Corporate Finance: Optimal Capital Structure

The recent growth of McLeodUSA prompted the firm once again to go into the financial markets and file a registration statement for another $400 million in 10-year senior notes. This move represents the fifth time in the last 27 months that McLeod has borrowed in the private debt market raising over $1.125 billion.

The reason for the offering was given as a need to raise capital to fund continued expansion in the area of intracity fiber optic networks. Acquisitions, joint ventures, and other strategic alliances have been the source of capital usage in the past and McLeod will certainly keep these types of options open in the future.

With such a great need for outside capital, McLeod has decided to fully investigate their optimal capital structure. As such, they have decided to gather data to help analysts with the necessary calculations. Table 1 provides expected levels of earnings per share (EPS), standard deviation in EPS, and estimated required rates of return associated with each capital structure scenario.

Table 1

Debt Ratio	Expected EPS	Standard Deviation of EPS	Estimated Required Rate of Return
0%	$0.38	$0.21	10.3%
10%	$0.43	$0.26	10.6%
20%	$0.49	$0.33	11.4%
30%	$0.55	$0.45	12.2%
40%	$0.60	$0.62	13.4%
50%	$0.52	$0.84	16.7%
60%	$0.41	$1.08	20.6%

Questions

1. Calculate the coefficient of variation in EPS for each of the seven debt scenarios using the data in Table 1.

2. Using the zero-growth valuation model, calculate the estimated stock price of McLeod under each of the seven debt scenarios.

3. What are the two simplifying assumptions that the zero-growth valuation model makes?

4. Based on the zero-growth valuation model, what is McLeod's optimal level of debt?

5. Note from Table 1 that expected EPS are maximized at a debt level of 40%. Does this optimum agree with the optimal capital structure derived from the zero-growth valuation model? Which of the two should McLeod be more concerned with maximizing? Explain.