FINM2063 Introduction to Finance

Chapter 5 Exercises

Solutions

1. Income statement:

Corporation X:

Income Statement for the Year Ended XX/XX/XX

Sales $1,000,000

Cost of goods sold 600,000

Other expenses 100,000

Earnings before interest and taxes 300,000

Interest expense 80,000

Earnings before taxes 220,000

Taxes 100,000

Net earnings $120,000

Number of shares outstanding 100,000

Earnings per share $1.20

Balance Sheet:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Corporation X Balance Sheet as of XX/XX/XXXX | | | | |
| Assets |  |  | Liabilities and Owners Equity |  |
| Cash |  | $50,000 | Accounts Payable | $200,000 |
| Accounts Receivable |  | 250,000 | Other current liabilities | 50,000 |
| Inventories |  |  | Total current liabilities | $250,000 |
| Raw materials | $100,000 |  | Long-term debt | 300,000 |
| Finished goods | 200,000 |  |  |  |
| Total inventories |  | 300,000 |  |  |
| Total current assets |  | $600,000 |  |  |
| Plant and equipment |  | 400,000 |  |  |
| Total assets |  | $1,000,000 | Total liabilities and owners’ equity | $1,000,000 |

1. Operating profit margin = EBIT/Sales

Firm A: $150,000/$1,000,000 = 15%

Firm B: $150,000/$1,000,000 = 15%

Net profit margin = Net income/Sales

Firm A: $80,000/$1,000,000 = 8%

Firm B: $45,000/$1,000,000 = 4.5%

Both firms have the same operating profit margins; the difference in the net profit margin is the result of Firm B paying more interest.

Return on assets = Net income /Assets

Firm A: $80,000/$1,000,000 = 8%

Firm B: $45,000/$1,000,000 = 4.5%

Return on equity = Net income /Equity

Firm A: $80,000/$600,000 = 13.3%

Firm B: $45,000/$300,000 = 15%

1. In this problem sales are the same in both years. This permits the student to draw conclusions without having to make calculations.

a. Current assets are the same each year:

20x1: $19,000 + 11,000 + 20,000 = $50,000

20x2: $2,000 + 28,000 + 20,000 = $50,000.

Current liabilities increased:

20x1: $12,000 + 10,000 + 10,000 = $32,000

20x2: $12,000 + 10,000 + 30,000 = $52,000.

Hence the current ratio declined:

20x1: $50,000/$32,000 = 1.56

20x2: $50,000/$52,000 = 0.96.

Inventory did not change: $20,000.

The increase in current liabilities reduced the quick ratio:

20x1: $30,000/$32,000 = 0.94

20x2: $30,000/$52,000 = 0.58.

b. Since sales remain the same and receivables increased, days sale outstanding increased.

c. Retained earnings increased by $2,000 ($24,000 – 22,000).

The earnings that were distribution is $5,000 – 2,000 = $3,000.

The proportion of the earnings that were distributed is

$3,000/$5,000 = 0.6 = 60%.

1. (1) 

 Current liabilities = $270,000

(2) 

 Inventories = $432,000

(3) Current assets = Cash + Marketable securities + Accounts receivable + Inventories

$810,000 = $120,000 + Accounts receivable + $432,000

Accounts receivable = $258,000

(4) 

 CGS = $2,160,000

(5) CGS = 0.80 (Sales) 

(6) 

1. ROE = NI/Equity

We need to determine the inputs for the equation from the data that were given. On the left we set up an income statement, and we put numbers in it on the right:

Sales (given) $10,000

- Operating costs na

EBIT (given) $ 1,000

- INT (given) ( 300)

EBT $700

- Taxes (30%) ( 210)

NI $ 490

Now we can use some ratios to get some more data:

Total assets turnover = 2.0 = Sales/TA; TA = Sales/2 = $10,000/2 = $5,000

Debt/TA = 60%; so Equity/TA = 40%;

therefore, Equity = TA x Equity/TA = $5,000 x 0.40 = $2,000

Alternatively, Debt = TX x Debt/TA = $5,000 x 0.6 = $3,000;

Equity = TA – Debt = $5,000 - $3,000 = $2,000

ROE = NI/E = $490/$2,000 = 24.5%, and ROA = NI/TA = $490/$5,000 = 9.8%

1. a. Currently, ROE is ROE1 = $15,000/$200,000 = 7.5%

The current ratio will be set such that 2.5 = CA/CL. CL is $50,000 = $30,000 + $20,000, and it will not change, so we can solve to find the new level of current assets: CA = 2.5(CL) = 2.5($50,000) = $125,000. This is the level of current assets that will produce a current ratio of 2.5x.

At present, current assets amount to $210,000, so they can be reduced by $210,000 – $125,000 = $85,000.

If the $85,000 generated is used to retire common equity, then the new common equity balance will be $200,000 – $85,000 = $115,000.

Assuming that net income is unchanged, the new ROE will be ROE2 = $15,000/$115,000 = 13.04%. Therefore, ROE will increase by 13.04% – 7.50% = 5.54%.

b. (1) Doubling the dollar amounts would not affect the answer; the ROE increase would still be 5.54%.

(2) Current assets would have to be $150,000 = 3.0($50,000), which is $60,000 less than existing current assets. As a result, ROE = $15,000/$140,000 = 10.71%, which would mean a difference of 10.71% – 7.50% = 3.21%.

(3) If the company had 10,000 shares outstanding, then its EPS would be $15,000/10,000 = $1.50. The stock has a book value of $200,000/10,000 = $20, so the shares retired would be $85,000/$20 = 4,250, leaving 10,000 – 4,250 = 5,750 shares. The new EPS would be $15,000/5,750 = $2.6087, so the increase in EPS would be $2.6087 – $1.50 = $1.1087, which is a 73.91% increase, the same as the increase in ROE.

(4) If the stock was selling for twice book value, or 2 x $20 = $40, then only half as many shares could be retired ($85,000/$40 = 2,125), so the remaining shares would be 10,000 - 2,125 = 7,875, and the new EPS would be $15,000/7,875 = $1.9048, for an increase of $1.9048 - $1.5000 = $0.4048.