

Quiz 3: Corporate Finance

Answer all questions and show necessary work. Please be brief. This is an open books, open notes exam.

1. Mason Inc. is a small steel company with 40 million shares trading at \$ 50 a share and debt outstanding (in book and market terms) of \$ 500 million. The interest expense on the debt in the most recent year was \$ 30 million and the marginal tax rate for the firm is 40%. The levered beta for the firm is 1.15, the equity risk premium is 4% and the riskfree rate is 5%.

a. Estimate the current cost of capital for the firm. (2 points)

b. Assume that the firm is planning on borrowing \$ 1 billion and buying back stock. If it does so, it expects its bond rating to drop to BB and the market interest rate on all of its debt to rise to 8%. If the firm expects to have operating income (EBIT) of only \$ 100 million next year, estimate the new cost of capital for the firm. (3 points)

2. Scott Transportation is a trucking company with 15 million shares trading at \$ 10 a share, no debt outstanding and a cost of equity of 12%. It plans to borrow \$50 million and buy back shares at \$12.50 a share. In the process, it expects to lower its cost of capital to 10%. Assuming no growth in firm value, estimate the value per share of the shares left over after the buyback. (3 points)

3. Kedarva Lighting is a manufacturer of appliances and has three-year zero coupon debt outstanding with an estimated market value of \$ 100 million. Its current projects have an estimated value of \$ 200 million and a duration of 5 years. The firm is considering investing in a new 10-year project with a value of \$ 100 million and funding the project entirely with zero coupon debt. If the objective is to match the duration of the assets to the duration of the debt for the entire firm, estimate the maturity of the new zero coupon debt. (2 points)