Quiz: 3/19/12

Quiz: Assume the corporate tax rate is 40%, the personal tax rate on interest income is 20% and the personal tax rate on equity income is 10%. Determine the optimal capital structure for Robot Corporation if the firm has a 70% chance of having an annual EBIT of $4,000,000 and a 30% of having an annual EBIT of $5,000,000.

Note: You will need to do enough calculations to show that your answer is optimal.

Note: Bonus WSJ Questions on back of page

\[
\begin{align*}
\tau^* &= 1 - \frac{(1-0.7)(1-0.1)}{(1-0.2)(1-0.1)} = 0.12 \quad \text{(22)} \\
\tau^* &= 1 - \frac{(1-0.3)(1-0.1)}{(1-0.2)(1-0.1)} = 0.25 \quad \text{(22)}
\end{align*}
\]

\[
\tau^* = \frac{0.1 - \tau^2}{1 - \tau} =
\]

\[
\Rightarrow \text{Optimal interest} = 5 \text{ million}
\]