Deciphering the Biases in Hedge Fund Indices

All indices contain biases resulting from weighting and construction methodologies, but unique aspects of the hedge fund industry create an additional set of biases and complexities for investors in hedge fund indices to evaluate. Knowledge of index construction methodology is critical for determining hedge fund index performance biases and return expectations.

The hedge fund industry has grown dramatically over the past two decades, reaching a high of $2.25 trillion in capital as of year-end 2012. Demand for alternative assets, once dominated by wealthy private investors, has been fueled by endowments, foundations, and pension funds seeking greater diversification and higher returns. “The defined benefit world is continually under stress in maintaining sufficient funding status to meet their beneficiary obligations—in a market that has presented persistent modest fixed-income yields and volatile public equities,” says Alan Kosan, senior vice president, Alpha Investment Research, Segal Rogerscasey. “For our clients who come from a traditional investment framework of long-only liquid stocks or bonds and who are entering alternative investment protocol for the first time, the first question is, ‘How do I benchmark the returns?’”

Relative performance is somewhat at odds with the concept of hedge funds, which traditionally have been viewed as absolute-return vehicles. Hedge fund indices have come a long way since the earliest attempts to benchmark them. “There was a day when the hedge funds were benchmarked at 500 bps above Treasuries,” Kosan notes. Today, index providers offer hundreds of variations of hedge fund indices. Like hedge funds themselves, hedge fund indices are complex and varied. This article sheds some light on how to identify the performance biases resulting from hedge fund index construction and how investors can determine which indices provide the best fit for their purposes.

IDENTIFYING THE BIASES

One problem with hedge fund indices is that hedge funds are not an asset class; they are strategies. A hedge fund is a private investment vehicle that is unconstrained in its choice of assets and its investment strategy. Hedge funds are generally treated as a distinct asset class because they are expected to have low correlations with traditional asset classes. Their returns are largely the result of manager skill, not beta. “It’s important to realize that hedge fund indices are not at all the same as equity or fixed-income benchmarks. They are not asset benchmarks; they’re peer groups,” says L. Joshua Wein, director of alternative investments at Sterling Capital Management LLC. “For peer-group benchmarking to be informative, you have to know who the peer group is, and knowing that is hard with hedge funds.”

The unique structure of the hedge fund industry gives rise to several performance measurement biases that permeate the databases used to construct hedge fund indices. These biases are well-known. Selection bias, survivorship bias, and backfill bias are the primary ones. Others include valuation and liquidation biases. The degree to which the biases affect returns varies significantly among database vendors according to the composition of the underlying hedge fund populations and to vendor selection and deletion criteria.
Selection bias refers to the practice of hedge funds voluntarily reporting to a database. As private investment vehicles, hedge funds have complete discretion over whether they choose to report information to a database, what time period they choose to report, and to which database they will report. Typically, new funds will only report when they have a successful performance record, biasing database performance upward. Funds with poor performance are unlikely to begin reporting to any database. Successful hedge funds closed to new capital may also choose not to report, which biases performance downward. Some database vendors have agreements in place with a number of funds to continue reporting returns whether they are open or closed. Research has shown that most funds that report to databases report only to one database. Because the complete universe of hedge funds is not known with certainty, the performance impact generated by selection bias is also not known.

Survivorship bias results when funds exit a database, either by choice (defunct funds) or because they have ceased operations (dead funds). Defunct funds may stop participating in a database because of poor returns or because they have raised enough capital. The resulting survivorship bias can create large performance distortions, with the exit of poorly performing funds skewing performance to the upside and the exit of highly successful funds causing a performance drag on the downside. The literature is in agreement that survivorship bias increases returns. This upward bias has been estimated most recently by Ibbotson, Chen, and Zhu (2011) at 5.1% and in past literature at approximately 3 percentage points.²

Adding funds to a database leads to the third major database bias—backfill, or “instant history” bias. Often, a fund begins reporting to the database because it has good performance and may want to attract new capital. Backfill bias occurs when a new fund is added to the database along with its historical performance. Ibbotson, Chen, and Zhu (2011) estimated that instant history for live funds adds an upward performance bias as high as 2.1%.³ Backfill bias also results in a variable performance history for a database. Finally, valuation bias results from pricing lags for illiquid assets, and liquidation bias occurs when a fund in the process of liquidating stops reporting to a database. Long-Term Capital Management, for instance, neglected to report its catastrophic losses between October 1997 and October 1998.

**METHODOLOGY IS CRITICAL**

Because hedge fund databases are the foundations for hedge fund indices, indices can inherit database biases. The differences in database biases lead to dramatic differences in returns among hedge fund indices. Index biases, however, can be much lower than database biases, depending on construction methodology, which varies considerably across providers. Constituent selection criteria may include minimum track record, minimum assets under management, liquidity requirements, and whether or not a fund has audited financial statements or undergone due diligence. Frequency of rebalancing, number of funds included, and how funds are classified also vary among indices. In addition, methodologies differ not only among index providers but also among a provider’s categories of indices.

The two main categories of hedge fund indices are (1) noninvestable versus investable and (2) global versus strategy. Indices are also offered for geographic region, fund size, and other subsets of the hedge fund universe. A noninvestable index contains funds that are open to new investment as well as funds that are closed. The inclusion of both open and closed funds is designed to give a more comprehensive representation of the hedge fund universe. An investable index, in contrast, is composed solely of open funds, but this does not mean an investor can actually buy and hold the index. Passive replication of an investable index is prohibited by minimum investment requirements and limited fund capacity. These indices are instead investable through hedge fund index products that track the index (trackers) or replicate the risk factors of the index (replicators). Investable indices are generally considered to be free of many of the biases that plague databases. Kenneth J. Heinz, CFA, president of Hedge Fund Research Inc., says of its HFRX investable index series, “We take a lot of steps to mitigate any type of bias.” Backfill bias is not present because funds enter the index without their performance track record. Similarly, performance for defunct or dead funds is retained in the index, as is the performance of funds in the process of liquidating. Funds must also have a minimum track record and be able to meet other criteria, such as due diligence requirements, to be in the index. In a 2007 [2008 OK to match References] study on hedge fund indices, Amenc and Goltz noted that, “Many problems in the literature (notably the data biases) apply mainly to noninvestable indices and are less severe for investable
indices” (p. 4). Investable indices may not have typical database biases, but they may have biases resulting from the stringent selection criteria affecting the choice of index constituents.

Global indices are designed to represent the hedge fund universe, whereas strategy indices focus on a particular type of hedge fund strategy, such as event driven, global macro, or long–short equity. Strategies are used to diversify among hedge fund investments in the same way equities are diversified among style, capitalization size, and sectors. Hedge fund strategies are not standardized, so it is not uncommon for certain investment strategies to be categorized differently across index providers. Methods of classifying strategies range from returns-based clustering techniques to the manager's reported classification. Hedge funds may also change strategies, leading to index style drift unless an index provider periodically reviews and reclassifies manager strategies.

Like traditional asset indices, hedge fund indices are also differentiated by their weighting schemes and can be constructed according to both asset-weighted and equal-weighted schemes. The weighting scheme biases are well-known to index users: Value-weighted schemes are presumed to have a momentum bias, tending to overweight the best-performing constituents, whereas equal-weighted schemes tend toward a contrarian bias as outperforming constituents are pared back in favor of underperforming constituents. In the case of hedge funds, asset weighting places a heavier weight on the most popular strategies; equal weighting better represents less-popular strategies as well as smaller funds. Fung and Hsieh (2004) found that the top 25% of funds managed more than 75% of the industry’s assets and are thus overrepresented in asset-weighted indices. They also noted that if a large, successful fund stops reporting, index returns will be adversely affected. Leverage, they say, may also distort performance. “Using an assets-under-management weighting scheme will thus bias the index return toward unlevered money managers and, at the extreme, will overemphasize the performance of asset gatherers” (p. 67). Equal weighting, in contrast, was shown to have a bias in performance toward newer funds, inflating the instant history bias if the index is backfilled. Index providers who offer an equal-weighted scheme believe it provides a more informative overview of the average performance of hedge funds. The following table illustrates the variances in performance among several global hedge fund indices.

### INDEX SOLUTIONS

Understanding an index’s methodology is essential to understanding its risk exposures and sources of returns, particularly with regard to strategy indices. “A difficulty with using hedge fund indices and expecting to beat the benchmark is that every strategy has a large degree of dispersion within it,” says Wein. “One of the reasons for the dispersion is varying degrees of net dollar exposure or leverage—another is the degree of sub-strategies within a strategy. The event-driven category, for example, includes a number of sub-strategies, such as distressed security investing, activist investing, and merger arbitrage.” An example provided in a 2011 white paper by Mesirow Financial illustrates just how diverse strategy indices can be. Dispersion in calendar year returns from 2006 to 2011 for four event-driven indices from three index providers ranged from a low of 5.41% in 2006 to a high of 25.48% in 2009.

Global indices that contain both open and closed funds are often used to provide overall trend data and a comprehensive overview of the hedge fund universe to inform decisions such as asset allocation. Global indices can contain up to several thousand funds. The performance of global indices is heavily influenced by the weights of the various strategies represented in each.

#### COMPARISON OF COMPOSITE GLOBAL HEDGE FUND INDICES

<table>
<thead>
<tr>
<th>Index</th>
<th>Return</th>
<th>Weighting Scheme</th>
<th>Investable?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mizuho–Eurekahedge Index</td>
<td>5.9% -2.1% 9.9%</td>
<td>Asset Weighted</td>
<td>No</td>
</tr>
<tr>
<td>Eurekahedge Hedge Fund Index</td>
<td>6.3 -3.0 11.2</td>
<td>Equal Weighted</td>
<td>No</td>
</tr>
<tr>
<td>HFRX Global Hedge Fund Index</td>
<td>3.5 -8.9 5.2</td>
<td>Asset Weighted</td>
<td>Yes</td>
</tr>
<tr>
<td>HFRX Equal Weighted Strategies Index</td>
<td>2.5 -6.2 5.3</td>
<td>Equal Weighted</td>
<td>Yes</td>
</tr>
<tr>
<td>Hennessee Hedge Fund Index</td>
<td>7.0 -4.6 9.9</td>
<td>Equal Weighted</td>
<td>No</td>
</tr>
<tr>
<td>Hedge Fund Intelligence Composite Index</td>
<td>6.0 -2.0 7.7</td>
<td>Equal Weighted</td>
<td>No</td>
</tr>
</tbody>
</table>

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index, which differ markedly among index providers and over time. Once dominated by the global macro style, databases and global indices have seen a rise in popularity of equity-based styles in recent years.

Investable indices provide less breadth but more closely match current investment opportunities. Still, they are not free from drawbacks. Kosan says, “The difficulty with investable indices is that the hedge funds have to agree to certain terms that the index provider deems important, particularly pertaining to liquidity. Hedge funds themselves have different liquidity structures and lockups. These indices may underrepresent some of the more desirable hedge funds because those funds may find the terms incompatible with their strategy. For example, the redemption period may be inadequate because a certain number of their assets are invested in less liquid assets.”

Amenc and Goltz (2008) suggest investors already have experience to draw upon when evaluating hedge fund index choices, because many of the issues present in hedge fund indices are also present in equity indices. Performance can differ significantly among equity style indices, as it does among hedge fund strategy indices. Style drift is a problem, as is strategy drift. A comparison among major stock market indices of value, growth, and small-cap stock allocations showed stock market indices to be “no less heterogeneous” (p. 8) than major hedge fund indices.

A case can also be made for using fund-of-funds (FOF) indices to benchmark hedge fund portfolios. “Using FOF indices or fund of funds as a benchmark eliminates a lot of biases,” says Wein. As with investable indices, survivorship and backfill bias are mitigated because FOFs retain the performance information for underlying hedge funds that liquidate and do not backfill performance for funds added to the FOF. An advantage of FOF over investable indices is that they include the performance of underlying managers who have chosen not to report to a database, reducing database selection bias. “An investor has the opportunity to see actual return experiences as opposed to a broad hedge fund index with many managers. For an investor who can’t participate in the funds of the broader index, the performance has less meaning. Fund of funds, however, are investable. There is a minimal investment amount, and the due diligence is done for you to some degree.” FOFs also have an extra layer of fees embedded to compensate the FOF manager for due diligence in sourcing and screening the funds. This due diligence may impart a sort of selection bias in that poorly performing funds are not likely to be chosen for inclusion. Overall, Wein finds, “FOF indices are more representative of the true experience available to most hedge fund investors.”

CONCLUSION

Hedge fund indices are likely to continue to evolve as performance benchmark solutions. Heinz believes there is an industry trend toward greater awareness of performance and pressure for more frequent performance reporting and transparency. “Fund managers have come to understand that they need to be open to the concept of transparency not only because it can lead to more opportunities to grow but also, invariably, because investors have requirements that stem from certain funds that lacked transparency in the 2008 financial crisis. Investors are going to be more comfortable with a fund that is providing more information than one that is not,” he notes. Heinz believes the industry will become more mainstream, due in part to the American Jobs Act and the Dodd–Frank Act requiring reporting to regulatory agencies and relaxing marketing restrictions on open solicitations. Heinz is also seeing more funds—and more larger, well-established funds—providing performance to the database. “Fund managers are seeking to grow and to raise capital from investors, and they want to be visible in the database.” Because of the difficulty of raising capital after the financial crisis, a number of closed funds are also choosing to maintain a visible profile.

Using hedge fund indices for benchmarking or information purposes requires a thorough knowledge of index methodologies to understand the biases present in an index. Index transparency is key. As with all indices, investors must select one that most closely reflects their desired risk exposures and return expectations. But with hedge fund indices, investors must be prepared to do a little more due diligence.

NOTES

2. See Brown, Goetzmann, and Ibbotson (1999) and Fung and Hsieh (2000). Ibbotson, Chen, and Zhu (2011) estimated survivorship bias to be 3.1% when backfill data are included and 5.1% when backfill data are excluded. They believe excluding backfill data leads to a more accurate estimate of survivorship bias.
3. Based on an equal-weighted portfolio containing live-only funds.
4. Another weighting scheme is a proprietary representation optimization method calculated by Hedge Fund Research for its strategy indices.
5. Hedge Fund Research offers noninvestable indices as well.
7. See, for example, Fung and Hsieh (2000) and Mesirow Financial White Paper (2011).

REFERENCES

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