63

Scale
46=75
40=72
39=71
36=68
35=67
32=63
28=61
27=59
26=58
24=55
16=52

Quiz A for 9:45 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%, 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 issues debt beyond the level of debt you identified as optimal in part "a". Assume also that New Aquatic's stock price rose when the firm issued the additional debt. How would you explain this reaction?

a.

<u>1 – 6</u>

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

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

<u>6 – 9</u>

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

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

=> optimal = 6 million i.e. range

10 b. 1) The stock price might have risen because the debt helps resolve stockholder-manager conflict.

=> cash will be used for debt service so management won't waste it

=> creditors help monitor management

=> threat of bankruptcy motivates managers to work harder

2) The debt issuance might signal management's confidence in the firm.

=> management is reluctant to issue debt unless they are confident in ~~the future~~ can make service debt in future

=> failure to make payments will result in bankruptcy and the possible (likely) firing of management