

Find the effective rate percent annum equivalent to a nominal rate of 10% per annum interest payable half yearly?

Solution:

From the definition of effective annual rate, EAR is the interest rate on a loan or financial product restated from the nominal interest rate as an interest rate with annual compound interest payable in arrears. It is used to compare the annual interest between loans with different compounding terms (daily, monthly, quarterly, semi-annually, annually, or other). It is also called effective annual interest rate, annual equivalent rate (EAR) or simply effective rate. The annual rate of interest of an investment when compounding occurs more often than once a year.

Effective Interest Rate is the nominal interest rate expressed in annual terms. Effective Interest Rate takes into account the differences in various payment streams by taking into account the interest rate and compounding terms.

The effective interest rate is calculated as if compounded annually. The following is the calculation formula for the effective interest rate:

$$r = [1 + (i/n)]^n - 1$$

Where:

r = effective interest rate

i = nominal annual interest rate ($i = 10\%$)

n = number of compounding periods per year (in our case half-yearly).

We can find effective interest rate, submit to formula:

$$r = [1 + (0.1/2)]^2 - 1 = 10.250\%$$

$$r = 10.250\%$$

Answer: Effective rate percent annum equivalent to a nominal rate of 10% per annum interest payable half yearly is equal $r = 10.250\%$.