

## EE431 Semester 2/2017

### Assignment 4 (will not be graded)

#### Stock Valuation and CAPM

---

##### **Question 1: Basic DFC model**

Suppose that a company paid a recent dividend of \$2.40 per share, and shareholders expect that dividend will be growing at the rate of 6%. What is the fair price of the stock of company A if the required rate of return is 10.2%

##### **Question 2 Basic CAPM**

Suppose that the risk-free rate is now equal to 5%, and the average return of market portfolio is equal to 14% as well. Calculate the expected rate of return for the asset whose beta is equal to 0.5 and 0, respectively.

**Question 3:** In the most recent meeting, company paid the dividend of \$4 per share. According to study, investors believe that dividend is supposed to grow at the rate of 3% per annual. Consider the following problems.

3.1) calculate the required rate of return of the stock if current price is equal to \$103

3.2) Following 3.1, if the risk-free rate is equal to 5% and the market portfolio return is equal to 10%, calculate the beta coefficient of this stock.

**Question 4:** XYZ corporations' stock recently paid a dividend of \$4 per share ( $D_0 = \$4$ ). The company has a constant growth rate of  $g = 6\%$  and a beta equal to 1.8. The required rate of return on the market is 8% and the risk-free rate is 4%. The company is considering a change of policy, which will increase its beta to 2. If market conditions remain unchanged, what new constant growth rate will cause the common stock price remain the same?

**Question 5:** A company paid a recent dividend of \$2 per share. ( $D_0 = \$2$ ) and it had a beta of 1.8 before a reevaluation of company's risk. Before reevaluation, company's stock price was \$100. After the reevaluation, the stock price dropped to

\$80 due to a change in its beta. The dividend growth rate “g” is constant and it remained the same after reevaluation. The *market risk premium* is 5% and the risk-free rate is 4%: What is the new beta of the company that caused the price increase?

**Question 6: Read the question carefully.**

IBM’s year-end dividend is expected to be \$2.15, the growth rate will be 11.2% forever, and your required return is 15.2%

- 6.1) What is the intrinsic value now?
- 6.2) If the market is efficient, what’s the next year’s expected price?
- 6.3) If you buy it now and sell it after dividend payment, what’s your expected capital gain, dividend yield, and holding period return?

**Question 7:** What will the dividend growth rate be if a company’s ROE is 14%, and it retains 91% of its earnings (i.e., 9% dividend payout ratio.)

**Question 8:** On the end of year 2015, the four-year-ahead forecasts for SAMSUNG’s dividend are 0.17, 0.183, 0.197, and 0.21. After the fourth year, most analysts believe that Apple’s dividend would grow at 12.74%. Suppose that the required return of SAMSUNG stock is 13.8%. Use the multi-stage growth model to calculate the current fair price of SAMSUNG stock.

**Question 9:** Use the following information:

ART has come out with a new and improved product. As a result, the firm projects an ROE of 25%, and it will maintain a plowback (retention) ratio of 0.20. Its earnings this year will be \$3 per share. Investors expect a 12% rate of return on the stock.

9.1) At what price would you expect ART to sell now?

- A) \$25.00    B) \$34.29    C) \$42.86    D) none of the above

9.2) What price do you expect ART shares to sell for in 4 years?

- A) \$53.96    B) \$44.95    C) \$41.68    D) None of the above

**Question 10:** You are considering acquiring a common share of Sahali Shopping Center Corporation that you would like to hold for one year. You expect to receive both \$1.25 in dividends and \$35 from the sale of the share at the end of the year. The maximum price you would pay for a share today is \_\_\_\_\_ if you wanted to earn at least a 12% return.

A) \$31.25

B) \$32.37

C) \$38.47

D) \$41.32