Understanding tracking difference and tracking error

Tracking difference and tracking error are measures that can help you evaluate ETFs and index mutual funds as you assess the best products for your portfolios. But to use the measures effectively, you need to understand what each one represents and how much weight to give each in your evaluations.

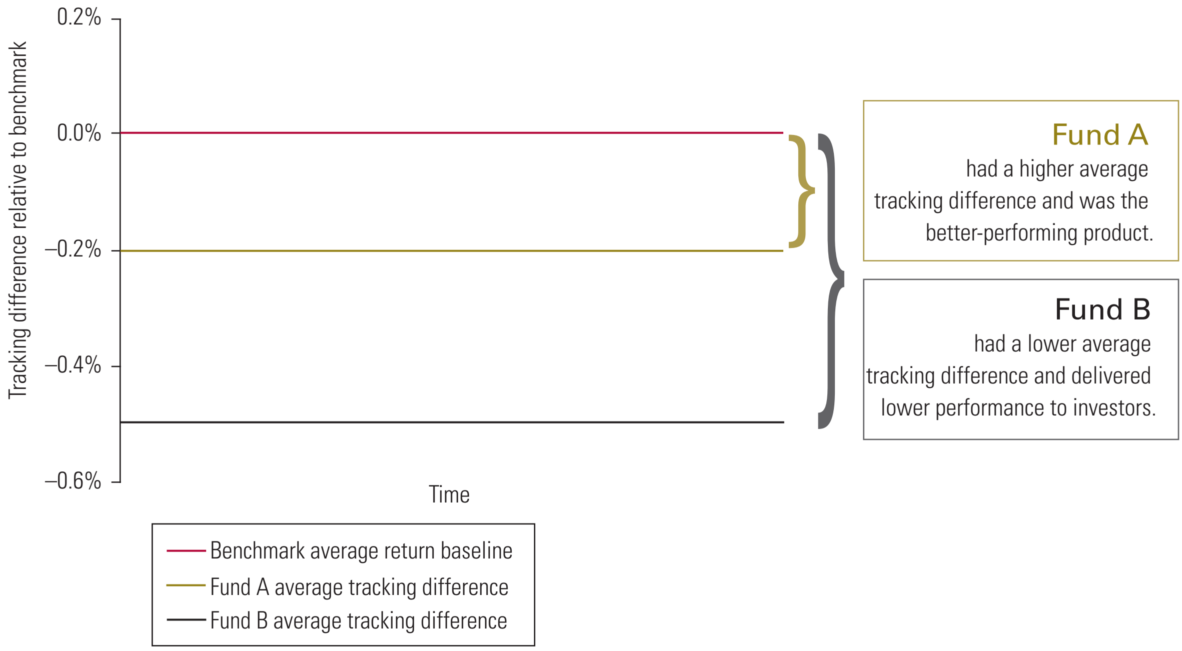
- Tracking difference shows how a product's performance compares with that of its benchmark over a stated period of time.
- Tracking error indicates the consistency of a product's tracking difference during that same time period. It is the annualized standard deviation of tracking difference data points for the given time period.
- If total return is your primary criterion, then tracking difference will likely be more important than tracking error in your evaluations. If performance consistency is an important consideration, then tracking error may be more relevant.
- Tracking difference and tracking error data, especially if they are drawn from short time periods, should be used for reference only. Comparisons among products and indexes can be difficult because of differences in indexing implementation methodologies and how data are calculated.

Tracking difference

Annualized fund returns often are among the first measures investors consider when evaluating investment products. But how well ETFs and index mutual funds perform versus both their benchmarks and their competing products is just as important.

Tracking difference, which can be positive or negative, tells you the extent to which a fund has out- or underperformed its benchmark index. It is calculated as the fund's net asset value (NAV) total return minus the benchmark's total return. Because a fund's NAV total return includes fund expenses, tracking difference typically is negative for index funds.

Tracking difference compares a fund's total return with the return of its benchmark



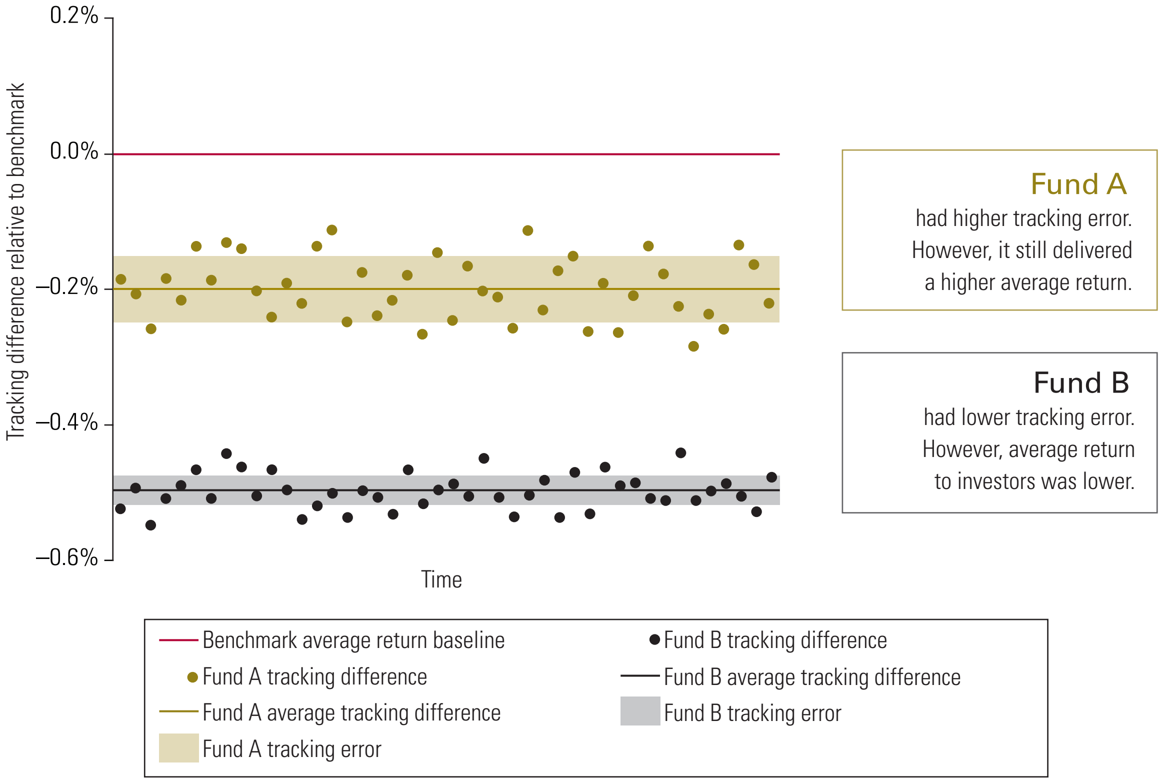
This hypothetical example does not represent any particular investment.

The simplified, hypothetical example above shows how the average performance and negative tracking differences of two index funds with the same benchmark compare with a baseline of their benchmark's average performance.

Tracking error

Tracking error is calculated as the annualized standard deviation of tracking difference data points. While tracking difference measures the extent to which an index product's return differs from that of its benchmark index, tracking error indicates how much variability exists among the individual data points that make up the fund's average tracking difference.

Tracking error indicates the variability of a fund's tracking difference



This hypothetical example does not represent any particular investment.

The graph above shows the individual data points that make up the averages in our hypothetical example. Tracking error helps gauge the distribution of the individual data points relative to the fund's average tracking difference.

Using tracking difference and tracking error in your evaluations

When selecting the best indexing products for your portfolios, it's important to keep tracking difference and tracking error in context.

If total return is your primary criterion, then tracking difference will likely be more important than tracking error in your evaluations.

If performance consistency is an important consideration, then tracking error may be more relevant.

In the hypothetical example above, investors seeking higher long-term returns may find Fund A the better choice. However, short-term traders seeking better performance consistency may be attracted to Fund B, despite its lower average tracking difference. Other examples may not show such a clear-cut trade-off between tracking difference and tracking error. A superior product would have both a higher tracking difference and lower tracking error.

Important calculation nuances can distort comparisons

Differences in indexing implementation methodologies and the methods used by product and index providers to calculate performance can make comparisons difficult.

For example, tracking difference and tracking error are derived from periodic performance calculations. These calculations are greatly influenced by the pricing mechanisms used to determine the beginning and ending values for the time periods in question.

Common variations for determining benchmark and product pricing, which in turn affect tracking difference and tracking error calculations, include:

- Using NAV pricing versus market pricing.
- Calculating international securities pricing based on constituent values when foreign markets close.
- Factoring in foreign exchange rates at various times.
- Determining closing prices using the last recorded trade versus a level between market bid and ask points.

Regardless of how returns are calculated, performance information should be used for reference only, especially if it is drawn from a short time period. The pricing methodologies used for products and benchmarks do not reflect the actual experience of an investor.

Finally, it's important to note that tracking difference and tracking error are only two of many measures that investors may want to consider when selecting the best ETFs and index mutual funds for their needs.

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