Quiz B for 2:30 Class: 10/23/13

Short Answer 1 (15 points): Gamma Air’s stock has a market value of $100 million and its debt has a market value of $50 million. You currently own $110,000 of Gamma Air stock and $40,000 of Gamma Air bonds. What transactions would be required for you to have an unlevered position in Gamma Air?

\[ \text{Sell } 9,000 \text{ shares of Gamma stock} \text{ and buy } 10,000 \text{ of Gamma bonds} \]

Short Answer 2 (15 points): Briefly explain why it will be rational for managers to expend less effort than is optimal for stockholders.

Management bears the cost of its effort but shares the benefit with stockholders.

Problem (75 points): Space Balloon Inc. has a 20% chance of earning $5 million, a 40% chance of earning $9 million, a 30% chance of earning $17 million, and a 10% chance of earning $29 million. If the corporate tax rate equals 35%, the personal tax rate on equity income equals 10%, and the personal tax rate on ordinary income equals 30%, 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.

\[ \begin{align*}
    P^* & = 1 - \left(1 - (1.8)(0.35)(1 - 1)\right) \\
    & = 0.0243
\end{align*} \]

\[ \begin{align*}
    P^* & = 1 - \left(1 - (4)(0.35)(1 - 1)\right) \\
    & = -0.105
\end{align*} \]

\[ \text{Optimal} = 9 \]

Note: 0-5: \[ P^* = +0.1643 \]

17-29: \[ P^* = -0.2407 \]

29+: \[ P^* = -0.2857 \]