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Braking Ranks

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Because they put the degree of success or failure into perspective, ranks are central to investment performance evaluation. Investment return and rank go hand-in-glove: "Our performance for 2002 is 10%, which ranks in the top decile." But there are significant problems with investment performance ranks. Peer groups, from which ranks are derived, suffer from significant biases. Also, because it takes many weeks to construct peer groups, ranks are generally not available until long after the performance results have been calculated. In the following we describe a new ranking approach that puts a stop to these problems. That is why we call this article "braking ranks."

The Problems With Traditional Peer Groups

Peer groups are used to compare a portfolio's performance to that of other managed portfolios with the same style. The idea is to give the manager a report card based on his ranking among competitors with the same style of management by assembling a universe of similar managers. But traditional peer groups can be skewed by a number of biases.

. . . BIASES CAUSE PERFORMANCE YARDSTICKS BASED ON TRADITIONAL PEER GROUPS TO BE UNPREDICTABLY TOO LONG OR TOO SHORT

Critics of peer groups have documented various biases that undermine evaluations based on such universes. Three of these biases are *classification, composition* and *survivorship.*

- **Classification bias** results from the practice of forcing every manager into some pre-specified pigeonhole, such as growth or value. It is now commonly understood that most managers employ a blend of styles so that pigeonhole classifications misrepresent the manager's actual style as well as that of peers.
- **Composition biases** result both from concentrations of certain fund types in databases, such as bank commingled funds, and from small sample size. International managers and socially responsible managers cannot be properly evaluated because there are no databases of adequate size.
- **Survivorship bias** causes performance results to be overstated because accounts that have been terminated, which may have underperformed, are no longer in the database. This is the most documented and best understood source of peer group bias. For example, an unsuccessful management product that was terminated in the past is excluded from current peer groups. This screening out of losers results in an overstatement of past performance. A good illustration of how survivor bias can skew things is the "marathon analogy", which asks: If only 100 runners out of a 1,000-contestant marathon actually finish, is the 100th the last? Or in the top ten percent?

All these biases cause performance yardsticks based on traditional peer groups to be unpredictably too long or too short. A solution to the problems with traditional peer groups is benchmarking. Benchmarks solve the bias problems but introduce a whole new problem. It takes decades to develop confident inferences of success or failure with benchmarks. In most cases, management changes over the course of time invalidate these inferences. Among the unfortunate consequences of the deficiencies of peer groups and benchmarks is that managers are frequently fired or retained for the wrong reasons. This is where *Portfolio Opportunity Distributions (PODs)* come in. PODs combine the better properties of peer groups with those of benchmarks to create a superior performance ranking system.

Portfolio Opportunity Distributions (PODs)

Portfolio Opportunity Distributions (PODs) eliminate the biases of peer groups by harnessing today's computing power with classical statistics to generate all the possible portfolios a manager could conceivably hold in line with the manager's mandate, or benchmark. The answer to the question "What portfolios are in a POD universe?" is "all of them." In this way, the manager's success, rather than the peer group of choice, is properly evaluated. Traditional peer groups cannot be tailored to the manager's benchmark, so success cannot be properly differentiated from failure.

The basis for PODs is that, in common practice, the statistician constantly compares his results with those expected purely by chance. By applying this concept to performance evaluation, POD generates thousands of

cyber portfolios at random, drawn from the universe of stocks that comprise the manager's benchmark. This assures that the resulting opportunity distribution fairly reflects the manager's opportunities to add value versus the benchmark. PODs are available for many standard benchmarks, as shown in the Tables 1-4. The idea is to find the benchmark that is most appropriate for the manager, and to then locate the manager's rank within the opportunities available for that benchmark. In the past, PODs had been tied to Surz indexes, but these indexes have not gained much popularity. This new adaptation, which we call *Popular Index PODs, or PIPODS,* delivers universes that should be more readily accepted and understood.

The resulting distribution provides a grading system that shows the full range of results (or opportunities) that could have been achieved by the manager while eliminating the biases inherent to traditional peer group universes. PODs also solve the waiting-time problem associated with benchmarks. These Popular Index PODs (PIPODs) have a standard benchmark as their median, with fractiles around the median representing degrees of success or failure. A ranking in the top decile of a POD universe gives the statistician 90% confidence that the return was not merely random, but a significant indication of success. Similarly, a ranking in the bottom decile is a significant indicator of failure. The statistician commonly defines significance as an event that can be interpreted with 90% or greater confidence. A ranking outside a POD universe is a good indicator that the selected benchmark is inappropriate, since the manager had to hold a portfolio that could not have been constructed from securities in the benchmark.

Evaluation against a POD universe tells the evaluator whether the observed performance result was good or bad relative to the unique opportunities available. As discussed earlier, no index, benchmark or traditional peer group universe can provide this insight. Further investigations into the reasons for success or failure – such as attribution analyses and manager interviews – can reveal the manager's level of skill. In a poetic sense, the POD approach actually allows the manager to be hoisted with his or her own petard.

Table 1.
Popular Index PODS for the Quarter Ending December 31, 2002

	5th Percentile	Top Quartile	Median	Bottom Quartile	95th Percentile
S&P 500	14.9	10.8	8.4	6.2	2.1
S&P 400 Mid Cap	15.0	9.3	5.8	2.7	-1.3
S&P 600 Small Cap	15.0	9.1	4.9	1.5	-3.3
Russell 3000	14.7	10.6	8.0	5.5	1.7
Russell 200	14.6	10.6	8.2	5.8	1.1
Russell 1000	14.9	10.7	8.2	5.6	1.5
Russell Mid Cap	16.3	10.8	7.9	5.1	1.5
Russell 2000	16.5	10.0	6.2	2.6	-2.8
Russell 2500	16.5	10.1	6.6	3.2	-1.8
S&P/Barra Value	15.1	11.8	9.9	7.6	3.2
Russell 3000 Value	13.7	10.7	8.9	6.8	2.6
Russell 200 Value	15.2	11.9	10.1	7.9	3.2
Russell 1000 Value	14.0	11.0	9.2	7.0	2.7
Russell Mid Value	12.8	9.3	7.1	5.2	2.1
Russell 2000 Value	12.6	8.1	4.9	2.5	-1.7
Russell 2500 Value	12.6	8.3	5.5	3.1	-0.5
S&P/Barra Growth	15.0	9.8	7.1	4.8	0.4
Russell 3000 Growth	16.5	10.4	7.2	3.9	-1.1
Russell 200 Growth	14.6	9.7	6.7	3.8	-1.2
Russell 1000 Growth	16.3	10.3	7.2	4.0	-1.2
Russell Mid Growth	22.1	13.0	9.2	4.8	-1.2
Russell 2000 Growth	21.3	12.2	7.5	2.6	-4.5
Russell 2500 Growth	21.9	12.7	8.3	3.5	-3.3

Table 2.
Popular Index PODS for the Year Ending December 31, 2002

	5th Percentile	Top Quartile	Median	Bottom Quartile	95th Percentile
S&P 500	-10.0	-17.7	-22.1	-25.7	-31.5
S&P 400 Mid Cap	-0.7	-8.7	-14.5	-20.5	-26.9
S&P 600 SmallCap	0.6	-8.1	-14.6	-22.4	-30.0
Russell 3000	-11.2	-17.4	-21.5	-25.5	-30.5
Russell 200	-11.7	-18.8	-23.4	-26.8	-32.4
Russell 1000	-10.4	-17.2	-21.6	-25.5	-30.8
Russell Mid Cap	-2.1	-10.6	-16.2	-21.0	-27.2
Russell 2000	0.4	-13.2	-20.5	-26.9	-35.0
Russell 2500	1.1	-10.8	-17.8	-23.6	-31.2
S&P/Barra Value	-8.9	-15.6	-20.9	-24.5	-30.0
Russell 3000 Value	-2.1	-9.7	-15.2	-19.0	-25.0
Russell 200 Value	-5.9	-12.9	-18.0	-21.6	-27.2
Russell 1000 Value	-3.4	-10.2	-15.5	-19.2	-24.9
Russell Mid Value	6.4	-3.9	-9.6	-13.9	-21.5
Russell 2000 Value	8.9	-5.1	-11.4	-16.6	-24.9
Russell 2500 Value	7.6	-3.8	-9.9	-15.1	-23.1
S&P/Barra Growth	-9.5	-19.2	-23.6	-27.3	-34.0
Russell 3000 Growth	-14.8	-23.0	-28.0	-32.2	-38.1
Russell 200 Growth	-16.0	-23.8	-28.0	-31.6	-37.4
Russell 1000 Growth	-14.1	-22.9	-27.9	-31.8	-38.0
Russell Mid Growth	-8.3	-19.4	-27.4	-32.9	-40.0
Russell 2000 Growth	-7.3	-21.4	-30.3	-38.5	-47.0
Russell 2500 Growth	-7.2	-20.4	-29.1	-36.4	-44.3

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Summary

Portfolio Opportunity Distributions offer a new standard appropriate to the ongoing technological revolution that characterizes our entrance into the 21st century. This innovation is only recently possible due to the fact that the computing power necessary to run POD simply did not exist as little as 10 years ago. The introduction of POD coincides with growing recognition of the inadequacies of the old approaches we've used for the last three decades. Importantly, POD ranks are available within days after the end of a performance measurement period, versus weeks with traditional approaches.

Traditional peer groups will continue to be used for manager searches because the intent is to hire the best of the survivors. PODs will be used for performance evaluations, where the intent is to determine manager value-added above a benchmark. ■

About the Author

Ronald J. Surz, CIMA, MBA, MS, is president of PPCA, Inc., a firm specializing in attribution analysis and the developer of StokTrib, software that tracks style allocations and the effects of style, using portfolio holdings. This point-in-time, style-based attribution analysis applies to both U.S. and non-U.S. portfolios.

Table 3.
Popular Index PODS for the 3-Years Ending December 31, 2002

	5th Percentile	Top Quartile	Median	Bottom Quartile	95th Percentile
S&P 500	-5.7	-11.7	-14.6	-17.4	-22.0
S&P 400 Mid Cap	10.6	4.7	-0.1	-4.1	-13.0
S&P 600 Small Cap	12.7	7.2	0.6	-3.7	-15.0
Russell 3000	-4.8	-10.5	-13.7	-16.7	-22.6
Russell 200	-8.0	-14.0	-16.8	-19.7	-24.2
Russell 1000	-5.1	-11.1	-14.2	-17.2	-22.7
Russell Mid Cap	5.2	-1.2	-5.0	-9.1	-16.5
Russell 2000	5.6	-1.8	-7.5	-12.7	-22.7
Russell 2500	7.6	0.4	-4.6	-9.6	-18.2
S&P/Barra Value	-0.8	-6.3	-9.5	-12.8	-18.2
Russell 3000 Value	4.8	-0.9	-4.3	-7.7	-13.4
Russell 200 Value	-0.5	-5.8	-8.5	-11.4	-16.0
Russell 1000 Value	3.6	-1.9	-5.1	-8.4	-13.8
Russell Mid Value	14.4	7.3	3.3	-0.8	-7.0
Russell 2000 Value	20.1	12.8	7.4	2.8	-6.7
Russell 2500 Value	18.0	11.2	6.1	1.8	-6.2
S&P/Barra Growth	-10.1	-17.0	-19.6	-22.2	-26.1
Russell 3000 Growth	-12.8	-20.0	-23.4	-27.2	-33.2
Russell 200 Growth	-14.1	-21.3	-24.4	-27.5	-32.2
Russell 1000 Growth	-12.9	-20.4	-23.6	-27.2	-32.5
Russell Mid Growth	-7.8	-15.7	-20.0	-25.9	-34.1
Russell 2000 Growth	-6.5	-14.4	-21.1	-27.1	-38.5
Russell 2500 Growth	-5.2	-13.2	-19.0	-25.0	-35.3

Table 4.
Popular Index PODS for the 5-Years Ending December 31, 2002

	5th Percentile	Top Quartile	Median	Bottom Quartile	95th Percentile
S&P 500	6.6	2.4	-0.6	-3.0	-7.8
S&P 400 Mid Cap	15.4	10.2	6.4	2.9	-4.8
S&P 600 Small Cap	12.8	6.8	2.4	-1.7	-9.7
Russell 3000	7.3	2.6	-0.7	-3.5	-8.9
Russell 200	6.3	1.8	-1.3	-3.8	-8.2
Russell 1000	7.3	2.6	-0.6	-3.3	-8.6
Russell Mid Cap	10.1	5.6	2.2	-0.9	-8.4
Russell 2000	9.3	3.0	-1.4	-5.6	-12.9
Russell 2500	10.9	5.5	1.6	-2.2	-10.0
S&P/Barra Value	5.4	1.9	-0.8	-3.6	-8.2
Russell 3000 Value	7.1	3.9	1.2	-1.6	-6.3
Russell 200 Value	6.5	3.1	0.6	-2.1	-5.7
Russell 1000 Value	7.1	3.8	1.2	-1.6	-6.1
Russell Mid Value	8.9	5.8	3.0	0.3	-6.8
Russell 2000 Value	12.3	6.8	2.7	-1.0	-7.3
Russell 2500 Value	11.1	6.9	3.5	.4	-6.8
S&P/Barra Growth	6.8	2.1	-1.1	-3.3	-8.2
Russell 3000 Growth	5.9	-0.2	-4.1	-7.2	-13.9
Russell 200 Growth	5.8	-0.3	-4.1	-6.8	-12.2
Russell 1000 Growth	6.1	0.0	-3.8	-6.7	-13.1
Russell Mid Growth	8.7	2.4	-1.8	-5.8	-15.4
Russell 2000 Growth	5.8	-1.6	-6.6	-11.7	-20.7
Russell 2500 Growth	8.6	1.5	-3.2	-7.9	-17.2

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