Chapter 6 Solutions

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Ex 1. CDO premium should be k s.th.

$$\mathbb{E}^{\mathbb{Q}}[\text{default leg}] = \mathbb{E}^{\mathbb{Q}}[\text{premium leg}]$$

which yields

$$\text{CDO premium} = \frac{\sum_{i=1}^{n} \mathbb{E}^{\mathbb{Q}}[Z_j(t_i) - Z_j(t_{i-1})]\, e^{-rt_i}}{\sum_{i=1}^{2} \delta\,[Z_{Uj} - Z_{Lj} - \mathbb{E}^{\mathbb{Q}}[Z_j(t_i)]]\, e^{-rt_i}}$$

for the tranche j, $j = 1, 2, 3$ #

Remark: it is key to compute $\mathbb{E}^{\mathbb{Q}}[Z_j(t_i)]$, which is determined by the distribution of total loss $L(t)$.