory at the end of the year was \$422. With these numbers, *inventory turnover* can be calculated as:

$$\begin{aligned}\text{Inventory turnover} &= \frac{\text{Cost of goods sold}}{\text{Inventory}} \\ &= \frac{\$1,344}{\$422} = 3.2 \text{ times}\end{aligned}$$

In a sense, we sold off, or turned over, the entire inventory 3.2 times. As long as we are not running out of stock and thereby forgoing sales, the higher this ratio is, the more efficiently we are managing inventory.

If we know that we turned our inventory over 3.2 times during the year, then we can immediately figure out how long it took us to turn it over on average. The result is the average *days' sales in inventory*:

$$\begin{aligned}\text{Days' sales in inventory} &= \frac{365 \text{ days}}{\text{Inventory turnover}} \\ &= \frac{365}{3.2} = 114 \text{ days}\end{aligned}$$

This tells us that, on average, inventory sits 114 days before it is sold. Alternatively, assuming we used the most recent inventory and cost figures, it will take about 114 days to work off our current inventory.

For example, we frequently hear things like “Majestic Motors has a 60 days' supply of cars.” This means that, at current daily sales, it would take 60 days to deplete the available inventory. We could also say that Majestic

has 60 days of sales in inventory.

Receivables Turnover and Days' Sales in Receivables

Receivables Turnover and Days' Sales in Receivables Our inventory measures give some indication of how fast we can sell products. We now look at how fast we collect on those sales. The *receivables turnover* is defined in the same way as inventory turnover:

$$\begin{aligned}\text{Receivables turnover} &= \frac{\text{Sales}}{\text{Accounts receivable}} \\ &= \frac{\$2,311}{\$188} = 12.3 \text{ times}\end{aligned}$$

Loosely speaking, we collected our outstanding credit accounts and reloaned the money 12.3 times during the year.²

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This ratio makes more sense if we convert it to days, so the *days' sales in receivables* is:

$$\begin{aligned}\text{Days' sales in receivables} &= \frac{365 \text{ days}}{\text{Receivables turnover}} \\ &= \frac{365}{12.3} = 30 \text{ days}\end{aligned}$$

Therefore, on average, we collect on our credit sales in 30 days. For obvious reasons, this ratio is very frequently called the *average collection period* (ACP).

Also note that if we are using the most recent figures, we can also say that we have 30 days' worth of sales currently uncollected.

Total Asset Turnover

Total Asset Turnover Moving away from specific accounts like inventory or receivables, we can consider an important “big picture” ratio, the *total asset turnover ratio*. As the name suggests, total asset turnover is:

$$\begin{aligned}\text{Total asset turnover} &= \frac{\text{Sales}}{\text{Total assets}} \\ &= \frac{\$2,311}{\$3,588} = .64 \text{ times}\end{aligned}$$

In other words, for every dollar in assets, we generated \$.64 in sales.

A closely related ratio, the *capital intensity ratio*, is simply the reciprocal of (i.e., 1 divided by) total asset turnover. It can be interpreted as the dollar investment in assets needed to generate \$1 in sales. High values correspond to capital-intensive industries (e.g., public utilities). For Prufrock, total asset turnover is .64, so, if we flip this over, we get that capital intensity is $\$1/.64 = \1.56 . That is, it takes Prufrock \$1.56 in assets to create \$1 in sales.

Profitability Measures

The three measures we discuss in this section are probably the best known and most widely used of all financial ratios. In one form or another, they are intended to measure how efficiently the firm uses its assets and how efficiently the firm manages its operations. The focus in this group is on the bottom line, net income.

Profit Margin

Profit Margin Companies pay a great deal of attention to their *profit margin*:

$$\begin{aligned}\text{Profit margin} &= \frac{\text{Net income}}{\text{Sales}} \\ &= \frac{\$363}{\$2,311} = 15.7\%\end{aligned}$$

This tells us that Prufrock, in an accounting sense, generates a little less than 16 cents in profit for every dollar in sales.

All other things being equal, a relatively high profit margin is obviously desirable. This situation corresponds to low expense ratios relative to sales. However, we hasten to add that other things are often not equal.

For example, lowering our sales price will usually increase unit volume, but will normally cause profit margins to shrink. Total profit (or, more importantly, operating cash flow) may go up or down; so the fact that margins are smaller isn't necessarily bad. After all, isn't it possible that, as the saying goes, "Our prices are so low that we lose money on everything we sell, but we make it up in volume!"³

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Return on Assets

Return on Assets *Return on assets* (ROA) is a measure of profit per dollar of assets. It can be defined several ways, but the most common is:

$$\begin{aligned}\text{Return on assets} &= \frac{\text{Net income}}{\text{Total assets}} \\ &= \frac{\$363}{\$3,588} = 10.12\%\end{aligned}$$

Return on Equity

Return on Equity *Return on equity* (ROE) is a measure of how the stockholders fared during the year. Since benefiting shareholders is our goal, ROE is, in an accounting sense, the true bottom-line measure of performance. ROE is usually measured as:

$$\begin{aligned}\text{Return on equity} &= \frac{\text{Net income}}{\text{Total equity}} \\ &= \frac{\$363}{\$2,591} = 14\%\end{aligned}$$

For every dollar in equity, therefore, Prufrock generated 14 cents in profit, but, again, this is only correct in accounting terms.

Because ROA and ROE are such commonly cited numbers, we stress that it is important to remember they are accounting rates of return. For this reason, these measures should properly be called *return on book assets* and *return on book equity*. In addition, ROE is sometimes called *return on net worth*. Whatever it's called, it would be inappropriate to compare the results to, for example, an interest rate observed in the financial markets.

The fact that ROE exceeds ROA reflects Prufrock's use of financial leverage. We will examine the relationship between these two measures in more detail below.

Market Value Measures

Our final group of measures is based, in part, on information not necessarily contained in financial statements —the market price per share of the stock. Obviously, these measures can be calculated directly only for publicly traded companies.

We assume that Prufrock has 33 million shares outstanding and the stock sold for \$88 per share at the end of the year. If we recall that Prufrock's net income was \$363 million, then we can calculate that its earnings per share were:

$$\text{EPS} = \frac{\text{Net income}}{\text{Shares outstanding}} = \frac{\$363}{33} = \$11$$

Price-Earnings Ratio

Price-Earnings Ratio The first of our market value measures, the *price-earnings*, or PE, *ratio* (or multiple), is defined as:

$$\begin{aligned}\text{PE ratio} &= \frac{\text{Price per share}}{\text{Earnings per share}} \\ &= \frac{\$88}{\$11} = 8 \text{ times}\end{aligned}$$

In the vernacular, we would say that Prufrock shares sell for eight times earnings, or we might say that Prufrock shares have, or “carry,” a PE multiple of 8.

Since the PE ratio measures how much investors are willing to pay per dollar of current earnings, higher PEs are often taken to mean that the firm has significant prospects for future growth. Of course, if a firm had no or almost no earnings, its PE would probably be quite large; so, as always, be careful when interpreting this ratio.

Market-to-Book Ratio

Market-to-Book Ratio A second commonly quoted measure is the *market-to-book ratio*:

$$\begin{aligned}\text{Market-to-book ratio} &= \frac{\text{Market value per share}}{\text{Book value per share}} \\ &= \frac{\$88}{(\$2,591/33)} = \frac{\$88}{\$78.5} = 1.12 \text{ times}\end{aligned}$$

Notice that book value per share is total equity (not just common stock) divided by the number of shares outstanding.

Since book value per share is an accounting number, it reflects historical costs. In a loose sense, the market-to-book ratio therefore compares the market value of the firm's investments to their cost. A value less than 1 could mean that the firm has not been successful overall in creating value for its stockholders.

Conclusion

This completes our definition of some common ratios. Exhibit 13A.5 summarizes the ratios we've discussed.

EXHIBIT 13A.5 A Summary of Five Types of Financial Ratios

A Summary of Five Types of Financial Ratios

I. Short-term solvency, or liquidity, ratios Current ratio = $\frac{\text{Current assets}}{\text{Current liabilities}}$ Quick ratio = $\frac{\text{Current assets} - \text{Inventory}}{\text{Current liabilities}}$ Cash ratio = $\frac{\text{Cash}}{\text{Current liabilities}}$	Days' sales in receivables = $\frac{365 \text{ days}}{\text{Receivables turnover}}$ Total asset turnover = $\frac{\text{Sales}}{\text{Total assets}}$ Capital intensity = $\frac{\text{Total assets}}{\text{Sales}}$
II. Long-term solvency, or financial leverage, ratios Total debt ratio = $\frac{\text{Total assets} - \text{Total equity}}{\text{Total assets}}$ Debt-equity ratio = $\frac{\text{Total debt}}{\text{Total equity}}$ Equity multiplier = $\frac{\text{Total assets}}{\text{Total equity}}$ Times interest earned ratio = $\frac{\text{EBIT}}{\text{Interest paid}}$ Cash coverage ratio = $\frac{\text{EBIT} + \text{Depreciation}}{\text{Interest paid}}$	IV. Profitability ratios Profit margin = $\frac{\text{Net income}}{\text{Sales}}$ Return on assets (ROA) = $\frac{\text{Net income}}{\text{Total assets}}$ Return on equity (ROE) = $\frac{\text{Net income}}{\text{Total equity}}$ ROE = $\frac{\text{Net income}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Assets}} \times \frac{\text{Assets}}{\text{Equity}}$
III. Asset utilization, or turnover, ratios Inventory turnover = $\frac{\text{Cost of goods sold}}{\text{Inventory}}$ Days' sales in inventory = $\frac{365 \text{ days}}{\text{Inventory turnover}}$ Receivables turnover = $\frac{\text{Sales}}{\text{Accounts receivable}}$	V. Market value ratios Price-earnings ratio = $\frac{\text{Price per share}}{\text{Earnings per share}}$ Market-to-book ratio = $\frac{\text{Market value per share}}{\text{Book value per share}}$

EXHIBIT 13A.5

A Summary of Five Types of Financial Ratios A Summary of Five Types of Financial Ratios

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APPENDIX 2 TO CHAPTER 13

Sources of Company and Industry Information*

In order for business executives to make the best decisions when developing corporate strategy, it is critical for them to be knowledgeable about their competitors and about the industries in which they compete. The process used by corporations to learn as much as possible about competitors is often called “competitive

intelligence.” This appendix provides an overview of important and widely available sources of information that may be useful in conducting basic competitive intelligence. Much information of this nature is available in libraries in article databases and business reference books and on websites. This appendix will recommend a variety of them. Ask a librarian for assistance, because library collections and resources vary.

The information sources are organized into 10 categories:

- Competitive Intelligence
- Public or Private—Subsidiary or Division—U.S. or Foreign?
- Finding Public-Company Information
- Guides and Tutorials
- SEC Filings/EDGAR—Company Disclosure Reports
- Company Rankings
- Business Websites
- Strategic and Competitive Analysis—Information Sources
- Sources for Industry Research and Analysis
- Search Engines

Competitive Intelligence

Students and other researchers who want to learn more about the value and process of competitive intelligence should see four recent books on this subject. Ask a librarian about electronic (ebook) versions of the following titles.

- Rainer Michaeli. *Competitive Intelligence: Competitive Advantage through Analysis of Competition, Markets and Technologies*. London: Springer-Verlag, 2012.
- Erik Jannesson, Fredrik Nilsson, and Birger Rapp (Eds.). *Strategy, Control and Competitive Advantage*. Heidelberg: Springer, 2014.
- Hans Hedin, Irmeli Hirvensalo, and Markko Vaarnas. *Handbook of Market Intelligence: Understand, Compete and Grow in Global Markets*. Chichester, West Sussex, U.K.: John Wiley & Sons, 2011.
- Benjamin Gilad. *Early Warning: Using Competitive Intelligence to Anticipate Market Shifts, Control Risk, and Create Powerful Strategies*. New York: American Management Association, 2004.

Public or Private—Subsidiary or Division—U.S. or Foreign?

Companies traded on stock exchanges in the United States are required to file a variety of reports that disclose information about the company. This begins the process that produces a wealth of data on public companies and, at the same time, distinguishes them from private companies, which often lack available data. Similarly, financial data of subsidiaries and divisions are typically filed in a consolidated financial statement

by the parent company, rather than treated independently, thus limiting the kind of data available on them. On the other hand, foreign companies that trade on U.S. stock exchanges are required to file 20F reports, similar to the 10-K for U.S. companies, the most comprehensive of the required reports. The following directories provide brief facts about companies, including whether they are public or private, subsidiary or division, U.S. or foreign.

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Corporate Affiliations. New Providence, NJ: LexisNexis, 2014.

This eight-volume directory features brief profiles of major U.S. and foreign corporations, both public and private, as well as their subsidiaries, divisions, and affiliates. The directory also indicates hierarchies of corporate relationships. An online version of the directory allows retrieval of a list of companies that meet specific criteria. Results can be downloaded to a spreadsheet. The online version requires a subscription, available in some libraries.

ReferenceUSA. Omaha, NE: Infogroup. Inc.

ReferenceUSA is an online directory of more than 14 million businesses located in the United States. This resource is unique in that it includes both public and private companies regardless of how small or large, as well as educational, medical, and nonprofit organizations. Results can be summarized visually in chart format. Job opportunities are provided in search results when available. Specialized modules include consumer lifestyles, historical records, and health care. Check with a librarian regarding availability of specialized modules at your location.

Finding Public-Company Information

Most companies have their annual report to shareholders and other financial reports available on their corporate website. Note that some companies use a variation of their company name in their web address, such as Procter & Gamble: www.pg.com. A few “aggregators” have also conveniently provided an accumulation of links to many reports of U.S. and international corporations or include a PDF document as part of their database, although these generally do not attempt to be comprehensive.

The Public Register Online. Woodstock Valley, CT: Bay Tact Corp.

Public Register Online includes over 5,000 public-company shareholder annual reports and 10-K filings for online viewing. Links are provided to reports on individual companies' websites, official filings from the Securities and Exchange Commission website, stock information from the NYSE Euronext exchange, or some combination of these sources. A link is also provided on this website for ordering personal copies of hard-copy annual reports. www.annualreportservice.com/

Mergent Online. New York: Mergent, Inc.

Mergent Online is a database that provides company reports and financial statements for both U.S. and foreign public companies. Mergent's database has up to 25 years of quarterly and annual financial data that can be downloaded into a spreadsheet for analysis across time or across companies. Students should check with a librarian to determine the availability of this database at their college or university library.

<http://mergentonline.com>

Guides & Tutorials for Researching Companies and Industries

Guide to Financial Statements and How to Read Annual Reports. Armonk, NY: IBM.

These two educational guides, located on IBM's website, provide basic information on how to read and make sense of financial statements and other information in 10-K and shareholder annual reports for companies in general, not IBM specifically.

www.ibm.com/investor/help/guide/introduction.wss

www.ibm.com/investor/help/reports/introduction.wss

EDGAR Full-Text Search Frequently Asked Questions (FAQ). Washington, DC: U.S. Securities and Exchange Commission.

The capability to search full-text SEC filings (popularly known as EDGAR filings) was vastly improved when the SEC launched its new search form in late 2006. Features are explained at the FAQ page.

www.sec.gov/edgar/searchedgar/edgarfulltextfaq.htm

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Ten Steps to Industry Intelligence Research. Industry Tutorial. George A. Smathers Libraries, University of Florida, Gainesville, FL.

This tutorial provides a step-by-step approach for finding information about industries, with embedded links to recommended sources.

<http://businesslibrary.uflib.ufl.edu/industryresearch>

Conducting Business Research.

This tutorial provides a step-by-step process for business research.

www.lib.utexas.edu/services/instruction/learningmodules/businessresearch/intro.html

Guide to Financial Statements. Armonk, NY: IBM.

International Business Machines (IBM) created an educational guide for beginners to learn how to understand and interpret a typical financial statement.

How to Read Annual Reports. Armonk, NY: IBM.

International Business Machines (IBM) created an educational guide to help novices make sense of information that is typically included in annual 10-K and shareholder reports.

Ten Steps to Company Intelligence. Company Research Tutorial. William and Joan Schreyer Business Library, Penn State University, University Park, PA.

This tutorial provides a step-by-step approach to finding company intelligence information.

<http://businesslibrary.uflib.ufl.edu/companyresearch>

SEC Filings/EDGAR—Company Disclosure Reports

SEC Filings are the various reports that publicly traded companies must file with the Securities and Exchange Commission to disclose information about their corporation. These are often referred to as “EDGAR” filings, an acronym for the Electronic Data Gathering, Analysis and Retrieval System. Some websites and commercial databases improve access to these reports by offering additional retrieval features not available on the official (www.sec.gov) website.

EDGAR Database Full-Text Search. U.S. Securities and Exchange Commission (SEC), Washington, DC.

10-K reports and other required corporate documents are quickly made available in the SEC's EDGAR database. The 10-K is the most comprehensive disclosure document for company information. Some companies also include the annual report to shareholders as part of the 10-K filing, although it is not required. The SEC made changes to its search engine in 2013, improving visual layout, navigation, and search results. The SEC's legacy search engine is still available.

www.sec.gov/edgar/searchedgar/companysearch.html

OneSource. Concord, MA: Avention.

OneSource provides a recent year or so of SEC filings, but it includes a longer history of the shareholder annual reports.

LexisNexis Academic. SEC Filings & Reports. Bethesda, MD: LexisNexis.

SEC filings are available in *LexisNexis Academic* by selecting “Search by Content Type.” A company-name search or an advanced search can be conducted at that point.

Mergent Online—Government Filings Search.

This database also provides an alternative search interface for SEC filings. *Mergent's Government Filings* search allows searching by company name, ticker, CIK (Central Index Key) number, or industry SIC number. The search can be limited by date and by type of SEC file. Ask a librarian whether your library subscribes to *Mergent Online* for this feature.

www.mergentonline.com/filingsearch.php?type=edgar&criteriatype=findall&submitvalues

Company Rankings

Fortune 500. New York: Time Inc.

The *Fortune 500* list and other company rankings are published in the printed edition of *Fortune* magazine and are also available online.

http://money.cnn.com/magazines/fortune/fortune500/2014/full_list/index.html

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Forbes Global 2000. Forbes, Inc.

The companies listed on the Forbes Global 2000 are the biggest and most powerful in the world.

www.forbes.com/global2000/

Business Websites

Big Charts. San Francisco: MarketWatch, Inc.

BigCharts is a comprehensive and easy-to-use investment research website, providing access to professional-level research tools such as interactive charts, current and historical quotes, industry analysis, and intraday stock screeners, as well as market news and commentary. MarketWatch operates this website, a service of Dow Jones & Company. Supported by site sponsors, it is free to self-directed investors.

<http://bigcharts.marketwatch.com/>

GlobalEdge. East Lansing, MI: Michigan State University.

GlobalEdge is a web portal providing a significant amount of information about international business, countries around the globe, the U.S. states, industries, and news.

<http://globaledge.msu.edu/>

Yahoo Finance. Sunnyvale, CA: Yahoo! Inc.

This website links to information on U.S. markets, world markets, data sources, finance references, investment editorials, financial news, and other helpful websites.

<http://finance.yahoo.com>

Strategic and Competitive Analysis—Information Sources

Analyzing a company can take the form of examining its internal and external environments. In the process, it is useful to identify the company's strengths, weaknesses, opportunities, and threats (SWOT). Sources for this kind of analysis are varied, but perhaps the best would be articles from *The Wall Street Journal*, business magazines, and industry trade publications. Publications such as these can be found in the following databases available at many public and academic libraries. When using a database that is structured to allow it, try searching the company name combined with one or more keywords, such as “IBM and competition” or “Microsoft and lawsuits” or “AMR and fuel costs” to retrieve articles relating to the external environment.

ABI/INFORM Complete. Ann Arbor, MI: ProQuest LLC.

ABI/INFORM Complete provides abstracts and full-text articles covering disciplines such as management, law, taxation, economics, health care, and information technology from more than 6,800 scholarly, business, and trade publications. Other types of resources include company and industry reports, case studies, market research reports, and a variety of downloadable economic data.

Business Insights: Essentials. Farmington Hills, MI: Gale CENGAGE Learning.

Business Insights provides company and industry intelligence for a selection of public and private companies. Company profiles include parent-subsidary relationships, industry rankings, products and brands, industry statistics, and financial ratios. Selections of SWOT analysis reports are also available. The Company and Industry comparison tool allows a researcher to compare up to six companies' revenues, employees, and sales data over time. Results are available as an image, chart, or spreadsheet.

Business Source Complete. Ipswich, MA: EBSCO Publishing.

Business Source Complete is a full-text database with over 3,800 scholarly business journals covering management, economics, finance, accounting, international business, and more. The database also includes detailed company profiles for the world's 10,000 largest companies, as well as selected country economic reports provided by the Economist Intelligence Unit (EIU). The database includes case studies, investment and market research reports, SWOT analyses, and more. *Business Source Complete* contains over 2,400 peer-reviewed business journals.

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Hoover's Academic. Short Hills, NJ: Dun & Bradstreet.

Hoover's provides company and industry information for over 85 million public and private U.S. and international companies. The company profiles include the company's history, key financials, and executive information, as well as access to the latest news stories and SEC filings. Over 600 industries are covered in *Hoover's*. Custom reports can be created and downloaded.

OneSource. Concord, MA: Avention, Inc.

OneSource provides a wealth of information about U.S. and international public and private companies. The profiles include key executives, a financial report, and the corporate family structure. Also available are recent analyst reports, company SWOT analyses, industry reports, news and SEC filings information. Custom reports can be created and downloaded.

Thomson ONE Research.

Thomson ONE Research offers full-text analytical reports on more than 65,000 companies worldwide. The research reports are excellent sources for strategic and financial profiles of a company and its competitors and of industry trends. Developed by a global roster of brokerage, investment banking, and research firms, these full-text investment reports include a wealth of current and historical information useful for evaluating a company or industry over time.

International Directory of Company Histories. Detroit, MI: St. James Press, 1988–present. 163 volumes to date.

This directory covers more than 11,000 multinational companies, and the series is still adding volumes. Each company history is approximately three to five pages in length and provides a summary of the company's mission, goals, and ideals, followed by company milestones, principal subsidiaries, and competitors. Strategic decisions made during the company's period of existence are usually noted. This series covers public and private companies and nonprofit entities. Entry information includes a company's legal name, headquarters information, URL, incorporation date, ticker symbol, stock exchange listing, sales figures, and the primary North American Industry Classification System (NAICS) code. Further reading selections complete the entry information. Volumes 59 to the most recent are available electronically in the Gale Virtual Reference Library database from Gale CENGAGE Learning.

LexisNexis Academic. Bethesda, MD: LexisNexis.

LexisNexis Academic provides access to legal, company, and industry information, news sources, and public records. Industry information is available through the Company Info tab or the “Search by content type” selection. The Company Dossier tool allows a researcher to compare up to five companies' financial statements at one time with download capabilities.

The Wall Street Journal. New York: Dow Jones & Co.

This respected business newspaper is available in searchable full text from 1984 to the present in the *Factiva* database. The “News Pages” link provides access to current articles and issues of *The Wall Street Journal*. Dow Jones, publisher of the print version of the *Wall Street Journal*, also has an online subscription available at wsj.com. Some libraries provide access to *The Wall Street Journal* through the ProQuest Newspapers database.

Sources for Industry Research and Analysis

Factiva. New York: Dow Jones & Co.

The *Factiva* database has several options for researching an industry. One would be to search the database for articles in the business magazines and industry trade publications. A second option in *Factiva* would be to search in the Companies/Markets category for company/industry comparison reports.

Mergent Online. New York: Mergent Inc.

Mergent Online is a searchable database of over 60,000 global public companies. The database offers worldwide industry reports, U.S. and global competitors, and executive biographical information. *Mergent's* Basic Search option permits searching by primary industry codes (either SIC or NAICS). Once the search is executed, companies in that industry should be listed. A comparison or standard peer-group analysis can be created to analyze companies in the same industry on various criteria. The Advanced Search allows the user to search a wider range of financial and textual information. Results, including ratios for a company and its competitors, can be downloaded to a spreadsheet.

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North American Industry Classification System (NAICS)

The North American Industry Classification System has officially replaced the Standard Industrial Classification (SIC) as the numerical structure used to define and analyze industries, although some publications and databases offer both classification systems. The NAICS codes are used in Canada, the United States, and Mexico. In the United States, the NAICS codes are used to conduct an Economic Census every five years providing a snapshot of the U.S. economy at a given moment in time.

NAICS: www.census.gov/eos/www/naics/

Economic Census: www.census.gov/econ/census/

NetAdvantage. New York: S & P Capital IQ.

The database includes company, financial, and investment information as well as the well-known publication called *Industry Surveys*. Each industry report includes information on the current environment, industry trends, key industry ratios and statistics, and comparative company financial analysis. Available in HTML, PDF, or Excel formats.

Business Insights: Essentials. Farmington Hills, MI: Gale CENGAGE Learning.

Business Insights provides company and industry intelligence for a selection of public and private companies. Company profiles include parent-subsidary relationships, industry rankings, products and brands, industry

statistics, and financial ratios. Selections of SWOT analysis reports are also available. The Company and Industry comparison tool allows a researcher to compare up to six companies' revenues, employees, and sales data over time. Results are available as an image, chart, or spreadsheet.

Plunkett Research Online. Houston, TX: Plunkett Research, Ltd.

Plunkett's provides industry-specific market research, trends analysis, and business intelligence for 34 industries.

Search Engines

Google. Mountain View, CA: Google, Inc.

Recognized for its advanced technology, quality of results, and simplicity, the search engine Google is highly recommended by librarians and other expert web surfers.

www.google.com

Dogpile. Bellevue, WA: InfoSpace, Inc.

Dogpile is a metasearch engine that searches and compiles the most relevant results from more than 12 individual search engines.

<http://www.dogpile.com/>