

Short Answer 1 (15 points): Gamma Air's stock has a market value of \$200 million and its debt has a market value of \$100 million. You currently own \$195,000 of Gamma Air stock and \$105,000 of Gamma Air bonds. What transactions would be required for you to have an unlevered position in Gamma Air?

+8/+7 Buy \$5000 of Gamma stock + sell \$5000 of Gamma bonds

Short Answer 2 (15 points): Briefly explain how debt helps resolve stockholder-manager conflict after it is issued.

+11 +3
-1/10/+1

- 1) cash used for debt service so mgt won't waste it
- 2) creditors help monitor management
- 3) Threat of bankruptcy motivates management to work harder

Problem (75 points): Space Balloon Inc. has a 10% chance of earning \$8 million, a 30% chance of earning \$17 million, a 40% chance of earning \$23 million, and a 20% chance of earning \$36 million. If the corporate tax rate equals 35%, the personal tax rate on equity income equals 15%, and the personal tax rate on ordinary income equals 40%, what is the optimal level of interest expense for Space Balloon?

Note: Calculations required. You will only receive partial credit if you show your work.

Wall Street Journal Questions are on the back of this page.

+3 + debt show

$$+7 \left(T^* = 1 - \frac{(1 - (.9 \times .35))(1 - .15)}{(1 - .4)} \right) = +0.07917 \quad (34)$$

+3 + debt show

$$+7 \left(T^* = 1 - \frac{(1 - (.6 \times .35))(1 - .15)}{(1 - .4)} \right) = -0.1192 \quad (34)$$

+7 \Rightarrow optimal = 17

Note: 0-8: $T^* = +0.07917$

23-36: $T^* = -0.3175$

36+: $T^* = -.4167$