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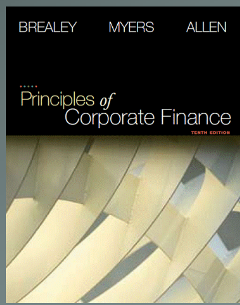
Principles of
Corporate Finance
Tenth Edition



Financial Analysis

BMA (Chapter 28)

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Topics Covered

- Financial Statements
- Lowe’s Financial Statements
- Measuring Lowe’s Performance
- Measuring Efficiency
- Analyzing the ROA: The DuPont System
- Measuring Leverage
- Measuring Liquidity
- Interpreting Financial Ratios

Lowe’s Companies

Balance sheet ($mil)		
	2008	**2007**
Assets		
Current assets		
Cash and marketable securities	661	530
Accounts receivable	166	247
Inventories	8,209	7,611
Other current assets	215	298
Total current assets	9,251	8,686
Fixed assets		
Tangible fixed assets		
property plant and equipment	31,477	28,836
Less accumulated depreciation	8,755	7,475
Net tangible fixed assets	22,722	21,361
Long -term investments	253	509
Other long-term assets	460	313
Total assets	32,686	30,869

Lowe’s Companies

Balance sheet ($ mil)		
	2008	**2007**
Liabilities and Shareholders’ Equity		
Current liabilities		
Debt due for repayment	1,021	1,104
Accounts payable	4,543	4,137
Other current liabilities	2,458	2,510
Total current liabilities	8,022	7,751
Long-term debt	5,039	5,576
Deferred income taxes	660	670
Other long-term liabilities	910	774
Total liabilities	14,631	14,771
Common stock and other paid-in capital	735	729
Retained earnings and capital surplus	17,320	15,369
Total shareholders' equity	18,055	16,098
Total liabilities and shareholders’ equity	32,686	30,869

Lowe’s Companies

Other Data (end of 2008)

Net working capital = current assets - current liabilities
= 9,251 – 8,022 = $1,229 million

Total revenues - costs - depreciation = EBIT
48,230 – 42,887 – 1,539 = $3,804 million

1,470 million shares outstanding

Stock price =$18.19 per share

Lowe's Companies

Income ($ mil)	**2008**
Net sales	48,230
Cost of goods sold	31,729
Selling, general, and administrative expenses	11,158
Depreciation	1,539
Earnings before interest and taxes (EBIT)	3,804
Interest expense	298
Taxable income	3,506
Tax	1,311
Net income	2,195
Dividends	491
Addition to retained earnings	1,704

Lowe's Companies

<u>Measuring Performance:</u> **Market-to-Book Ratio**

Ratio of market value of equity to book value of equity.

$$\text{Market-to-book ratio} = \frac{\text{market value of equity}}{\text{book value of equity}}$$

$$= \frac{\$26{,}739}{\$18{,}055}$$

$$= 1.5$$

Lowe's Companies

➢ Market Capitalization

– Total market value of equity, equal to share price times number of shares outstanding.

$$\boxed{\text{Market Capitalization} = (\#\text{ shares}) \times (\text{price per share})}$$

Market Capitalization = $18.19 × 1,470 = $26,739 mil

➢ Market Value Added

– Market capitalization minus book value of equity.

$$\boxed{\text{MVA} = \text{Market Capitalization} - \text{Equity}_{\text{Book Value}}}$$

$$\text{MVA} = \$26{,}739 - \$18{,}055 = \$8{,}684 \text{ million}$$

Market Values

Stock market measures of company performance, 2008 (dollar values in millions). Companies are ranked by market value added.

	Market Value Added	Market-to-Book-Ratio		Market Value Added	Market-to-Book-Ratio
Exxon Mobil	$154,397	1.69	Fedex	($1,538)	0.96
Wal-Mart	128,159	2.02	J.C. Penney	-3,777	0.69
Coca Cola	106,957	3.46	Xerox	-9,981	0.37
Google	96,880	6.82	Dow Chemical	-17,823	0.55
Johnson & Johnson	67,645	1.8	AT&T	-49,052	0.85

Source: We are grateful to EVA Dimensions for providing these statistics.

Measuring Performance

- Economic Value Added (EVA)
  - Net income minus a charge for the cost of capital employed. Also called *residual income.*
- Residual Income
  - Net Dollar return after deducting the cost of capital

$$EVA = \text{Residual Income}$$
$$= [\text{After Tax interest} + \text{Net Income}] - [\text{Cost of Capital} \times \text{Capital}]$$

or

$$EVA = \left(\frac{\text{After Tax interest} + \text{Net Income}}{\text{Total Capital}} - \text{Cost of Capital} \right) \text{ x Total Capital}$$

Measuring Performance

- Economic Value Added (EVA) of Lowe's

$$EVA = \left(\frac{\text{After Tax interest} + \text{Net Income}}{\text{Total Capital}} - \text{Cost of Capital} \right) \text{ x Total Capital}$$

$$EVA = \left(\frac{(1-.35) \times 298 + 2{,}195}{21{,}674} - .074 \right) \text{ x } 21{,}674$$
$$= \$785\text{mil}$$

Measuring Performance

	1. After-tax interest + net income	2. Cost of Capital (WACC), %	3. Total Long-term Capital	4. EVA = 1 – (2 × 3)	5. Return on Capital (ROC), % (1 ÷ 3)
Exxon Mobil	46,378	6	$224,051	$33,006	20.7
Wal-Mart	14,169	5.7	125,059	7,286	11.3
Johnson & Johnson	11,964	7.5	84,848	5,529	14.1
Google	5,128	12.3	16,644	3,143	30.8
Coca Cola	4,900	5.8	33,246	3,031	14.7
J.C. Penney	553	7	12,191	-302	4.5
Fedex	1,898	6.7	37,067	-583	5.1
Dow Chemical	1,420	6.1	39,458	-1,004	3.6
Xerox	583	9.9	15,876	-1,047	3.7
AT&T	15,745	8.6	321,320	-11,779	4.9

Source: We are grateful to EVA Dimensions for providing these statistics.

Measuring Profitability

Lowe's Profitability Measurements

$$\text{Return on capital} = \frac{\text{after tax interest} + \text{net income}}{\text{average total capital}} = \frac{(1-.35)\times 298 + 2{,}195}{(21{,}674 + 23{,}094)/2} = .107$$

$$\text{Return on equity} = \frac{\text{net income}}{\text{equity}} = \frac{2{,}195}{16{,}098} = .136$$

$$\text{Return on assets} = \frac{\text{after tax interest} + \text{net income}}{\text{total assets}} = \frac{(1-.35)\times 298 + 2{,}195}{30{,}869} = .077$$

Measuring Efficiency

$$\text{Asset turnover ratio} = \frac{\text{Sales}}{\text{total assets at start of year}}$$

OR

$$\text{Asset turnover ratio} = \frac{\text{Sales}}{\text{Average total assets}}$$

For Lowe's

$$\text{Asset turnover ratio} = \frac{\text{Sales}}{\text{total assets at start of year}} = \frac{48{,}230}{30{,}869} = 1.56$$

OR

$$\text{Asset turnover ratio} = \frac{\text{Sales}}{\text{Average total assets}} = \frac{48{,}230}{(30{,}869 + 32{,}686)/2} = 1.52$$

Measuring Efficiency

$$\text{Inventory turnover ratio} = \frac{\text{cost of goods sold}}{\text{inventory at start of year}}$$

OR

$$\text{Average Days in Inventory} = \frac{\text{inventory at start of year}}{\text{cost of goods sold/365}}$$

$$\text{Receivables Turnover} = \frac{\text{sales}}{\text{receivables at start of year}}$$

OR

$$\text{Average collection period} = \frac{\text{receivables at start of year}}{\text{average daily sales}}$$

The DuPont System

- A breakdown of ROE and ROA into component ratios

$$\text{Profit Margin} = \frac{\text{Net Income}}{\text{sales}}$$

$$\text{Operating Profit Margin} = \frac{\text{After tax interest} + \text{Net Income}}{\text{sales}}$$

The DuPont System

$$\text{ROA} = \frac{\text{Net Income} + \text{interest}}{\text{assets}}$$

$$\text{ROA} = \frac{\text{sales}}{\text{assets}} \text{ x } \frac{\text{Net Income} + \text{interest}}{\text{sales}}$$

asset turnover

Operating profit margin

The DuPont System

Merging with suppliers or customers generally increases the profit margin, but this increase is offset by a reduction in asset turnover.

	Sales	Profits	Assets	Asset Turnover	Profit Margin	ROA
Admiral Motors	$20	$4	$40	0.5	20%	10%
Diana Corporation	8	2	20	0.4	25	10
Diana Motors (the merged firm)	20	6	60	0.33	30	10

Measuring Leverage

$$\text{Long term debt ratio} = \frac{\text{long term debt}}{\text{long term debt} + \text{equity}}$$

$$\text{Debt equity ratio} = \frac{\text{long term debt}}{\text{equity}}$$

Measuring Leverage

$$\text{Total debt ratio} = \frac{\text{total liabilities}}{\text{total assets}}$$

$$\text{Times interest earned} = \frac{\text{EBIT}}{\text{interest payments}}$$

$$\text{Cash coverage ratio} = \frac{\text{EBIT} + \text{depreciation}}{\text{interest payments}}$$

Measuring Leverage

$$\text{ROE} = \underbrace{\frac{\text{assets}}{\text{equity}}}_{\text{leverage ratio}} \text{ x } \underbrace{\frac{\text{sales}}{\text{assets}}}_{\text{asset turnover}} \text{ x } \underbrace{\frac{\text{Net Income} + \text{interest}}{\text{sales}}}_{\text{Operating profit margin}} \text{ x } \underbrace{\frac{\text{Net Income}}{\text{Net Income} + \text{interest}}}_{\text{debt burden}}$$

Liquidity Ratios

$$\text{Net working capital to total assets ratio} = \frac{\text{Net working capital}}{\text{Total assets}}$$

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

Liquidity Ratios

$$\text{Quick ratio} = \frac{\text{cash} + \text{marketable securities} + \text{receivables}}{\text{current liabilities}}$$

$$\text{Cash ratio} = \frac{\text{cash} + \text{marketable securities}}{\text{current liabilities}}$$

$$\text{Interval measure} = \frac{\text{cash} + \text{marketable securities} + \text{receivables}}{\text{average daily expenditures from operations}}$$

Common Size Balance Sheet

For S&P Composite Index Firms during 2008

	Industrials	Paper	Oil	Chemicals	Metals	Machinery	Pharmaceuticals	Computers	Software	Semiconductors	Telecoms	Utilities	Food	Retail
Assets:														
Cash & securities	11	4	6	5	7	13	19	35	21	31	31	2	3	6
Receivables	12	13	11	13	12	16	10	13	12	7	14	6	11	4
Inventories	9	11	5	11	15	15	9	4	1	6	7	3	12	26
Other current assets	4	3	2	2	3	5	5	7	12	5	3	4	4	3
Total current assets	36	30	24	31	37	49	44	58	46	49	55	15	30	38
Fixed assets	57	77	104	111	61	38	35	18	20	60	21	94	51	81
Depreciation	26	42	42	69	31	21	16	10	12	31	13	32	33	30
Net fixed assets	31	35	62	42	30	17	19	8	8	29	8	62	28	51
Other long-term assets	33	35	14	26	33	34	37	34	46	22	37	23	43	11
Total assets	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Liabilities:														
Short-term debt	4	4	1	5	3	5	5	0	1	2	2	5	8	3
Payables	8	7	13	7	7	6	4	10	3	4	5	4	9	14
Other current liabilities	12	10	8	10	10	13	12	20	29	10	12	7	11	12
Total current liabilities	24	21	22	22	20	23	21	30	32	16	18	16	28	28
Long-term debt	23	31	12	25	22	15	18	9	20	27	19	33	34	22
Other long-term liabilities	15	16	20	23	18	10	10	10	12	8	8	27	15	9
Total liabilities	62	69	54	71	61	48	49	49	65	51	46	75	77	60
Stockholders' equity	37	30	45	28	38	52	51	51	34	49	54	24	23	40
Total liabilities and equity	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Common Size Income Statement

For S&P Composite Index Firms during 2008

	Industrials	Paper	Oil	Chemicals	Metals	Machinery	Pharmaceuticals	Computers	Software	Semiconductors	Telecoms	Utilities	Food	Retail
Sales	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Costs	80.8	86.4	85.8	84.7	84.6	80.9	69.2	87.2	74.9	75.0	87.5	72.7	86.7	93.1
Depreciation	5.5	4.6	3.4	5.0	3.1	4.2	6.3	4.0	5.7	11.9	4.9	9.2	2.7	2.6
EBIT	13.6	9.1	10.8	10.3	12.3	14.9	24.5	8.8	19.4	13.1	7.6	18.1	10.6	4.3
Interest	1.8	2.2	0.4	1.7	1.3	1.2	1.6	0.3	1.9	1.8	1.0	7.1	2.1	0.8
Other items	0.0	0.6	1.7	0.8	0.2	0.5	2.4	1.8	1.0	0.4	0.5	2.1	0.3	0.0
Pretax income	11.8	6.2	8.6	7.8	10.8	13.2	20.6	6.7	16.5	11.0	6.1	8.9	8.2	3.5
Tax	7.0	1.7	5.3	1.8	3.2	3.9	5.7	3.9	4.7	2.2	2.0	3.7	2.2	1.1
Net income	4.8	4.5	3.4	6.0	7.6	9.4	14.9	2.7	11.8	8.8	4.0	5.2	6.1	2.3

Financial Ratios

2008 Ratios for S&P 500 firms

	Industrials	Paper	Oil	Chemicals	Metals	Machinery	Pharmaceuticals	Computers	Software	Semiconductors	Telecoms	Utilities	Food	Retail
Return on equity, %*	12.8	15.2	7.4	21.6	20.5	17.9	29.2	5.4	34.4	18.9	7.4	21.3	26.9	5.8
Return on assets, %*	5.9	5.9	7.9	7.4	10.1	8.6	10.1	2.7	9.7	7.3	3.3	4.1	10.5	6.4
Sales-to-assets ratio*	.98	.98	2.19	1.04	1.19	0.85	0.63	0.92	0.75	0.74	.71	.42	1.4	2.22
Operating profit margin %	6.0	6.0	3.6	7.1	8.5	10.1	15.9	2.9	13.1	9.9	4.7	9.8	7.4	2.9
Sales to net working capital*	8.0	11.2	137.7	11.6	7.2	3.2	2.7	3.3	5.4	2.3	1.9	**	104.4	23.3
Receivables turnover*	8.5	7.7	20.3	8.1	10.0	5.1	6.2	7.1	6.4	10.5	5.2	7.4	12.9	63.2
Inventory turnover*	6.4	66.6	15.1	6.6	5.1	3.8	3.2	15.4	64.0	6.4	8.3	20.8	5.6	2.7
Long-term debt ratio	37.9	51.1	21.0	47.6	37.6	22.10	25.8	14.8	37.2	36.9	26.1	57.0	60.4	35.2
Current ratio	1.5	1.4	1.1	1.4	1.8	2.1	2.1	1.9	1.4	3.0	3.0	0.9	1.0	1.3
Cash ratio	1.0	0.8	0.7	0.8	0.9	1.3	1.4	1.6	10	2.3	2.5	0.5	0.5	0.3
Quick ratio	.5	.6	.5	.6	.6	.7	.5	.4	.4	.4	.8	.4	.4	.1

Comparing Performance

	Lowe's	Home Depot
Performance Measures		
Market value added ($ millions)	8,684	17,856
Market to book ratio	1.5	2
EVA ($ millions)	785	1,882
Return on capital (ROC)	11	9.3
Return on equity (ROE)	13.6	13.1
Return on assets (ROA)	7.7	6.1

Comparing Performance

	Lowe's	Home Depot
Efficiency Measures		
Asset turnover	1.56	1.61
Inventory turnover	4.17	4.03
Days in inventory	87.6	90.5
Receivables turnover *	195.3	56.5
Average collection period (days) *	1.9	6.5
Profit margin	4.6	3.2
Operating profit margin	5.2	4.1

Comparing Performance

	Lowe's	Home Depot
Leverage Measures		
Long-term ratio	0.28	0.35
Total debt ratio	0.45	0.57
Times interest earned	12.8	6.8
Cash coverage ratio	17.9	9.6
Liquidity Measures		
Net working capital to total assets	0.038	0.054
Current ratio	1.15	1.2
Quick ratio	0.103	0.134
Cash ratio	0.082	0.047

* Both companies sell most of their receivables to a third party

Web Resources

Click to access web sites
Internet connection required

www.jaxworks.com

www.prars.com

www.census.gov/csd/qfr