Problem 3

Principal : 10 mil
Fixed rate : 4% per annum every 6 months
Period : 5 years
Forward rate$_{6\text{th}}$: 2% per annum
Libor$_{2.5}$: 3% per annum
Default ois : 1.8% per annum

Last cash flow,

year 3   : $(0.04 \cdot 10m \cdot 1 \cdot 0.5) - (0.03 \cdot 10 \cdot 0.5) = 50000$

year 3.5 : $200,000 - 0.02 \cdot 10 \cdot 0.5 = 100\,000$

year 4 : $100,000$

year 4.5 : $100,000$

year 5 : $100,000$

$$PV = 50,000 + 100,000 \left(e^{-0.018 \cdot 0.5} + e^{-0.018 \cdot 1} + e^{-0.018 \cdot 1.5} \quad e^{-0.018 \cdot 2} \right) = \$441,120$$