

Financial Tools

FINANCIAL STATEMENTS AND RATIO ANALYSIS

CASH FLOW AND FINANCIAL PLANNING

TIME VALUE OF MONEY

Learning Goals

- Review the contents of the stockholders' report and the procedures for consolidating international financial statements.
- Understand who uses financial ratios and how.
- Use ratios to analyze a firm's liquidity and activity.
- Discuss the relationship between debt and financial leverage and the ratios used to analyze a firm's debt.
- Use ratios to analyze a firm's profitability and its market value.
- Use a summary of financial ratios and the DuPont system of analysis to perform a complete ratio analysis.

The Stockholders' Report

generally accepted accounting principles (GAAP) The practice and procedure guidelines used to prepare and maintain financial records and reports; authorized by the Financial Accounting Standards Board (FASB).

Financial Accounting Standards Board (FASB) The accounting profession's rule-setting body, which authorizes generally accepted accounting principles (GAAP).

Public Company Accounting Oversight Board (PCAOB) A not-for-profit corporation established by the Sarbanes-Oxley Act of 2002 to protect the interests of investors and further the public interest in the preparation of informative, fair, and independent audit reports.

stockholders' report Annual report that publicly owned corporations must provide to stockholders; it summarizes and documents the firm's financial activities during the past year.

letter to stockholders Typically, the first element of the annual stockholders' report and the primary communication from management.

THE FOUR KEY FINANCIAL STATEMENTS

income statement Provides a financial summary of the firm's operating results during a specified period.

	For the years ended December 31	
	2012	2011
Sales revenue	\$3,074	\$2,567
Less: Cost of goods sold	<u>2,088</u>	<u>1,711</u>
Gross profits	<u>\$ 986</u>	<u>\$ 856</u>
Less: Operating expenses		
Selling expense	\$ 100	\$ 108
General and administrative expenses	194	187
Lease expense ^a	35	35
Depreciation expense	<u>239</u>	<u>223</u>
Total operating expense	<u>\$ 568</u>	<u>\$ 553</u>
Operating profits	\$ 418	\$ 303
Less: Interest expense	<u>93</u>	<u>91</u>
Net profits before taxes	\$ 325	\$ 212
Less: Taxes	<u>94</u>	<u>64</u>
Net profits after taxes	\$ 231	\$ 148
Less: Preferred stock dividends	<u>10</u>	<u>10</u>
Earnings available for common stockholders	<u>\$ 221</u>	<u>\$ 138</u>
Earnings per share (EPS) ^b	\$2.90	\$1.81
Dividend per share (DPS) ^c	\$1.29	\$0.75

dividend per share (DPS) The dollar amount of cash distributed during the period on behalf of each outstanding share of common stock.

balance sheet Summary statement of the firm's financial position at a given point in time.

current assets Short-term assets, expected to be converted into cash within 1 year or less.

current liabilities Short-term liabilities, expected to be paid within 1 year or less.

long-term debt Debt for which payment is not due in the current year.

paid-in capital in excess of par
The amount of proceeds in excess of the par value received from the original sale of common stock.

retained earnings The cumulative total of all earnings, net of dividends, that have been retained and reinvested in the firm since its inception.

statement of stockholders' equity
Shows all equity account transactions that occurred during a given year.

Assets	December 31	
	2012	2011
Cash	\$ 363	\$ 288
Marketable securities	68	51
Accounts receivable	503	365
Inventories	289	300
Total current assets	<u>\$1,223</u>	<u>\$1,004</u>
Land and buildings	\$2,072	\$1,903
Machinery and equipment	1,866	1,693
Furniture and fixtures	358	316
Vehicles	275	314
Other (includes financial leases)	98	96
Total gross fixed assets (at cost) ^a	<u>\$4,669</u>	<u>\$4,322</u>
Less: Accumulated depreciation	<u>2,295</u>	<u>2,056</u>
Net fixed assets	<u>\$2,374</u>	<u>\$2,266</u>
Total assets	<u>\$3,597</u>	<u>\$3,270</u>
Liabilities and Stockholders' Equity		
Accounts payable	\$ 382	\$ 270
Notes payable	79	99
Accruals	159	114
Total current liabilities	<u>\$ 620</u>	<u>\$ 483</u>
Long-term debt (includes financial leases) ^b	<u>1,023</u>	<u>967</u>
Total liabilities	<u>\$1,643</u>	<u>\$1,450</u>
Preferred stock—cumulative 5%, \$100 par, 2,000 shares authorized and issued ^c	\$ 200	\$ 200
Common stock—\$2.50 par, 100,000 shares authorized, shares issued and outstanding in 2012: 76,262; in 2011: 76,244	191	190
Paid-in capital in excess of par on common stock	428	418
Retained earnings	<u>1,135</u>	<u>1,012</u>
Total stockholders' equity	<u>\$1,954</u>	<u>\$1,820</u>
Total liabilities and stockholders' equity	<u>\$3,597</u>	<u>\$3,270</u>

statement of retained earnings Reconciles the net income earned during a given year, and any cash dividends paid, with the change in retained earnings between the start and the end of that year. An abbreviated form of the statement of stockholders' equity.

statement of cash flows

Provides a summary of the firm's operating, investment, and financing cash flows and reconciles them with changes in its cash and marketable securities during the period.

notes to the financial statements

Explanatory notes keyed to relevant accounts in the statements; they provide detailed information on the accounting policies, procedures, calculations, and transactions underlying entries in the financial statements.

Retained earnings balance (January 1, 2012)	\$1,012
Plus: Net profits after taxes (for 2012)	231
Less: Cash dividends (paid during 2012)	
Preferred stock	10
Common stock	<u>98</u>
Total dividends paid	<u>\$ 108</u>
Retained earnings balance (December 31, 2012)	<u><u>\$1,135</u></u>

Cash Flow from Operating Activities

Net profits after taxes	\$231
Depreciation	239
Increase in accounts receivable	(138) ^a
Decrease in inventories	11
Increase in accounts payable	112
Increase in accruals	<u>45</u>
Cash provided by operating activities	\$500

Cash Flow from Investment Activities

Increase in gross fixed assets	(347)
Change in equity investments in other firms	<u>0</u>
Cash provided by investment activities	(\$347)

Cash Flow from Financing Activities

Decrease in notes payable	(20)
Increase in long-term debts	56
Changes in stockholders' equity ^b	11
Dividends paid	(108)
Cash provided by financing activities	<u>(\$ 61)</u>
Net increase in cash and marketable securities	<u><u>\$ 92</u></u>

Financial Ratios

ratio analysis Involves methods of calculating and interpreting financial ratios to analyze and monitor the firm's performance.

cross-sectional analysis Comparison of different firms' financial ratios at the same point in time; involves comparing the firm's ratios to those of other firms in its industry or to industry averages.

benchmarking A type of cross-sectional analysis in which the firm's ratio values are compared to those of a key competitor or group of competitors that it wishes to emulate.

time-series analysis Evaluation of the firm's financial performance over time using financial ratio analysis.

	Current ratio	Quick ratio	Inventory turnover	Average collection period (days)	Total asset turnover	Debt ratio	Net profit margin (%)	Return on total assets (%)	Return on Common Equity (%)
Dell	1.3	1.2	40.5	58.9	1.6	0.8	2.7	4.3	25.4
Hewlett-Packard	1.2	1.1	13.8	80.6	1.0	0.6	6.7	6.7	18.9
Computers	2.5	2.1	5.8	61.3	0.9	0.4	-3.1	-2.2	-2.6
Home Depot	1.3	0.4	4.3	5.3	1.6	0.5	4.0	6.5	13.7
Lowe's	1.3	0.2	3.7	0.0	1.4	0.4	3.7	5.4	9.3
Building Materials	2.8	0.8	3.7	5.3	1.6	0.3	4.0	6.5	13.7
Kroger	1.0	0.3	12.0	4.3	3.3	0.8	0.1	0.3	1.4
Whole Foods Market	1.3	1.0	25.6	7.0	3.6	0.4	2.3	8.0	14.5
Grocery Stores	1.3	0.7	11.1	7.5	2.4	0.6	2.1	3.1	9.8
Sears	1.3	0.3	3.7	5.4	1.8	0.6	0.5	0.9	2.6
Wal-Mart	0.9	0.3	9.0	3.7	2.4	0.6	3.5	8.4	20.3
Merchandise Stores	1.7	0.6	4.1	3.7	2.3	0.5	1.5	4.9	10.8

*The data used to calculate these ratios are drawn from the Compustat North American database.

Liquidity Ratios

liquidity A firm's ability to satisfy its short-term obligations as they come due.

current ratio A measure of liquidity calculated by dividing the firm's current assets by its current liabilities.

quick (acid-test) ratio A measure of liquidity calculated by dividing the firm's current assets minus inventory by its current liabilities.

Activity Ratios

activity ratios Measure the speed with which various accounts are converted into sales or cash—inflows or outflows.

inventory turnover Measures the activity, or liquidity, of a firm's inventory.

average age of inventory Average number of days' sales in inventory.

average collection period The average amount of time needed to collect accounts receivable.

total asset turnover Indicates the efficiency with which the firm uses its assets to generate sales.

Debt Ratios

financial leverage The magnification of risk and return through the use of fixed cost financing, such as debt and preferred stock.

degree of indebtedness Measures the amount of debt relative to other significant balance sheet amounts.

ability to service debts The ability of a firm to make the payments required on a scheduled basis over the life of a debt.

coverage ratios Ratios that measure the firm's ability to pay certain fixed charges.

debt ratio Measures the proportion of total assets financed by the firm's creditors.

Debt ratio = Total liabilities , Total assets

times interest earned ratio Measures the firm's ability to make contractual interest payments; sometimes called the interest coverage ratio.

Times interest earned ratio = Earnings before interest and taxes / taxes

fixed-payment coverage ratio Measures the firm's ability to meet all fixed-payment obligations.

$$\text{Fixed-payment coverage ratio} = \frac{\text{Earnings before interest and taxes} + \text{Lease payments}}{\text{Interest} + \text{Lease payments} + \{(\text{Principal payments} + \text{Preferred stock dividends}) \times [1/(1 - T)]\}}$$

Profitability Ratios

common-size income statement An income statement in which each item is expressed as a percentage of sales.

gross profit margin Measures the percentage of each sales dollar remaining after the firm has paid for its goods.

$$\text{Gross profit margin} = \frac{\text{Sales} - \text{Cost of goods sold}}{\text{Sales}} = \frac{\text{Gross profits}}{\text{Sales}}$$

operating profit margin Measures the percentage of each sales dollar remaining after all costs and expenses other than interest, taxes, and preferred stock dividends are deducted; the "pure profits" earned on each sales dollar.

Operating profit margin = Operating profits / Sales

net profit margin Measures the percentage of each sales dollar remaining after all costs and expenses, including interest, taxes, and preferred stock dividends, have been deducted.

Net profit margin = Earnings available for common stockholders / Sales

$$\text{Earnings per share} = \frac{\text{Earnings available for common stockholders}}{\text{Number of shares of common stock outstanding}}$$

return on total assets (ROA) Measures the overall effectiveness of management in generating profits with its available assets; also called the return on investment (ROI).

ROA = Earnings available for common stockholders / Total assets

return on common equity (ROE) Measures the return earned on the common stockholders' investment in the firm.

Market Ratios

market ratios Relate a firm's market value, as measured by its current share price, to certain accounting values.

price/earnings (P/E) ratio Measures the amount that investors are willing to pay for each dollar of a firm's earnings; the higher the P/E ratio, the greater the investor confidence.

market/book (M/B) ratio Provides an assessment of how investors view the firm's performance. Firms expected to earn high returns relative to their risk typically sell at higher M/B multiples.

$$\text{Book value per share of common stock} = \frac{\text{Common stock equity}}{\text{Number of shares of common stock outstanding}}$$

$$\text{Market/book (M/B) ratio} = \frac{\text{Market price per share of common stock}}{\text{Book value per share of common stock}}$$

DuPont system of analysis System used to dissect the firm's financial statements and to assess its financial condition.

DuPont formula Multiplies the firm's net profit margin by its total asset turnover to calculate the firm's return on total assets (ROA).

modified DuPont formula Relates the firm's return on total assets (ROA) to its return on common equity (ROE) using the financial leverage multiplier (FLM).

financial leverage multiplier (FLM) The ratio of the firm's total assets to its common stock equity.

$$\text{ROA} = \text{Net profit margin} \times \text{Total asset turnover}$$

$$\text{ROA} = \frac{\text{Earnings available for common stockholders}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Total assets}} = \frac{\text{Earnings available for common stockholders}}{\text{Total assets}}$$

$$\text{ROE} = \text{ROA} \times \text{FLM}$$

$$\text{ROE} = \frac{\text{Earnings available for common stockholders}}{\text{Total assets}} \times \frac{\text{Total assets}}{\text{Common stock equity}} = \frac{\text{Earnings available for common stockholders}}{\text{Common stock equity}}$$