

Chapter 13 Understanding Financial Statements

13.1) (2) Income statement; (1) balance sheet; (3) cash flow statement; (4) operating activities; (5) investing activities, and (6) financing activities; (7) capital account (paid-in capital)

13.2) (7), (8), (1), (11), (3), (9)

13.3) (a)

- Current assets = $\$150,000 + \$200,000 + \$150,000 + \$50,000 + \$30,000 = \$580,000$
- Current liabilities = $\$50,000 + \$100,000 + \$80,000 = \$230,000$
- Working capital = $\$580,000 - \$230,000 = \$350,000$
- Shareholder's equity = $\$100,000 + \$150,000 + \$150,000 + \$70,000 = \$470,000$

(b) $\text{EPS} = \$500,000 / 10,000 = \50 per share

(c) Par value = \$15; capital surplus = $\$150,000 / 10,000 = \15 ;
Market price = $\$15 + \$15 = \$30$ per share

13.4) (a) Working capital = Current assets – Current liabilities; Working capital requirements = Changes in current assets – Changes in current liabilities; WC req. = $(+\$100,000 - \$20,000) - (+\$30,000 - \$40,000) = \$90,000$, indicating that additional financing is needed to fund the increase in current assets.

(b) Taxable income = $\$1,500,000 - \$650,000 - \$150,000 - \$20,000 = \$680,000$

(c) Net income = $\$680,000 - \$272,000 = \$408,000$

(d) Net cash flow:

- Operating activities = net income + depreciation – WC = $\$408,000 + \$200,000 - \$90,000 = \$518,000$
- Investing activities = equipment purchase = $(\$400,000)$
- Financing activities = borrowed fund = $\$200,000$
- Net cash flow = $\$518,000 - \$400,000 + \$200,000 = \$318,000$

13.5) (b)

13.6) (b)

13.7) (d)

13.8) (b)

$$\text{ROE} = \text{Profit margin} \times \text{Asset turnover} \times \text{Financial leverage}$$

- (a) 0.1668
- (b) 0.1900
- (c) 0.1447
- (d) 0.1152

13.9)

Income Statement:

A	B	C	D	E	F
\$900,000	\$585,000	\$315,000	\$270,000	\$108,000	\$162,000

Balance Sheet:

①	①	②	③	④	⑤
\$160,000	\$120,000	\$320,000	\$600,000	\$900,000	\$1,500,000

⑥	⑦	⑧	⑨	⑩
\$450,000	\$700,000	\$100,000	\$700,000	\$800,000

- From Current ratio
 Total current assets = $2.4 \times \$250,000 = \$600,000$ ----- ③
 Plant and equipment, net = $\$1,500,000 - \$600,000 = \$900,000$ ----- ④
- From Quick ratio
 Inventory = $\$600,000 - (1.12 \times \$250,000) = \$320,000$ ----- ②
- From Inventory Turnover
 Net Revenue = $((\$320,000 + \$280,000)/2) \times 6.0 = \$1,800,000$
 Cost of goods sold = $\$1,800,000 - \$900,000 = \$900,000$ ----- A
- From DSO
 Accounts receivable = $24.3333 \times (\$1,800,000 \div 365) = \$120,000$ ----- ①
 Cash = $③ - (② + ①) = \$160,000$ ----- ⑥
- From interest expense of income statement

$$\begin{aligned}\text{Bond} &= \$450,000 \text{ ----- } \textcircled{6} \\ 250,000 + \textcircled{6} &= \$700,000 \text{ ----- } \textcircled{7}\end{aligned}$$

- From Debt to Equity ratio

$$\text{Total Equity } \textcircled{10} = \$700,000 \div 0.875 = \$800,000 \text{ ----- } \textcircled{10}$$

$$\text{Total assets or Total liabilities and equity} = \textcircled{7} + \textcircled{10} = \$1,500,000 \text{ ----- } \textcircled{5}$$

- From Return on total assets

$$\text{Net income F} = 14\% \times (\$1,350,000) - (\$45,000)(0.6) = \$162,000$$

- From F, $D = F \div 0.6 = \$270,000$,
 $E = D \times (0.4) = \$108,000$
 $C = D + 45,000 = \$315,000$
 $B = \$900,000 - C = \$585,000$

- From EPS

$$\text{Stock Outstanding} = F \div 4.05 = 40,000 \text{ shares}$$

$$\text{Common stock} = \$2.50 \times 40,000 = \$100,000 \text{ ----- } \textcircled{8}$$

$$\text{Retained Earnings} = \textcircled{10} - \textcircled{8} = \$700,000 \text{ ----- } \textcircled{9}$$

13.10)

Given Olson's EPS = \$8 per share; Cash dividend = \$4 per share; Book value per share = \$80; Changes in the retained earnings = \$24 million; Total debt = \$240 million; Find debt ratio = total debt/total assets

- $\text{EPS} = \frac{\text{Net Income}}{X} = \8

Where X = the number of outstanding shares

- $\text{Book value} = \frac{\text{Total shareholders' equity}}{X} = \80

- Retained earnings = Net income – Cash dividend; Net income = 8X from EPS relationship and the total cash dividend = 4X, so we rewrite $8X - 4X = \$24 \text{ million}$, or $X = 6 \text{ million shares}$

- From the book value per share, we know that total shareholders' equity = 80X, or \$480 million; Total assets = Total liabilities + Total shareholders' equity = \$240 million + \$480 million = \$720 million

- Debt ratio = \$240 million/\$720 million = 0.33

13.11)

$$(a) \text{ Debt ratio} = \frac{\text{Total debt}}{\text{Total assets}} = \frac{\$2,047,599}{\$1,658,528} = 123.46\%$$

$$(b) \text{ Times-interest-earned ratio} = \frac{\text{EBIT}}{\text{Interest expense}} = \frac{-\$1,038,770}{\$64,032} = -1,622.27\%$$

$$(c) \text{ Current ratio} = \frac{\text{Current assets}}{\text{Current liabilities}} = \frac{\$617,266}{\$875,065} = 70.54\%$$

$$(d) \text{ Quick ratio} = \frac{\text{Current assets} - \text{Inventory}}{\text{Current liabilities}} = \frac{\$617,266 - \$34,502}{\$875,065} = 66.60\%$$

$$(e) \text{ Inventory turnover} = \frac{\text{Net sales}}{\text{avg. Inventory}} = \frac{\$637,235}{(\$34,502 + \$14,256)/2} = 26.14 \text{ times}$$

$$(f) \text{ DSO} = \frac{\text{A/R}}{\text{avg. sales/day}} = \frac{\$71,014}{\$637,235/365} = 40.68 \text{ days}$$

$$(g) \text{ Total assets turnover ratio} = \frac{\text{Net sales}}{\text{Total assets}} = \frac{\$637,235}{\$1,658,528} = 0.3842 \text{ times}$$

$$(h) \text{ Profit margin on sales} = \frac{\text{Net Income}}{\text{Net sales}} = \frac{-\$1,104,867}{\$637,235} = -173.38 \%$$

$$(i) \text{ Return on total assets} = \frac{\text{Net Income} + \text{Interest expense}(1 - \text{tax rate})}{\text{avg. total assets}} = \frac{-\$1,104,867 + \$64,032(0.6)}{(\$1,658,528 + 2,085,362)/2} = -56.97\%$$

with an assumption of 40% tax rate.

$$(j) \text{ Return on common equity} = \frac{\text{Net Income}}{\text{avg. shareholder's equity}} = \frac{-\$1,104,867}{(-\$389,701 + \$324,968)/2} = 34.47\%$$

$$(k) \text{ Price-earning ratio} = \frac{\text{Price per share}}{\text{Earnings per share}} = \frac{\$2.83}{-\$0.7877} = -3.59$$

$$\text{Earnings per share} = \frac{\text{Net income}}{\text{Avg. number of shares outstanding}} = \frac{-\$1,104,867}{1,402,619} = -\$0.7877$$

$$(l) \text{ Book value per share} = \frac{\text{total stockholders' equity} - \text{preferred stock}}{\text{Shares outstanding}} = \frac{-\$389,071}{1,402,619} = 0.277$$

13.12)

$$(a) \text{ Debt ratio} = \frac{\text{Total debt}}{\text{Total assets}} = \frac{\$1,118,455}{\$1,408,785} = 79.39\%$$

$$(b) \text{ Times-interest-earned ratio} = \frac{\text{EBIT}}{\text{Interest expense}} = \frac{\$290,235}{\$30,658} = 946.69\%$$

$$(c) \text{ Current ratio} = \frac{\text{Current assets}}{\text{Current liabilities}} = \frac{\$515,173}{\$286,394} = 179.88\%$$

$$(d) \text{ Quick ratio} = \frac{\text{Current assets} - \text{Inventory}}{\text{Current liabilities}} = \frac{\$515,173 - \$311,464}{\$286,394} = 71.13\%$$

$$(e) \text{ Inventory turnover} = \frac{\text{Net revenue}}{\text{avg. Inventory}} = \frac{\$3,198,084}{(\$311,464 + \$79,181)/2} = 16.37 \text{ times}$$

$$(f) \text{ DSO} = \frac{\text{A/R}}{\text{avg. sales/day}} = \frac{\$126,634}{\$3,198,084/365} = 14.45 \text{ days}$$

$$(g) \text{ Total assets turnover ratio} = \frac{\text{Net revenue}}{\text{Total assets}} = \frac{\$3,198,084}{\$1,408,785} = 2.27 \text{ times}$$

$$(h) \text{ Profit margin on sales} = \frac{\text{Net Income}}{\text{Net sale}} = \frac{\$157,368}{\$3,198,084} = 4.92\%$$

$$(i) \text{ Return on total assets} = \frac{\text{Net Income} + \text{Interest expense}(1 - \text{tax rate})}{\text{avg. total assets}} = \frac{\$157,368 + \$30,658(0.6)}{(\$1,408,785 + \$758,780)/2} = 15.94\%$$

We assume a tax rate of 40%.

$$(j) \text{ Return on common equity} = \frac{\text{Net Income}}{\text{avg. share holder's equity}} = \frac{\$157,368}{(\$290,330 + \$279,493)/2} = 55.23\%$$

$$(k) \text{ Price-earning ratio} = \frac{\text{Price per share}}{\text{Earnings per share}} = \frac{\$65}{\$3.37} = 19.30$$

$$\begin{aligned} \text{Earnings per share} &= \frac{\$157,368}{46,738} \\ &= \$3.37 \end{aligned}$$

$$(l) \text{ Book value per share} = \frac{\text{Total stockholders' equity} - \text{Preferred stock}}{\text{Shares outstanding}} = \frac{\$290,330}{46,738} = 6.21$$

13.13) Not provided

13.14) Not provided.