SOLUZIONE MATEMATICA FINANZIARIA

17/09/2014

EX1 $i_s = \left[(1+i_{TR})^2 - 1\right] = 10.25\%$

$$\jmath^{(3)} = 3\left[(1+i)^{\frac{1}{3}} - 1\right] = 0,0297 = 2.97\%$$

$$\delta = \log(1+i) = \log\left(1+i_{\frac{1}{2}}\right)^2 = 2\log\left(1+i_{\frac{1}{2}}\right) = 7.84\%$$

EX2

$$6R_m \ddot{s}^{(6)}_{\overline{60}|i_s} = 3\bar{R}_m \cdot a^{(3)}_{\overline{80}|i_{TR}}$$

dove R_m? $\bar{R}_m = 1200$; $i_s = 8\%$; $i_{TR} = 4\%$

$$R_m = \frac{3\bar{R}_m \cdot a^{(3)}_{\overline{80}|i_{TR}}}{6\ddot{s}^{(6)}_{\overline{60}|i_s}} = \frac{1200 \cdot \frac{i_{TR}}{\jmath^{(3)}_{TR}} \cdot a_{\overline{80}|i_{TR}}}{2(1+i_s)\cdot \frac{i_s}{\jmath^{(6)}_s} \cdot s_{\overline{60}|i_s}}$$

$$= \frac{600\left[1-(1+i_{TR})^{-80}\right]\cdot \jmath^{(6)}_s}{(1+i_s)\cdot \jmath^{(3)}_{TR}\cdot\left[(1+i_s)^{60}-1\right]} \simeq 66,11 €$$

EX3 $6R_m \cdot s^{(6)}_{\overline{40}|i_s} = 120.000$ $\quad R_m = ?$ $\quad i_s = 4\%$ $\quad n = 20$

$$\Rightarrow R_m = \frac{120.000}{6\cdot \frac{i_s}{\jmath^{(6)}_s}\cdot\left[(1+i_s)^{40}-1\right]} = \frac{20.000\cdot \jmath^{(6)}_s}{(1+i_s)^{40}-1} \simeq 207,1 €$$

$\jmath^{(6)}_s = 3.93\% \simeq$

Ex 4 $(\mathcal{C}, 0)$ $n = 10$ diff: $t = 2$ anni, metodo Tabiri

$\bar{\mathcal{C}} = \mathcal{C}(1+i)^2$ a $t = 2$ $\quad \mathcal{C}_* = \frac{\bar{\mathcal{C}}}{10}$

$t = 3$ $\quad I_1 = \bar{\mathcal{C}} \cdot i$; $\mathcal{C}_*$; $R_1 = \mathcal{C}_* + I_1$; $\mathcal{C}^{(1)} = \bar{\mathcal{C}} - \mathcal{C}_*$

$t = 4$ $\quad I_2 = \mathcal{C}^{(1)} \cdot i$; $\mathcal{C}_*$; $R_2 = \mathcal{C}_* + I_2$; $\mathcal{C}^{(2)} = \bar{\mathcal{C}} - \mathcal{C}_* - \mathcal{C}_*$

$\vdots$

$t = 12$ $\quad I_{10} = \mathcal{C}^{(9)} \cdot i$; $\mathcal{C}_*$; $R_{10} = \mathcal{C}_* + I_{10}$; $\mathcal{C}^{(10)} = \mathcal{C}^{(9)} - \mathcal{C}_* \equiv 0$

$t = 4$ $\quad \mathcal{C}_* = 0$ 2° quota capitale $\Rightarrow \tilde{\mathcal{C}}^{(2)} = \mathcal{C}^{(1)}$

$R = \frac{\tilde{\mathcal{C}}^{(2)}}{a_{\overline{8}|i}}$

$t = 5$ 3° rata: $\tilde{I}_3 = \tilde{\mathcal{C}}^{(2)} \cdot i$; R ; $\tilde{\mathcal{C}}_3 = R - \tilde{I}_3$; $\tilde{\mathcal{C}}^{(3)} = \tilde{\mathcal{C}}^{(2)} - \tilde{\mathcal{C}}_3$

$\vdots$

$t = 12$ 10° rata $\tilde{I}_{10} = \tilde{\mathcal{C}}^{(9)} \cdot i$; R ; $\tilde{\mathcal{C}}_{10} = R - \tilde{I}_{10}$; $\tilde{\mathcal{C}}^{(10)} = \tilde{\mathcal{C}}^{(9)} - \tilde{\mathcal{C}}_{10} = 0$

$t = 9$ 7° rata: $\tilde{\tilde{\mathcal{C}}}_7 = 0 \Rightarrow \tilde{\tilde{\mathcal{C}}}^{(7)} = \tilde{\tilde{\mathcal{C}}}^{(6)}$ MUTUO PURO

$t = 10$ 8° rata: $\tilde{\tilde{I}}^{(8)} = \tilde{\tilde{\mathcal{C}}}^{(7)} \cdot i$ $\quad \tilde{\tilde{\mathcal{C}}}^{(8)} = \tilde{\tilde{\mathcal{C}}}^{(7)} = \tilde{\tilde{\mathcal{C}}}^{(6)}$

$t = 11$ 9° rata $\tilde{\tilde{I}}^{(9)} = \tilde{\tilde{I}}^{(8)}$ $\quad \tilde{\tilde{\mathcal{C}}}^{(9)} = \tilde{\tilde{\mathcal{C}}}^{(8)}$

$t = 12$ 10° rata $\tilde{\tilde{I}}^{(10)} = \tilde{\tilde{I}}^{(9)}$; $\tilde{\tilde{\mathcal{C}}}_{10} = \tilde{\tilde{\mathcal{C}}}^{(8)} = \tilde{\tilde{\mathcal{C}}}^{(6)}$

$\tilde{\tilde{R}}_{10} = \tilde{\tilde{\mathcal{C}}}_{10} + \tilde{\tilde{I}}^{(10)}$; $\tilde{\tilde{\mathcal{C}}}^{(10)} = 0$

CASH-FLOW:

$$\{(-\mathcal{C},0)(R_1,3)(I_2,4)(R,5)(R,6)\ \text{[illegible]}\ (R,\#)$$
$$(R,8)(\tilde{I}_7,9)(\tilde{\tilde{I}}_8,10)(\tilde{\tilde{I}}_9,11)(\tilde{\tilde{R}}_{10},12)\}$$

$$A^{(3)}(i_1) = I_1(1+i_1)^{-1} + R\left[(1+i_1)^{-2} + (1+i_1)^{-3} + (1+i_1)^{-4} + (1+i_1)^{-5}\right] +$$
$$+ \tilde{I}_7(1+i_1)^{-6} + \tilde{\tilde{I}}_8(1+i_1)^{-7} + \tilde{\tilde{I}}_9(1+i_1)^{-8} + \tilde{\tilde{R}}_{10}(1+i_1)^{-9}$$

NUDA PROPRIETA':

$$K^{(3)}(i_1) = \tilde{\mathcal{C}}_3(1+i_1)^{-2} + \tilde{\mathcal{C}}_4(1+i_1)^{-3} + \tilde{\mathcal{C}}_5(1+i_1)^{-4} + \tilde{\mathcal{C}}_6(1+i_1)^{-5} +$$
$$+ \tilde{\tilde{\mathcal{C}}}_{10}(1+i_1)^{-9}$$

USUFRUTTO:

$$U^{(3)}(i_1) = I_1(1+i_1)^{-1} + \tilde{I}_3(1+i_1)^{-2} + \tilde{I}_4(1+i_1)^{-3} + \tilde{I}_5(1+i_1)^{-4} + \tilde{I}_6(1+i_1)^{-5}$$
$$+ \tilde{I}_7(1+i_1)^{-6} + \tilde{\tilde{I}}_8(1+i_1)^{-7} + \tilde{\tilde{I}}_9(1+i_1)^{-8} + \tilde{\tilde{I}}_{10}(1+i_1)^{-9}$$

VALUTAZ. RETROSPETTIVA:

$$Z^{(13)}(i_1) = -\mathcal{C}(1+i_1)^{13} + R_1(1+i_1)^{10} + I_2(1+i_1)^9 + R\left[(1+i_1)^8 + (1+i_1)^7\right.$$
$$\left. + (1+i_1)^6 + (1+i_1)^5\right] + \tilde{I}_7(1+i_1)^4 + \tilde{\tilde{I}}_8(1+i_1)^3 + \tilde{\tilde{I}}_9(1+i_1)^2 +$$
$$+ \tilde{\tilde{R}}_{10}(1+i_1)$$