

Assume the corporate tax rate is 30%, the individual tax rate on equity income is 5%, and the individual tax rate on interest income is 20%. Assume also that there is a 10% chance that Wind Inc. will realize Earnings Before Interest and Taxes (EBIT) of \$2 million, a 30% chance that Wind will realize an EBIT of \$8 million, a 35% chance that Wind will realize an EBIT of \$14 million, and a 25% chance that Wind will realize an EBIT of \$20 million.

- What is the optimal level of interest for Wind? Note: Calculations required. Show your work if you want to receive any partial credit.
- Which of the issues we discussed in chapter 16 might cause Wind to optimally have more debt than you answered in part a? Note: a list of the issues without any discussion is fine.

a. τ^*

$$\frac{8-14}{+5(\tau^*)} = 1 - \frac{(1 - (.10)(.3)) (1 - .05)}{(1 - .2)} = .02625 \quad (??)$$

$$\frac{14-20}{+5(\tau^*)} = 1 - \frac{(1 - (.25)(.3)) (1 - .05)}{(1 - .2)} = -0.09844 \quad (??)$$

\Rightarrow optimal = 14 + 11

b. Stockholder-manager conflict +5

As a signal of mgt's confidence +5

-3 for each incorrect