ADVISOR PERSPECTIVES

Measuring Funds by a Jury of their Peers

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Peer group comparison is a widely accepted method for measuring fund performance. But picking a fund's peer group can often play as much a role in labeling winners and losers and the fund's performance itself.

Ron Surz provides one explanation of how peer group composition explains the underperformance of value managers in 2006, followed by their outperformance in 2007.

So, what constitutes a valid peer group, and how can advisors assess the reliability of peer group analysis?

Peer Group Composition

In a perfect world, all funds in a peer group would be restricted to investing in the same group of securities, and these securities would have common characteristics (e.g., they would all lie within one of the nine conventional style boxes). Such homogeneity would facilitate an easy comparison within the peer group; funds would be ranked by risk-adjusted returns, and the ones at the top would be the clear winners.

But peer groups are not homogenous, and in some cases they do not represent the complete universe of funds for comparative purposes. Three primary biases - backfill bias, survivorship bias, and classification bias – lead to non-homogenous or incomplete peer groups. Other biases, particularly in hedge fund databases, compromise the utility of peer group analysis.

Backfill bias occurs when a fund does not begin reporting results until it has achieved success, omitting poor performance which may have occurred in the early stages of the fund. Survivorship bias occurs when funds stop reporting results because of poor performance or in the event of failure and dissolution. In the tightly regulated world of mutual funds, backfill and survivorship biases are typically ignored. In the unregulated world of hedge funds, backfill and survivorship biases are far more problematic. It is critical to understand the collection process used by hedge fund data providers to assess the impact of any backfill or survivorship biases. Both biases have the effect of artificially inflating the results of the remaining universe.

Hedge fund universes are subject to other biases impacting peer group comparisons. Hedge funds that are closed to new investors have little incentive to report their results to data providers. Similarly, funds targeting large

institutional investors do not have an incentive to report to data providers targeting, for example, the advisory market. No hedge fund database reports on the complete universe, and it is up to the advisor to understand systematic biases (usually in the form of lack of reporting) in peer groups and how they affect the remaining universe. Mutual funds publicly report their performance, and data providers reliably capture results from 100% of the universe.

The most pernicious bias, affecting both mutual funds and hedge funds, is classification bias. Peer group providers establish rules for classifying managers as large or small cap, value or growth, etc. and then populate their peer groups with managers meeting these criteria. Classification bias feeds on the lack of similarity among the funds meeting these classification rules, and is caused by funds holding securities outside of the peer group definition and the related phenomenon of style drift. As Ron Surz notes, "it is an amorphous bias that cannot be made to go away, try as we may." Our article on the predictive power of Morningstar's ratings cites three academic studies which document the mis-classification of mutual funds in Morningstar's database. Surz' article, noted above, provides additional evidence that classification bias can be severe enough to misrepresent the overall performance of both value and growth funds over long periods of time.

Peer groups can be ineffective when they are too broadly defined. For example, the Morningstar Long-Short peer group contains funds with dramatically different compositions and strategies. Included in this category are market-neutral funds, specific strategy funds (e.g., merger arbitrage), and funds that write options against market indices. These funds might all serve the same broadly defined purpose (diversification) but the lack of homogeneity in both strategy and composition compromises the effectiveness of peer group analysis.

At the other extreme, if a peer group is too narrowly defined it will not have enough members to facilitate reasonable comparisons. There is a close interplay between classification bias and the size of the peer group. As the size of the peer group increases, so does classification bias, and vice versa.

Vendors typically introduce external indices into their peer groups to facilitate performance comparisons. For example, Morningstar shows the performance of funds in their large cap core peer group against the S&P 500. The use of an external index is independent of peer group classification bias. The index should be thought of as another fund meeting the vendor's guidelines for classification, subject to the same classification bias as are the other funds in the peer group. The external index provides a second, alternative barometer to fund performance, but also underscores the belief that the vendor's peer group does not provide sufficient calibration (otherwise, why bother to provide it?).

Identifying Peer Group Biases

Backfill and survivorship bias, as well as other biases affecting the completeness of a peer group, can be detected only through an analysis of the data collection process of vendor. As we note, these biases generally affect hedge funds and not mutual funds, and are generally widely known, in part because of academic studies which have utilized these databases.

Classification bias is much harder to detect. One approach is to classify mutual funds based on their quarterly reported holdings. However, this approach neglects trading activity that occurs within a quarter, and is not possible with hedge funds who do not report their holdings.

The conventional approach to identifying classification bias is to calculate the correlation of the funds within a peer group. A perfect (1.0) correlation indicates a homogeneous peer group without obvious classification bias. For example, table 1 (at the end of this article) shows the correlations of funds in Morningstar's mutual fund categories. Within the nine U.S. style boxes, correlations range from .93 to .96 but, as we note above, such high correlation can still mask classification bias.

Table 2 shows the correlations in Morningstar's hedge fund database. These correlations are significantly lower than for mutual fund categories. One reason is greater classification bias, partly because hedge fund databases rely on manager-reported holdings, which cannot be verified through publicly reported data. The second reason is that some categories may be too broadly defined, such as US Equity, which encompasses all nine style boxes in the mutual fund universe.

The values in table 1 and table 2 were computed by calculating the correlation of each fund in the category to its peer group benchmark, and then averaging these correlations. This correlation calculation is the "R" in the frequently used "R^2." It is somewhat hard to interpret, other than zero is low and one is high. By contrast, R^2 is the percent of a fund's variance explained by the index.

There is no consensus as to whether low correlation implies a bad peer group. For example, consider "market-neutral" managers, which fall in Morningstar's Long-Short mutual fund category and Equity Arbitrage hedge fund category. A market-neutral manager insulates the fund from broad market moves. There is a wide range of ways this is accomplished. For example, quantitative managers can be long value stocks and borrow (short) an equal dollar amount in growth stocks. By contrast, fundamental managers have a long position in their traditional portfolio and buy puts or sell calls to reduce market

effects. In general, most market-neutral managers employ approaches that are different from one another, and use varying amounts of leverage. But a common misperception is that these managers are long and short very similar portfolios, i.e. “pure” or “perfect” market-neutral.

The peer group of perfect market-neutral managers, who have fully neutralized all betas, have only alphas as returns. They invest in exactly the same opportunity set of stocks, they have exactly the same betas, and their only degree of separation is the alphas they generate. This peer group might have a very low correlation, but this low correlation does not invalidate the utility of comparing their ability to identify superior stocks. A case can be made that this is the perfect peer group, and the fact that the perfection of this peer group cannot be tested with the correlation yardstick, brings into question the value of that particular yardstick.

The counterargument is that it is hard to accept “doing unlike things” as a definition of a “very good peer group.” Funds with low correlations are simply not comparable, and therefore invalidate the central premise of a “peer.” A couple of corollaries to this counterargument are (1) there are very few, if any, pure market-neutral managers, and (2) those who truly are market-neutral share a base rate of return that is equal to the return on cash, so they should be highly correlated, even if their alphas are uncorrelated.

Advisors relying on peer group analysis need to understand its utility and its limitations. It is one criterion, among many, advisors should consider when evaluating fund performance. Every peer group has some biases, and it is important to understand these biases in the context of peer group performance studies.

Table 1 – Correlations in Morningstar’s Mutual Fund Database

Category	Average Correlation
Large Growth	0.94
Mid-Cap Growth	0.94
Small Growth	0.95
Large Blend	0.95
Mid-Cap Blend	0.93
Small Blend	0.96
Large Value	0.94
Mid-Cap Value	0.94
Small Value	0.95
Specialty-Precious Metals	0.98
Specialty-Natural Res	0.91

Specialty-Technology	0.95
Specialty-Utilities	0.95
Specialty-Health	0.89
Specialty-Financial	0.89
Specialty-Real Estate	0.96
Specialty-Communications	0.87
Conservative Allocation	0.88
Moderate Allocation	0.93
Convertibles	0.94
World Stock	0.94
Europe Stock	0.94
Diversified Pacific/Asia	0.95
Pacific/Asia ex-Japan Stk	0.93
Japan Stock	0.94
Diversified Emerging Mkts	0.98
Latin America Stock	1.00
World Allocation	0.87
Foreign Large Growth	0.97
Foreign Large Blend	0.98
Foreign Large Value	0.95
Foreign Small/Mid Growth	0.95
Foreign Small/Mid Value	0.95
Bear-Market	0.74
Bank Loan	0.98
Long Government	0.98
Intermediate Government	0.95
Short Government	0.90
Long-Term Bond	0.90
Intermediate-Term Bond	0.91
Short-Term Bond	0.81
Ultrashort Bond	0.54
High Yield Bond	0.96
Multisector Bond	0.87
World Bond	0.80
Muni National Long	0.97
Muni National Interm	0.98
Muni Single State Long	0.98
Muni Single State Interm	0.97
Muni National Short	0.88
Muni New York Long	0.97
Muni California Long	0.98
Emerging Markets Bond	0.96
Muni New York Int/Sh	0.97
Muni California Int/Sh	0.95
Muni Florida	0.98

Muni Pennsylvania	0.97
Muni Massachusetts	0.98
Muni New Jersey	0.96
Muni Ohio	0.98
Muni Minnesota	0.98
High Yield Muni	0.97
Muni Single State Short	0.92
Long-Short	0.52
Target-Date 2000-2014	0.92
Target-Date 2015-2029	0.98
Target-Date 2030+	0.99
Inflation-Protected Bond	0.98

Table 2 – Correlations in Morningstar's Hedge Fund Database

	Correlation to Category Index	# Funds in Category	# Funds w/ Correlation	% Qualifying
U.S. Equity	0.54	732	392	54%
U.S. Small Cap Equity	0.63	176	99	56%
Developed Asia Equity	0.52	208	96	46%
Europe Equity	0.67	347	182	52%
Emerging Market Equity	0.69	362	148	41%
Global Equity	0.64	311	154	50%
Short Equity	0.10	44	20	45%
Global Debt	0.46	289	145	50%
Convertible Arbitrage	0.63	118	69	58%
Equity Arbitrage	0.31	297	134	45%
Debt Arbitrage	0.25	163	96	59%
Global Trend	0.56	286	156	55%
Global Non-Trend	0.31	371	174	47%
Distressed Securities	0.59	126	77	61%
Corporate Actions	0.60	219	132	60%
Multi-strategy	0.50	331	171	52%
Fund of Funds	0.76	3216	1734	54%