

# UNDERSTANDING YOUR PERFORMANCE

## PERSONAL RATE OF RETURN

### CALCULATING REPORTED RATES OF RETURN

#### Scenario 1:

##### RETURNS IN A RISING MARKET

Say you start with a balance of \$20,000 on July 1. By September 30, the balance rises to \$22,000 — a \$2,000 gain for the quarter. To find the reported rate of return, divide the *gain* (ending balance minus beginning balance) by the beginning balance:

$$\frac{\text{EndingBal.} - \text{BeginningBal.}}{\text{Beginning Balance}} = \frac{\$22,000 - \$20,000}{\$20,000} = 0.10$$

To show this result as a percentage, multiply it by 100. In this case, your account **gained 10%** for the quarter.

#### Scenario 2:

##### RETURNS IN A FALLING MARKET

Let's look at the same example for a poor-performing period. If you have a beginning balance of \$20,000 on April 1, but an ending balance of \$18,000 on June 30, you would have lost \$2,000 throughout the quarter. This time, to determine the rate of return, divide the *loss* (ending balance minus beginning balance) by the beginning balance:

$$\frac{\text{EndingBal.} - \text{BeginningBal.}}{\text{Beginning Balance}} = \frac{\$18,000 - \$20,000}{\$20,000} = -0.10$$

Expressed as a percentage, your account **lost 10%** for the quarter.

The calculations are for illustration only and do not reflect the performance of any particular investment or account.

### UNDERSTANDING YOUR PERSONAL RATE OF RETURN

Your personal rate of return (PRR) is a comprehensive measure of your overall account performance over a specific time period. It allows you to answer the question: "How is my account *really* doing?" While your reported rate of return simply tells you how much your investments gained or lost, your PRR accounts for all investment-related moves made over a specified period of time — including contributions, exchanges, withdrawals, loans, and fees — to determine how these affected your portfolio's overall return. Knowing your PRR can keep you on course toward your investing goals — but calculating it can be complicated.

Before you get started, it helps to understand how to determine rates of return.

### CALCULATING PERSONAL RATES OF RETURN

The examples in Scenarios 1 and 2 can help you understand the calculations behind your investment returns. But for regular investors like retirement savers, they're not realistic. That's because, during any given period, you and/or your employer are likely to make contributions to your account that add to your various fund balances. And those transactions can dramatically affect your actual returns (the ones reflected in your PRR). So even though "contributions" may not seem to be part of the examples below, make sure to include contributions when you calculate the "average balance" portion of the PRR formulas.

#### TO CALCULATE YOUR PRR FOR ANY PERIOD, YOU'LL NEED TO KNOW:

- Your beginning balance for the period
- Your ending balance for the period
- How much money you invested and/or withdrew during the period
- When those "cash flows" occurred



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# PERSONAL RATE OF RETURN

While the previous examples involve simple scenarios, an accurate PRR takes into account several factors, including when contributions occurred on different dates, when you contributed different amounts throughout the period, and when you made contributions and withdrawals in the same period.

## Scenario 3:

### PRR IN A RISING MARKET (WITH CONTRIBUTIONS)

Let's say you have the same beginning and ending balances as in Scenario 1: \$20,000 on July 1 and \$22,000 on September 30. This time, however, you made contributions of \$200 on the last day of each month. Your gain for the quarter *appears* to be \$2,000 (\$22,000 minus \$20,000), but because you contributed \$600 to the account throughout the period, it was really only \$1,400.

To determine the rate of return, divide the gain, *excluding your contributions* (ending balance minus beginning balance minus contributions), by the average balance for the period. To find the average balance, you must account for how many days of the quarter period (90 days) each contribution was included in the balance. For example, the first \$200 contribution occurred on the 30th day of the 90-day period, so it was included in the total balance for 60 days, or 67% of the period (60 days divided by 90 days).

#### AVERAGE BALANCE

$$\$20,000 + (\$200 \times (60/90)) + (\$200 \times (30/90)) + (\$200 \times (1/90)) = \$20,202$$

#### PERSONALIZED RATE OF RETURN

Ending Bal. - Beginning Bal. - Contributions

Average Balance

$$\frac{\$22,000 - \$20,000 - (\$200 \times 3)}{\$20,202} = 0.0693$$

To show this value as a percentage, multiply it by 100 (and round to the nearest tenth). Result: Your PRR for the quarter — including the contributions you made — is actually **6.9%**.

## Scenario 4:

### PRR IN A FALLING MARKET (WITH CONTRIBUTIONS)

Here's an example in which the ending balance is higher than the beginning balance, but your account sees a *negative* return: Start with a balance of \$20,000 on April 1, make a \$200 contribution on the last day of each month, and end with a balance of \$20,500 on June 30. At first glance, the gain for the quarter seems to be \$500 (\$20,500 minus \$20,000). But after accounting for the \$600 you contributed during the period, your PRR will reflect an overall loss:

#### AVERAGE BALANCE

$$\begin{aligned} &\$20,000 + (\$200 \times (60/90)) \\ &+ (\$200 \times (30/90)) + (\$200 \times (1/90)) \\ &= \$20,202 \end{aligned}$$

#### PERSONALIZED RATE OF RETURN

EndingBal.-BeginningBal.-Contributions

Average Balance

$$\frac{\$20,500 - \$20,000 - (\$200 \times 3)}{\$20,202} = 0.00495$$

Multiply this final value by 100 (round to the nearest tenth of a percent), and see that your PRR for the quarter was really **-0.5%**.

## Scenario 5:

### PRR IN A RISING MARKET (WITH A WITHDRAWAL)

Say you had a balance of \$20,000 on July 1, withdrew \$2,000 on July 30, and ended with a balance of \$20,500 on September 30. As in Scenario 4, the gain for the quarter seems to be \$500, but is it? To find your PRR, divide the gain, including your withdrawal (ending balance minus beginning balance plus withdrawal), by the average balance for the period:

#### AVERAGE BALANCE

$$\begin{aligned} &\$20,000 - (\$2,000 \times (60/90)) \\ &= \$18,667 \end{aligned}$$

#### PERSONALIZED RATE OF RETURN

EndingBal.-BeginningBal.-Contributions

Average Balance

$$\frac{\$20,500 - \$20,000 + \$2,000}{\$18,667} = 0.1339$$

Expressed as a percentage (multiply by 100, round to the nearest tenth), your PRR for the quarter is **13.4%**.

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