

Problem. A 20 year bond matures for its par value of 10,000. The coupon payable semi-annually is 400. Calculate the price of the bond at a 6% yield rate convertible semi-annually.

Solution. Diketahui:

- $F = 10,000$
- Kupon Semi-annual (semesteran) sebesar 400 $\implies F \times r = 400$
- yield rate convertible semi annually $\implies i^{(2)} = 6\% \implies$ yield rate efektif semesteran (dinotasikan i di jawaban ini): $i = \frac{i^{(2)}}{2} = 3\% = 0.03$
- 20 tahun dengan kupon semesteran $\implies n = 20 \times 2 = 40$
- $C = F = 10,000$ (tidak diberitahu, berarti asumsikan sama dengan Face Value)

Ditanya: Harga dari obligasi

Jawab:

$$\begin{aligned} P &= F \times r \times a_{\overline{n}|i} + C \times v_i^n \\ &= (F \times r) \times a_{\overline{40}|3\%} + C \times v_{3\%}^{40} \\ &= 400 \times \frac{1 - v^{40}}{i} + 10,000 \times v_{3\%}^{40} \\ &= 400 \times \frac{1 - (1.03)^{-40}}{0.03} + 10,000 \times (1.03)^{-40} \\ &= 12,311.4772 \approx 12,311.48 \end{aligned}$$