Guide to Calculating Your Personal Rate of Return
How is my rate of return calculated?

PCS uses the generally accepted Modified Dietz Method to calculate your rate of return. This method incorporates your return on investments as well as the timing of when money flows into and out of your account. By giving weight to the contributions, transfers and other activity in your account, we yield a more realistic return than a simple total, which only compares the beginning balance to the ending balance. Please bear in mind that this is one way of determining this rate, and other methods can produce varying results.

How does the Modified Dietz Method Work?

As with a normal simple return, we will compare the beginning and ending balance of your account during the period reviewed. In a Modified Dietz Method, we also factor in the cash flows (contributions in and withdrawals out) during the period. Withdrawals can consist of any fees, transfers out, exchanges, or distributions from your account. The time-weighted factor will come into the calculation on the bottom of our formula as shown below.

$$\text{Rate of Return} = \frac{\text{Ending Market Value} - \text{Beginning Market Value} - (\text{Contributions} - \text{Withdrawals})}{\text{Beginning Market Value} + \text{Time Weighted Cash Flows}} \times 100$$

Below is a quick example of how the calculation works. We will assume the following items for purposes of this example:

- Beginning Balance as of January 1st was $5,000
- Ending Balance as of March 31st was $6,000
- A contribution of $500 traded on February 14th
- A distribution of $200 was processed on February 14th
- February 14th is halfway through the 1st quarter, so we will use a time factor of 50%

$$\frac{\$6,000 - \$5,000 - (\$500 - \$200)}{\$5,000 + (\$500 \times .50 - \$200 \times .50)} \times 100$$

$$\frac{\$1,000 - \$300}{\$5,000 + \$150} \times 100$$

$$\frac{\$700}{\$5,000 + \$150} \times 100$$

$$0.1359 \times 100$$

Rate of Return = 13.59%
How does the Modified Dietz Method Work? (Continued)

In the example found at the bottom of the previous page, the weight of these cash flows occurring during the middle of the period affects the calculation. If both the contributions and withdrawals occurred later in the quarter (March 1st), we would use a factor of 66.67%. This would increase your rate of return to 31.09% since the effect of the contributions were less reflective of the increase in your account due to market fluctuation. The opposite would occur (rate of return would be less than 13%), if the cash flows occurred earlier in the period.

As the recordkeeper of these transactions, PCS calculates the individual weights for each transaction while determining your personal rate of return. Below is a more realistic example of a multiple transaction scenario. Let us start off with some transactions to use in this example:

- Beginning Balance $5,000
- Ending Balance $5,500

<table>
<thead>
<tr>
<th>Date</th>
<th>Days within Period</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>April 5th</td>
<td>4</td>
<td>+ $20</td>
</tr>
<tr>
<td>April 20th</td>
<td>19</td>
<td>- $50</td>
</tr>
<tr>
<td>May 15th</td>
<td>44</td>
<td>+ $30</td>
</tr>
<tr>
<td>June 1st</td>
<td>61</td>
<td>+ $40</td>
</tr>
<tr>
<td>(Total Cash Flow)</td>
<td></td>
<td>+ $40</td>
</tr>
</tbody>
</table>

The next step is to weight each transaction by the timeframe in which each transaction occurred. To determine the factor, we must calculate the percentage of days within the quarter.

Time Factor = \( \frac{90 \text{ days} - X \text{ Days within period}}{90 \text{ days}} \)

With this formula, we can calculate the April 5th transaction weight.

Time Factor = \( \frac{90 \text{ days} - 4 \text{ days}}{90 \text{ days}} \)

Time Factor = .95

<table>
<thead>
<tr>
<th>Date</th>
<th>Days within Period</th>
<th>Time Factor</th>
<th>Amount</th>
<th>Weighted Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>April 5th</td>
<td>4</td>
<td>.95</td>
<td>+ $20</td>
<td>+ $19</td>
</tr>
<tr>
<td>April 20th</td>
<td>19</td>
<td>.78</td>
<td>- $50</td>
<td>- $39</td>
</tr>
<tr>
<td>May 15th</td>
<td>44</td>
<td>.51</td>
<td>+ $30</td>
<td>+ $15.3</td>
</tr>
<tr>
<td>June 1st</td>
<td>61</td>
<td>.32</td>
<td>+ $40</td>
<td>+ $12.8</td>
</tr>
<tr>
<td>(Total Cash Flow)</td>
<td></td>
<td></td>
<td>$40</td>
<td>$8.1</td>
</tr>
</tbody>
</table>
How does the Modified Dietz Method Work? (Continued)

Now that we have the weighted contributions and withdrawals, we can proceed with the rate of return calculation:

\[
\text{Rate of Return} = \frac{\$5,500 - \$5,000 - (\$90 - \$50)}{\$5,000 + \$8.1} \times 100
\]

\[
= \frac{\$460}{\$5,008.1} \times 100
\]

Rate of Return = 9.19%