Corporate Finance

HW 3

Due on Nov 11th, 2024

1 Consider the following two types of bonds:

Bond A: A ten year zero coupon Bond

Bond B: A ten year, 10% coupon bearing Bond, paying the coupon once every year. Both bonds have a face value of $1,000 and have a similar risk. For that reason the yield to maturity of both bonds is 9%.

A What are the current prices of the above two types of bonds?

B Suppose that next year, when you plan to sell the bonds, the yield to maturity of the bonds remains at 9%. What rate of return will each of the bonds generate over the year? Can you identify the current yield and the capital gains yield?

(Note that current yield is the coupon payment divided by current price.)

C Suppose instead that the yield to maturity of the bonds drops to 7% at the end of the year. Re-calculate the rates of return of each of the bonds.

2 Cogent Consultants expects to earn $8.46 per share next year, which, following past practice, it will pay out to shareholders as a cash dividend. The firm's new CEO, however, would like to permanently change policy and pay out only 40% of earnings and retain the remaining 60% for investment in new projects. The CEO believes that the new projects will provide a 20% return, much higher than the firm's 15% cost of capital.

A What is the firm's stock price if it continues paying out all earnings as dividends?

B If the new CEO gets her way, what would happen to Cogent Consultant's stock price?

(Hint: You are supposed to show two methods to solve this problem: one is dividend discount model; the other is NPVGO model).

3 Consider the following information about Stocks A and B:

State of Economy	Probability of State of Economy	Rate of Return if State Occurs	
		Stock A	Stock B
Recession	0.15	0.05	-0.21
Normal	0.70	0.18	0.10
Irrational exuberance	0.15	0.07	0.39

The market risk premium is 7 percent and the risk-free rate is 3.5 percent. Which stock has more systematic risk? Which one has more unsystematic risk?

4 Hoosic Company has $285 million of risk free debt outstanding at the same time its common stock is worth $665 million. Analysis indicates that the firm’s equity has a beta of 1.25. Ignore taxes.

A What is the firm’s asset beta?
B Hoosic’s cost of debt is 6%, same as the risk free rate. The return on the market is 14%. What is Hoosic’s WACC? (No taxes)
C Now assume Hoosic pays taxes at a 35% rate. Before tax cost of debt is still 6%, and the cost of equity is now 14.95%. What is the WACC?
D Hoosic has an investment project. The project costs $275,000 and will generate an after tax cash flow of $34,905 per year forever. Hoosic intends on keeping the debt-equity ratio constant. What is the NPV of this project?