Spreads in the Merton model

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1 Inputs

Consider the following parameters for the Merton model:

- Risk-free rate = 0.05
- Asset volatility (σ) = 0.2
- Face value of debt (F) = 100

2 Questions

Ex. 1 — Assume that the Assets Value (V_0) is 200. Plot the default spread for maturities up to 10 years (start at 0.2 years).

Ex. 2 — Assume that the Assets Value (V_0) is 95. Plot the default spread for maturities up to 10 years (start at 0.2 years).

Ex. 3 — Comment on the different shapes of these two plots. In particular, for each plot give an intuitive and short explanation for the following:

1. Why do the spreads increase/decrease?
2. Do short-term spreads (up to around 1 year) seem reasonable? Why do they look like they do?