

STUDY FOR THE QUIZ ON SUNDAY Feb 4

Course instructor: Sirinattha Techasiriwan

III. Value Enhancement, Estimating Growth

End of Chapter Exercises: Chapter 11 Estimating Growth

1. --
2. BIC Corporation reported a return on equity of 20% and paid out 37% of its earnings as dividends in the most recent year.
 - a) Assuming that these fundamentals do not change, estimate the expected growth rate in earnings per share.
 - b) Now assume that you expect the return on equity to increase to 25% on both new and existing investments next year. Estimate the expected growth rate in earnings per share.

Answer:

- a. Expected growth rate in earnings per share = $20\% * (1-.37) = 12.6\%$
- b. Expected growth rate in earnings per share if ROE changes = $.25 (1-.37) + (.25-.20)/.20 = 40.75\%$

3. You are trying to estimate the expected growth in net income at Metallica Corporation, a manufacturing firm that reported \$150 million in net income in the just-completed financial year; the book value of equity at the beginning of the year was \$1 billion. The firm had capital expenditures of \$160 million, depreciation of \$100 million, and an increase in working capital of \$40 million during the year. The debt outstanding increased by \$40 million during the year. Estimate the equity reinvestment rate and expected growth in net income.

Answer:

Return on equity = $150/1000 = 15\%$

Equity reinvestment rate = $\{(\text{Net cap ex} + \text{Change in working capital}) - \text{Net Debt issued}\} / \text{Net Income}$
 $= ((160 - 100 + 40) - 40) / 150 = 40\%$

Expected growth rate = $15\% * .40 = 6\%$

4. --
5. --

STUDY FOR THE QUIZ ON SUNDAY Feb 4

Course instructor: Sirinattha Techasiriwan

III. Value Enhancement, Estimating Growth

End of Chapter Exercises: Chapter 32 Value Enhancement

1. Everlast Batteries Inc. has hired you as a consultant. The firm had after-tax operating earnings in 1998 of \$180 million and net income of \$100 million, and it paid a dividend of \$50 million. The book value of equity at the end of 1998 was \$1.25 billion, and the book value of debt was \$350 million. The firm raised \$50 million of new debt during 1998. The market value of equity at the end of 1998 was twice the book value of equity, and the market value of debt was the same as the book value of debt. The firm has a cost of equity of 12% and an after-tax cost of debt of 5%.
 - a) Estimate the return on capital earned by Everlast Batteries.
 - b) Estimate the cost of capital earned by Everlast Batteries.
 - c) Estimate the economic value added by Everlast Batteries.

Answer:

Book value of equity at start of year = $1,250 - 50 = \$1200$ (after subtracting out retained earnings of \$50 million)

Book value of debt at start of year = $350 - 50 = \$300$

Book value of capital at start of year = \$1500

- a) Return on capital = $180/1500 = 12\%$
 - b) Cost of capital = $12\%(2500/(2500 + 350)) + 5\% (350/(2500+350)) = 11.14\%$ (Note that the market value of equity was double the book value at the end of 1998.)
 - c) EVA = $(.12 - .1114) (1500) = \$12.89$
2. --
 3. -
4. Sevilla Chemicals earned \$1 billion in after-tax operating income on capital invested of \$5 billion last year. The firm's cost of equity is 12%, its debt-to-capital ratio is 25%, and the after-tax cost of debt is 4.5%.
 - a) Estimate the economic value added by Sevilla Chemicals last year.
 - b) Assume now that the entire chemical industry earned \$40 billion after taxes on capital invested of \$180 billion, and that the cost of capital for the industry is 10%. Estimate the economic value added by the entire industry.
 - c) Based on economic value added, how did Sevilla do relative to the industry?

Answer:

Return on capital = $1/5 = 20\%$

Cost of capital = $.12(.75) + .045(.25) = 10.125\%$

a. EVA = $(.20 - .1025) (1000) = \$97.50$

b. Return on capital for the industry = 22.22%

EVA based on industry numbers = $(.2222 - .10) (1000) = \$122.22$

c. Sevilla **underperformed** the industry