

on equity (ROE). This percentage rate of return, of course, could be calculated directly by dividing net income by common equity. However, the Du Pont analysis demonstrates how the return on assets and the use of debt interact to determine the return on equity.

The Du Pont system can be used to analyze and improve the performance of a firm. On the left, or profit, side of the exhibit, attempts to increase profits and sales could be investigated. The possibilities of raising prices to improve profits (or lowering prices to improve volume) or seeking new products or markets, for example, could be studied. Cost accountants and production engineers could investigate ways to reduce costs. On the right, or turnover, side, financial officers could analyze the effect of reducing investment in various assets as well as the effect of using alternative financial structures.

There are two basic approaches to using financial ratios. One approach is to evaluate the corporation's performance over several years. Financial ratios are computed for different years, and then an assessment is made about whether there has been an improvement or deterioration over time. Financial ratios also can be computed for projected, pro forma, statements and compared with present and past ratios.

The other approach is to evaluate a firm's financial condition and compare it with the financial conditions of similar firms or with industry averages in the same period. Such a comparison gives insight into the firm's relative financial condition and performance. Financial ratios for industries are provided by Robert Morris Associates, Dun & Bradstreet, Prentice Hall, and various trade association publications. (Associations and their addresses are listed in the *Encyclopedia of Associations* and in the *Directory of National Trade Associations*.) Information about individual firms is available through *Moody's Manual*, Standard & Poor's manuals and surveys, annual reports to stockholders, and the major brokerage houses.

To the extent possible, accounting data from different companies must be so standardized that companies can be compared or so a specific company can be compared with an industry average. It is important to read any footnotes of financial statements, because various accounting or management practices can have an effect on the financial picture of the company. For example, firms using sale-leaseback methods may have leverage pictures quite different from what is shown as debts or assets on the balance sheet.

ANALYSIS OF THE SOURCES AND USES OF FUNDS

The purpose of this analysis is to determine how the company is using its financial resources from year to year. By comparing balance sheets from one year to the next, we can determine how funds were obtained and how these funds were employed during the year.

To prepare a statement of the sources and uses of funds, it is necessary to (1) classify balance sheet changes that increase and decrease cash, (2) classify from the income statement those factors that increase or decrease cash, and (3) consolidate this information on a sources and uses of funds statement form.

Sources of Funds That Increase Cash

1. A net decrease in any other asset than a depreciable fixed asset.
2. A gross decrease in a depreciable fixed asset.
3. A net increase in any liability.
4. Proceeds from the sale of stock.
5. The operation of the company (net income, and depreciation if the company is profitable).

Uses of Funds

1. A net increase in any other asset than a depreciable fixed asset.
2. A gross increase in depreciable fixed assets.
3. A net decrease in any liability.
4. A retirement or purchase of stock.
5. Payment of cash dividends.

We compute gross changes to depreciable fixed assets by adding depreciation from the income statement for the period to net fixed assets at the end of the period and then subtracting from the total net fixed assets at the beginning of the period. The residual represents the change in depreciable fixed assets for the period.

For the ABC Company, the following change would be calculated:

Net property and plant (2012)	\$1,175,000
Depreciation for 2012	+ 80,000
	<u>\$1,255,000</u>
Net property and plant (2011)	<u>-1,155,000</u>
	\$ 100,000

To avoid double counting, the change in retained earnings is not shown directly in the funds statement. When the funds statement is prepared, this account is replaced by the earnings after taxes, or net income, as a source of funds, and dividends paid during the year as a use of funds. The difference between net income and the change in the retained earnings account will equal the amount of dividends paid during the year. The accompanying sources and uses of funds statement was prepared for the ABC Company.

A funds analysis is useful for determining trends in working-capital positions and for demonstrating how the firm has acquired and employed its funds during some period.

EXHIBIT 6.B6 A Summary of Key Financial Ratios

Ratio	Calculation	Meaning
Liquidity Ratios:		
Current ratio	$\frac{\text{Current assets}}{\text{Current liabilities}}$	The extent to which a firm can meet its short-term obligations.
Quick ratio	$\frac{\text{Current assets} - \text{Inventory}}{\text{Current liabilities}}$	The extent to which a firm can meet its short-term obligations without relying on the sale of inventories.
Leverage Ratios:		
Debt-to-total-assets ratio	$\frac{\text{Total debt}}{\text{Total assets}}$	The percentage of total funds that are provided by creditors.
Debt-to-equity ratio	$\frac{\text{Total debt}}{\text{Total stockholders' equity}}$	The percentage of total funds provided by creditors versus the percentage provided by owners.
Long-term-debt-to-equity ratio	$\frac{\text{Long-term debt}}{\text{Total stockholders' equity}}$	The balance between debt and equity in a firm's long-term capital structure.
Times-interest-earned ratio	$\frac{\text{Profits before interest and taxes}}{\text{Total interest charges}}$	The extent to which earnings can decline without the firm becoming unable to meet its annual interest costs.
Activity Ratios:		
Inventory turnover	$\frac{\text{Sales}}{\text{Inventory of finished goods}}$	Whether a firm holds excessive stocks of inventories and whether a firm is selling its inventories slowly compared to the industry average.
Fixed assets turnover	$\frac{\text{Sales}}{\text{Fixed assets}}$	Sales productivity and plant equipment utilization.
Total assets turnover	$\frac{\text{Sales}}{\text{Total assets}}$	Whether a firm is generating a sufficient volume of business for the size of its assets investment.
Accounts receivable turnover	$\frac{\text{Annual credit sales}}{\text{Account receivable}}$	In percentage terms, the average length of time it takes a firm to collect on credit sales.
Average collection period	$\frac{\text{Account receivable}}{\text{Total sales}/365 \text{ days}}$	In days, the average length of time it takes a firm to collect on credit sales.
Profitability Ratios:		
Gross profit margin	$\frac{\text{Sales} - \text{Cost of goods sold}}{\text{Sales}}$	The total margin available to cover operating expenses and yield a profit.
Operating profit margin	$\frac{\text{Earning before interest and taxes (EBIT)}}{\text{Sales}}$	Profitability without concern for taxes and interest.
Net profit margin	$\frac{\text{Net income}}{\text{Sales}}$	After-tax profits per dollar of sales.
Return on total assets (ROA)	$\frac{\text{Net income}}{\text{Total assets}}$	After-tax profits per dollar of assets; this ratio is also called <i>return on investment</i> (ROI).

EXHIBIT 6.B6 (continued)

Ratio	Calculation	Meaning
Return on stockholders' equity (ROE)	$\frac{\text{Net income}}{\text{Total stockholders' equity}}$	After-tax profits per dollar of stockholders investment in the firm.
Earnings per share (EPS)	$\frac{\text{Net income}}{\text{Number of shares of common stock outstanding}}$	Earnings available to the owners of common stock.
Growth Ratios:		
Sales	Annual percentage growth in total sales	Firm's growth rate in sales.
Income	Annual percentage growth in profits	Firm's growth rate in profits.
Earnings per share	Annual percentage growth in EPS	Firm's growth rate in EPS.
Dividends per share	Annual percentage growth in dividends per share	Firm's growth rate in dividends per share.
Price-earnings ratio	$\frac{\text{Market price per share}}{\text{Earnings per share}}$	Faster-growing and less risky firms tend to have higher price-earnings ratios.