Assume the corporate tax rate equals 30%, that the personal tax rate on equity income equals 10%, and that the personal tax rate on interest income equals 20%. Assume also that TaxFlow Inc. has a 20% chance of earning $5 million per year, a 30% chance of earning $10 million per year, a 35% chance of earning $25 million per year, and a 15% chance of earning $50 million per year. What is TaxFlow’s optimal level of interest payments?

Note: You will need to perform calculations to justify your answer. Show your work in case you need partial credit.

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

\[
\begin{align*}
10-25 & : \quad \tau^* = 1 - \frac{(1 - (0.5)(0.3))(1 - 0.1)}{(1 - 0.2)} = 0.04325 \\
25-52 & : \quad \tau^* = 1 - \frac{(1 - (0.15)(0.3))(1 - 0.1)}{(1 - 0.2)} = -0.07438 \\
\Rightarrow \text{optimal} & = 25 + 4 \\
\end{align*}
\]

Note:

0-5: \quad \tau^* = 0.2125 \\
5-10: \quad \tau^* = 0.145 \\
10-50: \quad \tau^* = -0.125