

How to understand your personal rate of return

August 2011

The Personal Rate of Return (PROR) is designed to enable you to measure the performance of the overall investment in your account over a selected period of time. The method used to calculate your PROR is described below.

Methodology:

The returns are calculated daily, using a time-weighted formula. This method is considered as the industry standard by the Investment Funds Institute of Canada (IFIC).

The formula for the Time-Weighted Rate of Return with a daily valuation is as follows:

$$R = \frac{MVE}{MVB} - 1$$

Where:

MVE is the market value of the account at the end of the current period, including any income distributions, but excluding any cash flows occurring in the period.

MVB is the market value of the account at the end of the previous period (or at the beginning of the current period), including any cash flows at the end of the previous period and any accrued income to the end of the previous period.

The linking formula is as follows:

$$\text{Personal Rate of Return (PROR)} = [(1+R_1) \times (1+R_2) \times \dots (1+R_n)-1] \times 100$$

Where:

R_1 = First period calculation

R_2 = Second period calculation

R_n = Last period calculation

In order to convert the PROR to periods greater than 12 months, the Annual Compounded Rate of Return (ACRR) is calculated as follows:

$$ACRR = (R_{Total}^{365/n} - 1) \times 100$$

Where:

$$R_{Total} = (1+R_1) \times (1+R_2) \times \dots (1+R_n)$$

n = Total days in period (total number of years times 365 days)

How to understand your personal rate of return (continued)

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The following is a sample calculation based upon activity over a 3-month period from July 1 to September 30:

Sample Calculation

Step 1: Tally the transactions during the 3-month period

Investment X

Date	Purchase	Redemptions	\$/unit	Ending Balance
July 1 st	2,000 units		\$12.00	2000 x 12 = \$24,000.00
August 18 th	500 units		\$13.00	2500 x 13 = \$32,500.00
September 20 th			\$14.00	2500 x 14 = \$35,000.00
September 30 th			\$15.00	2500 x 15 = \$37,500.00

Investment Y

Date	Purchase	Redemptions	\$/unit	Ending Balance	Total Balance
July 1 st	1,000 units		\$8.00	1000 x 8 = \$8,000.00	\$32,000.00
August 18 th			\$9.00	1000 x 9 = \$9,000.00	\$41,500.00
September 20 th		500 units	\$8.00	500 x 8 = \$4,000.00	\$39,000.00
September 30 th			\$7.00	500 x 7 = \$3,500.00	\$41,000.00

Step 2: Calculate return for each cash flow period.

$$R = \frac{MVE - (\text{purchases} - \text{redemptions})}{MVB} - 1$$

$$R_{\text{Aug. 18}} = \frac{\$41,500 - (500 \times \$13)}{\$32,000.00} - 1 = 0.09375$$

$$R_{\text{Sept. 20}} = \frac{\$39,000 + (500 \times \$8)}{\$41,500.00} - 1 = 0.03614$$

$$R_{\text{Sept. 30}} = \frac{\$41,000}{\$39,000.00} - 1 = 0.05128$$

Step 3: Calculate 3-month Personal Rate of Return as of September 30th

$$PROR = [(1 + R_{\text{Aug. 18}}) \times (1 + R_{\text{Sept. 20}}) \times (1 + R_{\text{Sept. 30}}) - 1] \times 100$$

$$PROR = [(1 + 0.09375) \times (1 + 0.03614) \times (1 + 0.05128) - 1] \times 100 = 19.1\%$$

Hence, the PROR of this account is 19.1% for the 3-month period ending September 30th.