

Part III: The Nominal Interest Rates versus Effective Interest Rates (Section 2.4)

The Nominal Interest Rate is the named rate from a bank. The Effective Interest Rate is the actual interest rate that takes into account the number of compounds per year and is a bit higher than the Nominal Interest Rate due to the compounds per year. The Effective Interest Rate is always a bit higher than the Nominal Interest Rate.

Example: Find the effective interest rate given a nominal interest rate of 4%, compounded monthly.

$$\begin{aligned} \text{EFFECTIVE INTEREST RATE} &= \left(1 + \frac{r}{n}\right)^{nt} - 1 \quad [t=1] \\ &= \left(1 + \frac{0.04}{12}\right)^{12 \cdot 1} - 1 \\ &= (1 + 0.00333)^{12} - 1 \\ &= (1.00333)^{12} - 1 \\ &= 1.0407 - 1 = 0.0407 = 4.07\% \end{aligned}$$