

Homework Week 2 Chapter 3

1. Which of the following statements is CORRECT?

- a. The ratio of long-term debt to total capital is more likely to experience seasonal fluctuations than is either the DSO or the inventory turnover ratio.
- b. If two firms have the same ROA, the firm with the most debt can be expected to have the lower ROE.
- c. An increase in the DSO, other things held constant, could be expected to increase the total assets turnover ratio.
- d. An increase in the DSO, other things held constant, could be expected to increase the ROE.

E(correct) An increase in a firm's debt ratio, with no changes in its sales or operating costs, could be expected to lower the profit margin.

2. Companies HD and LD have the same tax rate, sales, total assets, and basic earning power. Both companies have positive net incomes. Company HD has a higher debt ratio and, therefore, a higher interest expense. Which of the following statements is CORRECT?

- a. Company HD has a lower equity multiplier.
- b. Company HD has more net income.
- c. Company HD pays more in taxes.
- d. Company HD has a lower ROE.

E(correct) Company HD has a lower times interest earned (TIE) ratio.

3. Companies HD and LD have the same total assets, sales, operating costs, and tax rates, and they pay the same interest rate on their debt. However, company HD has a higher debt ratio. Which of the following statements is CORRECT?

- a. Given this information, LD must have the higher ROE.
- b. Company LD has a higher basic earning power ratio (BEP).
- c. Company HD has a higher basic earning power ratio (BEP).
- d. If the interest rate the companies pay on their debt is more than their basic earning power (BEP), then Company HD will have the higher ROE.

E(correct) If the interest rate the companies pay on their debt is less than their basic earning power (BEP), then Company HD will have the higher ROE.

4. Muscarella Inc. has the following balance sheet and income statement data:

Cash \$ 14,000 Accounts payable \$ 42,000
Receivables 70,000 Other current liabilities 28,000
Inventories 210,000 Total CL \$ 70,000
Total CA \$294,000 Long-term debt 70,000
Net fixed assets 126,000 Common equity 280,000
Total assets \$420,000 Total liab. and equity \$420,000
Sales \$280,000
Net income \$ 21,000

The new CFO thinks that inventories are excessive and could be lowered sufficiently to cause the current ratio to equal the industry average, 2.70, without affecting either sales or net income. Assuming that inventories are sold off and not replaced to get the current ratio to the target level, and that the funds generated are used to buy back common stock at book value, by how much would the ROE change?

- a. 4.28%

b(correct). 4.50%

- c. 4.73%
- d. 4.96%

e. 5.21%

Target current ratio = Current assets/current liabilities = 2.70

Target current assets = $2.70 \times 70,000 = 189,000$

Inventory to sell = Existing current asset – required current asset = $294,000 - 189,000 = 105,000$

New common equity = $280,000 - 105,000 = 175,000$

Old REO = $21,000 / 280,000 = 7.5\%$

New REO = $21,000 / 175,000 = 12\%$

Increase in REO = $12\% - 7.5\% = 4.5\%$

5. Quigley Inc. is considering two financial plans for the coming year. Management expects sales to be \$301,770, operating costs to be \$266,545, assets to be \$200,000, and its tax rate to be 35%. Under Plan A it would use 25% debt and 75% common equity. The interest rate on the debt would be 8.8%, but the TIE ratio would have to be kept at 4.00 or more. Under Plan B the maximum debt that met the TIE constraint would be employed. Assuming that sales, operating costs, assets, the interest rate, and the tax rate would all remain constant, by how much would the ROE change in response to the change in the capital structure?

A(correct)3.83%

b. 4.02%

c. 4.22%

d. 4.43%

e. 4.65%

Plan A

Debt = $25\% \times 200,000 = 50,000$

$$\text{Equity} = 75\% * 200,000 = 150,000$$

$$\text{Interest expense} = 50,000 * 8.8\% = 4,400$$

$$\text{TIE} = 35,225 / 4,400 = 8.01 \text{ times: meets minimum requirement of 4 times}$$

$$\text{Pretax income} = 35,225 - 4,400 = 30,825$$

$$\text{Tax} = 30,825 * 35\% = 10,788.75$$

$$\text{Net income} = 30,825 - 10,788.75 = 20,036.25$$

$$\text{ROE} = 20,036.25 / 150,000 = 13.36\%$$