

CHAPTER 4: UNDERSTANDING FINANCIAL STATEMENTS

4-1

Solving $(15,000,000 * 50\% - 1,500,000 - 1,000,000 - I) * (1 - 35\%) / 1,300,000 = 2.0$
then the interest expense = $I = \$1,000,000$

4-2

a: Percentage Based-Income Statements

<u>Items</u>	<u>Company</u>	<u>Industry</u>
Revenues	100%	100%
Costs of goods sold	40%	50%
Depreciation	20%	15%
Other operating expenses	8%	15%
Operating Income	32%	20%
Interest expenses	12%	10%
Income Before Taxes	20%	10%
Taxes	7%	3%
Net Income	13%	7%

b: The company has a more efficient cost structure (cost of goods sold and operating expenses) and higher margins.

4-3

c. and (b):

	1992	1993	% Change
Revenues	\$ 10,000.00	\$ 10,100.00	1.00%
- Labor	\$ 4,000.00	\$ 2,500.00	-37.50%
- Material	\$ 2,000.00	\$ 2,010.00	0.50%
- Deprec'n	\$ 1,000.00	\$ 1,300.00	30.00%
- Op. Exp.	\$ 500.00	\$ 450.00	-10.00%
EBIT	\$ 2,500.00	\$ 3,840.00	53.60%
- Int. Exp.	\$ 500.00	\$ 520.00	4.00%
Taxable Inc.	\$ 2,000.00	\$ 3,320.00	66.00%

- Tax	\$ 700.00	\$ 1,261.60	80.23%
Net Income	\$ 1,300.00	\$ 2,058.40	58.34%
# Shares	1500	1500	0.00%
EPS	\$ 0.87	\$ 1.37	58.34%

(c): the high growth rate of EPS can be attributed to growth in operating income, which, in turn, can be attributed to a large drop in the cost of labor.

4-4

Long-term debt = $(15 - 5 - 7) = \$3$ millions

4-5

Total assets = total liabilities + equity = $20 + 10 + 20 = 50$

Inventory = $50 - (25 + 10 + 5) = \$10$ million

4-6

retained income in 1995 = net income - dividends = $1,500,000 - 1.00 * 500,000 = 1,000,000$

the total equity in 1995 = total equity in 1994 + retained earnings in 1995
 $= 10,000,000 + 1,000,000 = 11,000,000$

the percentage increase in equity from 1994 to 1995 = $1,000,000 / 10,000,000 = 10\%$

4-7

change in cash from 1994 to 1995 = change in total assets - change in non-cash assets
 $= 10 - (-2 + 3 + 0.5 + 2) = 6.5$

cash in 1995 = cash in 1994 + change in cash from 1994 = $10 + 6.5 = \$16.5$ millions

4-8

cash from operations = net earnings + depreciation = $30 + 2 = \$32$ millions

increase in non-cash assets = $10 + 20 + 15 = \$45$ millions

the need for financing = $45 - 32 = \$13$ millions

4-9

\$40 millions would be available for paying dividends.

net accumulations of cash over these five years = $5 * (40 - 10) = \$150$ millions.

4-10

total assets = debt + equity = $100 + 42.5 = 142.5$

interest expense = coupon rate * debt = $10\% * 100 = 10$

then from the equation:

return on assets = $(\text{net income} + \text{interest expenses}(1 - \text{tax rate})) / \text{total assets}$

we can solve for tax rate:

tax rate = $1 - (\text{return on assets} * \text{total assets} - \text{net income}) / \text{interest expenses}$
 $= 1 - (20\% * 142.5 - 25) / 10 = 65\%$

4-11

net income = total assets * Du Pont ROI = 100 * 25% = \$25 millions
total revenues = net income / net profit margin = 25 / 10% = \$250 millions

4-12

increase in the operating profits = operating leverage * increase in sales = 4.0 * 3.5% = 14%

operating profits in 1995 = \$20.5 millions * (1 + 14%) = \$23.37 millions

4-13

Solving the equation for D/E:

$20\% = 10\% + D/E (10\% - 7\% (1-40\%))$

then $D/E = (20\% - 10\%) / (10\% - 7\%(1-40\%)) = 1.724$

4-14

Let CA = Current Assets and CL = Current Liabilities

Current Ratio = CA / CL = 1.5 then CA = 1.5*CL (1)

CA - Cash and marketable securities = 2.5 then

Cash and marketable securities = CA - 2.5

Quick Ratio = Cash and marketable securities / CL = 1.0 then

$(CA - 2.5) / CL = 1.0$ then CA = CL + 2.5 (2)

Solving (1) and (2), we get CA = \$7.5 millions and CL = \$5 millions

4-15

Total assets turnover = total sales / total assets = 0.7272

then total sales = 0.7272 * total assets = 0.7272 * 2200 = 1,600

Accounts Receivable Turnover = Total sales / A/R = 4.0

then A/R = Total Sales / 4.0 = 1600 / 4.0 = 400

Quick Ratio = (Cash & marketable securities + A/R) / Current Liabilities = 0.6

then Current Liabilities = (Cash & marketable securities + A/R) / 0.6

$= (200 + 400) / 0.6 = 1,000$

Current Assets / Current Liabilities = 1.2

then Current Assets = 1.2 * Current Liabilities = 1.2 * 1,000 = 1,200

Inventory = Current Assets - Cash & marketable securities - A/R

$= 1,200 - 200 - 400 = 600$

Fixes Assets = Total assets - current assets = 2,200 - 1,200 = 1,000

Current liabilities + long-term debt + equity = total assets

then $1,000 + \text{long-term debt} + \text{equity} = 2,200$ (1)

(Current liabilities + long-term debt) / equity = debt-equity ratio

then $(1,000 + \text{long-term debt}) / \text{equity} = 2.143$ (2)

Solving (1) and (2) we get

Long-term debt = 500 and equity = 700

4-16

Required Financing Period = Days Receivable Outstanding + Days Inventory Held
– Days A/P Outstanding

then Days A/P Outstanding = Days Receivable Outstanding + Days Inventory Held
– Required Financing Period
= 35 + 25 – 40 = 20 days

4-17

Since $5 = (20 + \text{Fixed charges}) / \text{Fixed charges}$

then Fixed charges = \$5 millions

4-18

$(420,000 + \text{Long-term debt}) / (420,000 + \text{Long-term debt} + \text{equity}) = 0.4$

and Long-term debt / equity = .5

Solving both equations, we get

Long-term debt = 1,260,000 and Equity = 2,520,000

4-19

Total sales = A/R Turnover * Average A/R = 5.6 * 25 = \$140 millions

Cost of goods sold = total sales * 50% = \$70 millions

Inventory Turnover = Cost of goods sold / Average Inventory = 70/50 = 1.4

4-20

Interest Charges = EBIT / Interest coverage ratio = 400,000 / 10 = 40,000

Total debt = Interest Charges / Average interest rate = 40,000 / 8% = 500,000