

Investment Portfolios

An investment portfolio is a collection of investments held by an individual or organization. Investment portfolios can be analyzed by determining the rate of return for the entire group of investments.

Rate of Return

The rate of return of an investment or an investment portfolio is used to analyze investments and investment portfolios and to compare them.

Put on study sheet *

$$\text{Rate of return} = \frac{\text{amount of interest earned}}{\text{amount of original investment}} \times 100$$

(ROR) ↓

Example 1

Ahmed has started to build an investment portfolio for his retirement.

- He purchased a \$300 Canada Savings Bond (CSB) at the beginning of each year for 5 years. Each of these CSBs earned a fixed rate of 5.6% interest compounded annually. $PV = -300$, $PY = 1$, $N = 5$
 - Five years ago, he also purchased a \$2 000 GIC earning 7% interest, compounded monthly. $PV = 2000$, $F = 7$, $CY = 12$
- Determine the value of each investment at the end of the 5 years.
 - Determine the total value of his portfolio at the end of the 5 years.
 - Determine the rate of return for this portfolio at the end of the 5 years.

Solution

CSB

N= 5
I% = 5.6
PV = 0
PMT = -300
*FV = 1677.67
P/Y = 1
C/Y = 1
PMT: <input type="checkbox"/> END <input checked="" type="checkbox"/> BEGIN

CSB

(CSB)

a) = 1677.67

Interest Earned

Future Value - Investment

$$= 1677 - (300 \times 5)$$

$$= 1677 - 1500 \rightarrow \underline{\underline{\$177.67}}$$

(GIC)

a) 2835.25

Interest Earned

Future Value - INVESTMENT

$$= 2835.25 - 2000$$

$$= \underline{\underline{\$835.25}}$$

GIC

N= 5
I% = 7
PV = 2000
PMT = 0
*FV = 2835.25
P/Y = 1
C/Y = 12
PMT: <input type="checkbox"/> END <input checked="" type="checkbox"/> BEGIN

b) TOTAL VALUE OF PORTFOLIO after 5 years

(CSB + GIC)

$$= 1677.67 + 2835.25$$

$$= \underline{\underline{\$4512.92}}$$

c) ROR = $\frac{\text{TOTAL INTEREST EARNED}}{\text{Amount of original investment}} \times 100$

$$= \frac{1012.92}{3500} \times 100$$

$$= \underline{\underline{28.94\%}}$$