

Session 6: Post Class tests

- Gerard Enterprises is a publicly traded company. You are trying to estimate how much debt it has outstanding, to compute a cost of capital. Which of the following items would you not include in debt and why?
 - Short term bank loans
 - Commercial paper
 - Corporate bonds
 - Deferred Tax Liabilities
 - None of the above
- Lipscott Inc. is a publicly traded company that has \$100 million in bank loans on its books, with a stated interest rate of 3% and \$150 million in publicly traded bonds, with a coupon rate of 3.6%. The company currently has a bond rating of BBB, with a default spread of 1.5% over the risk free rate. If the current T.Bill rate is 1%, the ten-year T.Bond rate is 3.5% and the marginal tax rate is 35%, what is the pre-tax cost of debt?
 - 3.36%
 - 3.60%
 - 5.00%
 - 2.50%
 - 3.50%
- Alfred Inc. is a publicly traded sporting goods company. The company has \$ 250 million in book value of debt, reported interest expenses of \$ 12.5 million in the most recent year and has an average maturity of 5 years for the debt. The pre-tax cost of debt for the firm is currently 4%. What is your best estimate of the market value of debt outstanding at the firm? (You can assume annual interest payments and a marginal tax rate of 40%)
 - \$261.12 million
 - \$250.00 million
 - \$280.29 million
 - \$243.01 million
 - \$156.68 million
- Faraday Enterprises is a publicly traded company. It currently has 10 million shares trading at \$12/share and \$150 million in book value of equity. The firm also has book value of debt of \$ 75 million and market value of debt of \$ 80 million. The cost of equity for the company is 9%, the pre-tax cost of debt is 4% and the marginal tax rate is 40%. What is the cost of capital?
 - 7.4%
 - 7.0%
 - 7.7%
 - 6.36%
 - None of the above
- Lester Inc. has 5 million shares outstanding, trading at \$20/share. The company has one convertible bond, with a face value of \$ 100 million, a ten-year maturity and a coupon rate of 2%; the bond has a market value of \$120 million. If the

current cost of equity for the firm is 10% and the pre-tax cost of debt is 5%, what is the cost of capital for the firm? (The marginal tax rate is 40%)

- a. 5.20%
- b. 6.18%
- c. 7.55%
- d. 8.25%
- e. None of the above

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1. **d. Deferred tax liabilities.** These are not legal commitments in the conventional sense but accounting liabilities (reflecting expectations that the firm will have to pay more in taxes in the future).
2. **d. 5.00%.** The pre-tax cost of debt is a long term cost of borrowing money today.
 - Pre-tax cost of debt = $3.5\% + 1.5\% = 5\%$
3. **a. \$261.12 million.** To compute the market value of the debt, discount the expected interest expenses and the principal on the debt at the pre-tax cost of debt
 - Market value of debt = $12.5 * (1 - 1.04^{-5}) / 0.04 + 250 / 1.04^5 = \261.12 m
 - The first term is the present value of \$12.5 million as an annuity for 5 years, discounted back at 4%. The second term is the present value of the face value of the debt at the end of year 5.
4. **d. 6.6%.** The first step is to compute the market value weights of debt and equity
 - Debt to capital ratio = $80 / (120 + 80) = 40\%$
 - Cost of capital = $9\%(.6) + 4\% (1-.4) (.4) = 6.36\%$
5. **c. 7.55%.** The first step is to decompose the convertible bond into its debt and equity components. To do this, value the convertible bond as if it were a straight bond by discounting the coupons and face value back at the pre-tax cost of debt:
 - Value of straight bond portion = $\$2 \text{ million (PV of annuity for 10 years @5\%)} + \$100 \text{ million} / 1.05^{10} = \76.83 million
 - Value of conversion option = $\text{Market value of convertible} - \text{Straight bond value} = \$120 - \$76.83 = \43.17 million
 - Overall value of equity = $\$143.17 \text{ million}$
 - Cost of capital = $10\% (143.17 / (143.17 + 76.83)) + 5\% (1-.4) (76.83 / (143.17 + 76.83)) = 7.55\%$