

系所組：財務金融學系碩士班

M-8-6

日期節次：100年3月19日第1節 09:00-10:30

科目：財務管理

每題 25 分：

1. Nissan Motors recently reported the following information:

- Net income = \$600,000.
- Tax rate = 40%.
- Interest expense = \$200,000.
- Total investor-supplied operating capital employed = \$9 million.
- After-tax cost of capital = 10%.

What is the company's EVA?

2. Please describe the strategies manager may use to maximize their firms value in the long run by managing the "Price-Earnings ratio".

(Hint: try to analysis the components of P/E ratio.)

3. Dobson Dairies has a capital structure that consists of 60 percent long-term debt and 40 percent common stock. The company's CFO has obtained the following information:

- The before-tax yield to maturity on the company's bonds is 8 percent.
- The company's common stock is expected to pay a \$3.00 dividend at year end ($D_1 = \$3.00$), and the dividend is expected to grow at a constant rate of 7 percent a year. The common stock currently sells for \$60 a share.
- Assume the firm will be able to use retained earnings to fund the equity portion of its capital budget.
- The company's tax rate is 40 percent.

What is the company's weighted average cost of capital (WACC)?

4. An analyst is interested in using the Black-Scholes model to value call options on the stock of BBS Inc. The analyst has accumulated the following information:

- The price of the stock is \$40.
- The strike price is \$40.
- The option matures in 3 months ($t = 0.25$).
- The standard deviation of the stock's returns is 0.40 and the variance is 0.16.
- The risk-free rate is 12 percent.

Given this information, the analyst is then able to calculate some other necessary components of the Black-Scholes model:

- $d_1 = 0.25$.
- $d_2 = 0.05$.
- $N(d_1) = 0.5987$.
- $N(d_2) = 0.5199$.

$N(d_1)$ and $N(d_2)$ represent areas under a standard normal distribution function. Using the Black-Scholes model, what is the value of the call option?