

Example 10.1

What are the annual financing costs of an investment of US \$ 2,000,000 for a project with an expected economic lifetime of 25 years and an interest rate of 12 percent per year?

Solution:

$$a_{i,n} = [(1 + i)^n - 1]/[i \cdot (1 + i)^n] = [(1 + 0.12)^{25} - 1]/[0.12 \cdot (1 + 0.12)^{25}] = 7.84$$

Therefore the annual financing cost R is given by

$$R = I/a_{i,n} = 2,000,000/7.84 = \text{US\$ } 256,000$$

During the 25 years of expected useful lifetime the total expenses will be US \$256,000 · 25 = US\$ 6,400,000 or 3.2 times the initial investment amount.