Scale

45 = 75
35 = 71
33 = 69
32 = 67
30 = 65
28 = 63
27 = 62
26 = 61
24 = 60
22 = 58
20 = 55
18 = 52

Quiz A for 1:15 Class: 7/25/12 Name Key

Assume that New Aquatics Inc's EBIT has a 20% chance of equaling \$1,000,000, a 50% chance of equaling \$6,000,000, and a 30% chance of equaling \$9,000,000. Assume also that New Aquatic's tax rate equals 35% and that the tax rate on equity income equals 20% and that the tax rate on interest income equals 30%.

a. Considering only tax issues, determine the optimal level of interest expense for New Aquatics? (Note: Calculations required).

b. Assume New Aquatics reduced its debt below the level of debt you identified as optimal in part "a". Assume also that New Aquatic's stock price rose when the firm reduced its debt. How would you explain this reaction?

a. 32

1 – 6

$E(\tau_c) = .8(.35) = .28$

$$\tau^* = 1 - \frac{(1-.28)(1-.2)}{1-.3} = +0.1771$$ 14

6 – 9

$E(\tau_c) = .3(.35) = 0.105$

$$\tau^* = 1 - \frac{(1-.105)(1-.2)}{1-.3} = -0.0229$$ 14

=> optimal = 6 million

b. 17

1) By reducing debt, the expected bankruptcy and financial distress costs will fall

=> less debt lowers the probability of bankruptcy and financial distress

2) By having less debt, the interest rate on the debt might be lower and covenants less binding on the firm

=> by reducing their debt, the firm has less potential conflict of interest between the firm's stockholders and bondholders