Information Ratio

A benchmark-relative, return-versus-risk metric, the information ratio measures the excess return against the benchmark divided by tracking error, where tracking error is a measure of consistency.

How Is it Useful?
The information ratio answers the two most important questions for an active manager. First, did the manager outperform the passive benchmark? Second, was the manager able to outperform the benchmark consistently? If the answer to either of these is “no,” then a low-cost passive product like an index fund or an ETF might make sense. Therefore, the information ratio stands as a great way to justify an active manager’s existence.

What Is a Good Number?
The higher the information ratio, the better. If the information ratio is less than zero, it means the active manager failed on the first objective of outperforming the benchmark. Of all the performance statistics, the information ratio is one of the most difficult hurdles to clear. Generally speaking, an information ratio in the 0.40-0.60 range is considered quite good. Typical values for information ratios vary by asset class. Details are provided on the reverse side.

What Are the Limitations?
The information ratio is a benchmark-relative statistic. It is entirely possible for a manager to have a high information ratio, but still exhibit significant losses if the benchmark is down.

What Do the Graphs Show Me?
The top graph displays the numerator, the excess return over the benchmark. The thick black line is the benchmark, and the red and blue lines show the rolling excess returns for two different managers. The bottom graph shows the denominator, which is the tracking error versus the benchmark. The smaller the tracking error, the more consistent the excess returns.

With the red manager, we see that the excess return is higher overall than the blue manager. However, we see the red manager’s excess return pattern is much more erratic, resulting in a higher tracking error. In contrast, the blue manager’s excess returns are lower, but much more consistent. Therefore, the blue manager has a higher information ratio than the red manager.
Information Ratio

What Are Typical Values?
To the right are ranges of 10-year information ratios across six asset classes. Peer groups of separately managed account composites are compared to their relevant benchmarks. The difficulty of achieving a high information ratio stands out. The median manager typically has an information ratio near or below zero. It is quite rare to see managers with information ratios in excess of 1.00 over long time periods.

<table>
<thead>
<tr>
<th>Information Ratio Funds in the Universe</th>
<th>Large Cap 230</th>
<th>Small Cap 94</th>
<th>International 325</th>
<th>Emerging 64</th>
<th>Gov/Corp 293</th>
<th>HY Bond 96</th>
</tr>
</thead>
<tbody>
<tr>
<td>5th Percentile</td>
<td>0.54</td>
<td>0.53</td>
<td>0.74</td>
<td>0.58</td>
<td>0.81</td>
<td>0.75</td>
</tr>
<tr>
<td>25th Percentile</td>
<td>0.21</td>
<td>0.21</td>
<td>0.24</td>
<td>0.28</td>
<td>0.39</td>
<td>0.38</td>
</tr>
<tr>
<td>Median</td>
<td>-0.07</td>
<td>-0.05</td>
<td>-0.13</td>
<td>-0.08</td>
<td>0.06</td>
<td>-0.16</td>
</tr>
<tr>
<td>75th Percentile</td>
<td>-0.33</td>
<td>-0.21</td>
<td>-0.39</td>
<td>-0.45</td>
<td>-0.36</td>
<td>-0.51</td>
</tr>
<tr>
<td>95th Percentile</td>
<td>-0.61</td>
<td>-0.59</td>
<td>-0.80</td>
<td>-0.87</td>
<td>-0.88</td>
<td>-0.94</td>
</tr>
</tbody>
</table>

Related Metrics
- **Excess Return**: the difference between a manager’s returns and the benchmark’s returns
- **Tracking Error**: the standard deviation of excess returns of a manager versus its benchmark
- **Alpha**: a measure of “manager skill,” adjusted for the level of market risk

Math Corner
The numerator of the information ratio is quite easy to calculate. It is simply the difference between the manager return and its benchmark return. The denominator is calculated by taking the standard deviation of the numerator. It is the volatility of that excess return series. The standard deviation of excess return is known as tracking error.

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\text{Info Ratio} = \frac{\text{AnnRtn}(\tau_1, \ldots, \tau_n) - \text{AnnRtn}(BM_1, \ldots, BM_n)}{\text{AnnStdDev}(\text{ex. rtn}_1, \ldots, \text{ex. rtn}_n)}
\]