Investment Planning Answer Book by Jay L. Shein, Portfolio Opportunity Distributions

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Like most employees in a corporation, investment managers such as separate account managers and mutual funds are subject to performance reviews. The purpose of this type of review is to reveal if the manager is performing well. Managers that do not meet expectations can be replaced as there are typically many others managers to choose from. When some managers are reviewed, their performances are compared to other managers: this is usually referred to as a "peer group review." In addition to peer groups, managers are usually subject to comparison relative to a benchmark. Portfolio Opportunity Distributions (PODs) is a method used in order to be fair and accurate when evaluating money managers. By using this evaluation approach, advisors and consultants can determine whether a manager should be hired or fired based on their skill or lack of skill and not merely because that manager's investment approach is in or out of favor.

Investment Planning Answer Book by Jay L. Shein, Q 7:1, What are Portfolio Opportunity Distributions (PODs)?

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Ronald J. Surz, founder of PPCA, Inc. (ppca-inc.com), created the Portfolio Opportunity Distributions (PODs) methodology. PODs are a compilation of portfolios that an investment manager could hold while still adhering to their investment mandate. In effect, all the portfolios that a particular investment manager (such as a separate account manager or mutual fund) could possibly hold are generated based on the selected manager's selection universe. The manager's performance is ranked against all these portfolios to determine the likelihood that the manager's returns were more likely the result of skill rather than luck. These could be derived from indices such as the S&P 500 or the Russell 2000. PODs are complete peer groups that are scientifically designed and eliminate the problems associated with conventional peer groups and benchmark indices. Combining the benefits of peer groups and benchmark indices helps to avoid their inherent shortcomings. Unlike conventional peer groups, PODs provide more precise, timely, and impartial information. PODs also provide statistical significance for much shorter periods than traditional indices.

Investment Planning Answer Book by Jay L. Shein, Q 7:2, What are the problems with peer groups and benchmarks?

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Evaluating money managers using peer group review or comparison to a benchmark has some problems. First, the job is complicated because the advisor needs to pick the right peer group from among the available options. Second, different peer groups give different conclusions relative to a manager's performance. There are biases that exist in peer groups used to evaluate investment managers. Some problems with benchmarks include the following: it is difficult to define them for any particular manager and enough time must be allowed for the manager to achieve or exceed the benchmark return. It can take long periods of time, even decades, for a skillful investment manager to deliver the value added that they propose. Most investors are not willing to wait that long.

Portfolio Opportunity Distributions are a peer group set derived using Monte Carlo Simulation (MCS). PODs reduce or eliminate some of the biases in peer groups such as survivorship bias and classification bias. The main focus of PODs is to compare a manager's performance to those that could be expected by mere chance.

Investment Planning Answer Book by Jay L. Shein, Q 7:3, How do Portfolio Opportunity Distributions solve the survivorship bias problem with peer groups?

One of the major advantages of PODs is that they can be very style specific and eliminate the problem of survivorship bias. Survivorship bias is a well-documented problem that needs to be addressed when using peer groups. When a manager's past performance is stated relative to a peer group, many managers may have been deleted because of poor performance in that peer group. This will overstate the performance of the peer group. Survivorship bias can be explained with an example. Suppose a marathon race started with 1,000 people, and only 100 people finished the race. The question that might be asked would be as follows: Did the 100th person finish last or were they in the top 10 percent? So, if you have 1,000 managers in a peer group that started 10 years ago, and currently, only 100 of those managers are left in existence (the other 900 may have merged, closed, or gone out of existence for some other reason), is that 100th manager a good manager for finishing in the top 10 percent or are they the worst manager? Only including portfolios that have been in business for the entire period that is being evaluated for a manager increases the performance level that a manager has to achieve. Many times, an investment manager such as a mutual fund has maintained a constant skill level and is performing above expectations. But if the manager's style goes in or out of favor, they may be replaced by managers that are not as skillful because the advisor is using the wrong benchmark or peer groups. A reliable peer group and benchmark should alleviate this problem. This is the purpose of PODs.

Investment Planning Answer Book by Jay L. Shein, Q 7:4, What is classification bias?

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Requiring a manager to fit into a pre-specified style box such as growth or value results in classification bias. Because many managers today use a blend of styles, the style box that they are forced into misrepresents the manager's actual style. This also causes the style of the manager's peers to be misrepresented which adds to the peer group analysis comparison problem since much of the peer group may also be misclassified.

Investment Planning Answer Book by Jay L. Shein, Q 7:5, How do peer groups and benchmarks affect the money manager search and termination process?

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Because of the deficiencies in peer groups and benchmarks, many advisors and investors change managers even with slight hints of poor performance. Many times, this can be a big mistake. Many times, the wrong peer groups or benchmarks cause advisors to fire or hire investment managers for the wrong reasons. Advisors have been known to fire a manager in tough times and then miss that manager's superior performance when things get better. Advisors have also frequently hired a manager based on their excellent performance only to see a subsequent period where they underperform.

Investment Planning Answer Book by Jay L. Shein, Q 7:6, What are some other manager universe (peer group) drawbacks?

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The following are some other drawbacks to manager universes (peer groups). The data on the universes are not available in a timely manner which can delay manager comparison. However, Portfolio Opportunity Distributions are available in a timely manner. There is no specific process typically used to determine whether a manager's universe accurately represents the style of the manager being compared.

Investment Planning Answer Book by Jay L. Shein, Q 7:7, How do the results of manager databases compare over various time periods?

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For the short run, manager databases give very similar results as Portfolio Opportunity Distributions in the long only space. But because managers leave the database either due to the fact that they close, merge, or choose not to report to a particular database, these databases can suffer from survivor bias and overstate the universe's performance over longer periods of time. Once the time period being compared goes much past three years, peer groups created by manager databases can become very different from PODs. This is one reason PODs offer a better peer group and benchmark than more traditional methods.

Hedge fund databases have a much greater problem with survivorship bias especially in recent history. Many hedge funds stop reporting or have gone out of business during a very short tenure in their life span. With hedge fund databases, even short periods of time can cause a major survivorship bias problem.

Investment Planning Answer Book by Jay L. Shein, Q 7:8, What are the basics of Portfolio Opportunity Distribution methodology?

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Portfolio Opportunity Distributions provide a unique methodology to create benchmarks and peer groups to evaluate a manager's performance. The first step an advisor must take in the process of using PODs is to define what type of investment manager (such as a separate account manager or mutual fund) that the advisor is looking for. This could be a large capitalization value stock manager, a small capitalization growth stock manager, or a diversified U.S. market-like portfolio of large company stocks. If the U.S. market-like portfolio was chosen, the benchmark assigned might be the S&P 500. The separate account manager or mutual fund for this example should outperform this benchmark as that is what they are being paid to do.

PODs randomly create portfolios that are similar in style to the money manager that is being evaluated. Essentially, PODs are a custom, unique benchmark used to compare managers to themselves. PODs methodology uses a Monte Carlo Simulation approach to produce a unique benchmark and peer group. This MCS would create thousands of random portfolios drawn from the 500 stocks in the S&P 500 that could be realistically held by the manager being compared. One of these random portfolios would match the manager's actual portfolio. All the other portfolios randomly created by this method would make up all the portfolios that the manager could have assembled. Using this random simulation method, the advisor can assess whether the manager made consistent, good decisions in their security selection process relative to all their other opportunities.

When the advisor reviews the results of the Monte Carlo Simulation, they can divide it into different quartiles or other ranges to easily view the results of the manager versus the PODs peer group. This observation would show that the average portfolio would return the same as the index. If the manager did better than the index, they would be adding value versus the index. Where the manager ranks in the distribution of possible portfolios indicates how well the manager did versus his peer group. If your manager did better than the median, then he would be adding value over his peer group without the problems of survivorship or classification bias.

Investment Planning Answer Book by Jay L. Shein, Q 7:9, Why not just use a benchmark instead of a peer group?

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Using a benchmark such as the S&P 500 solves some of the problems with peer groups such as the weeks it takes to assemble peer group data as well as survivorship bias. But just using a benchmark has its own problems. It can take many years, even decades, to confidently determine if a manager is skillful or not. Those that use benchmarks will eventually want to determine if the excess return that the manager is getting over the benchmark (e.g., 2.5 percent) is significant or not. One common solution used to alleviate some of these issues is to compare a manager both to a peer group and to show a benchmark relative to that same peer group. Portfolio Opportunity Distributions removes these problems as data is available almost immediately and eliminates survivorship bias.

Let's examine how this might work for a particular manager. An advisor could pick a benchmark of their choice. Instead of calculating that benchmark's return which is the combined performance of all the stocks in the benchmark, PODs could be used to create all the portfolios that could be assembled using the stocks in the benchmark. This would create all the possible managers for a peer group to be used for the manager comparison. A manager that was in the top quartile of these peer groups would suggest that there is a 75 percent probability that the manager has added value and was not due to mere chance. If the manager was in the top decile, it would suggest that the manager had a 90 percent probability that they have added value. Because all the portfolios that could be created by this manager are in the peer group, the advisor can be confident that this is a fair evaluation.

Investment Planning Answer Book by Jay L. Shein, Q 7:10, Can Portfolio Opportunity Distributions be used for attribution analysis?

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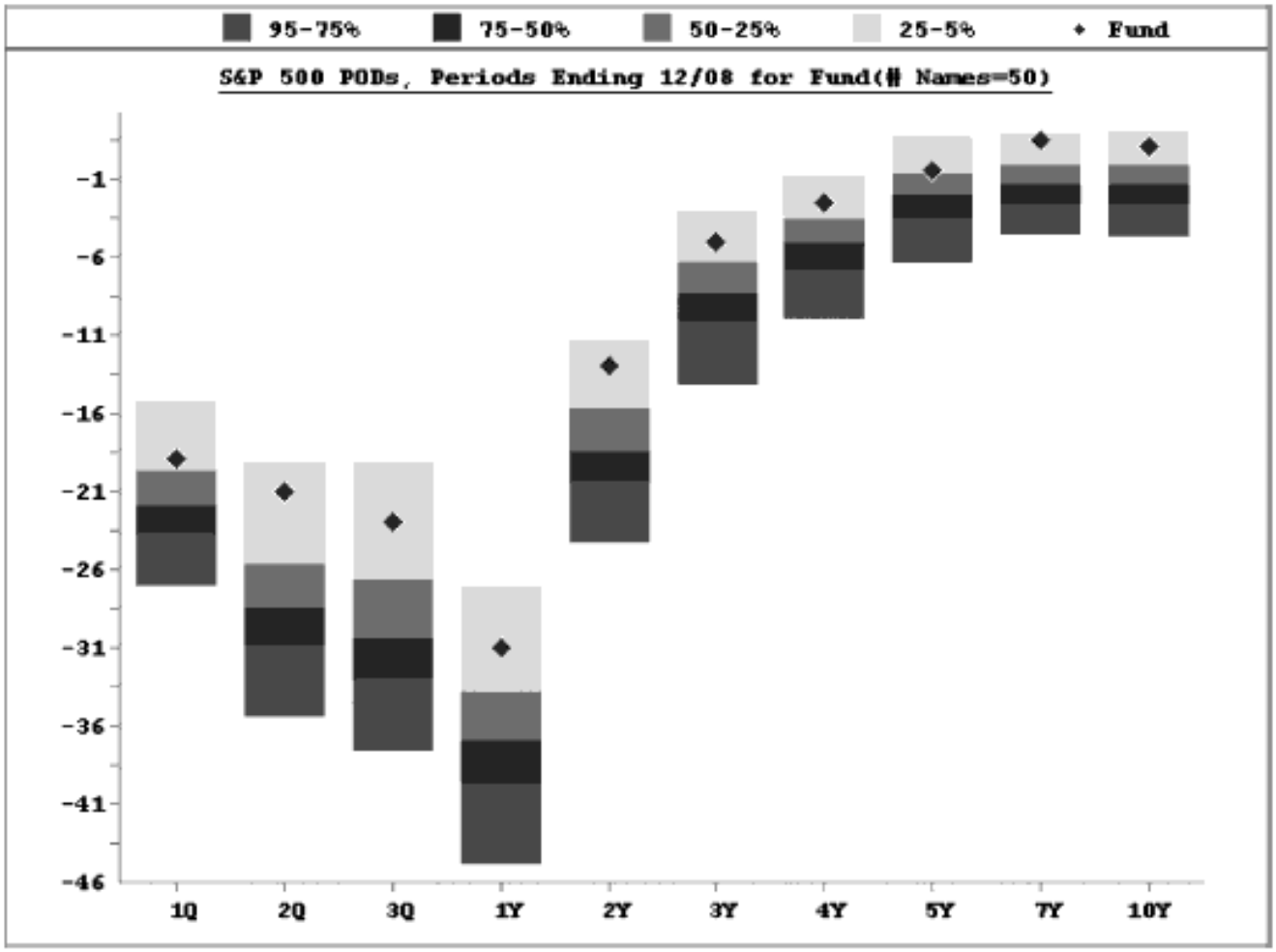
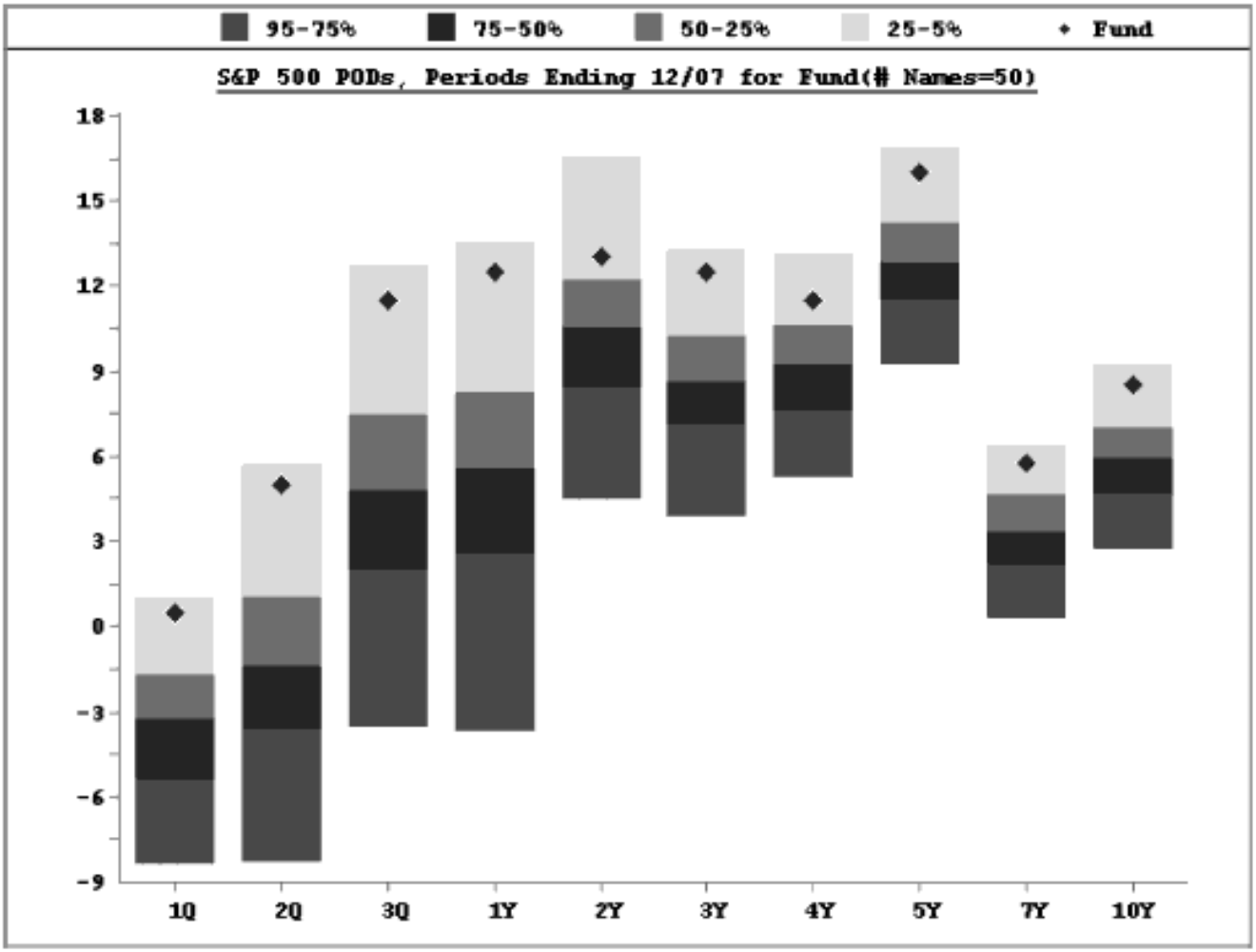
In order to capture the fundamental nature of a manager's performance, the median of the PODs universe can be used for a benchmark that is custom for that manager. The difference between the manager's return and the median is the value added or detracted by the manager's style changes and security selection decisions. The examples below show two different managers over different time periods that added value over the median over various time periods.

Sample of Well-Performing manager for 10 year period ending 12/08



Sample of Well-Performing manager for 10 year period ending 12/07



Investment Planning Answer Book by Jay L. Shein, Q 7:11, Can Portfolio Opportunity Distribution universes replace peer groups or normal portfolios for comparison purposes?

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Normal portfolios are used to capture the essence of a manager's mandate. Ideally PODs are created from normal portfolios. In other words, PODs do not solve the problem of creating an accurate benchmark. The consultant is still on the hook for that. PODs turn this accurate benchmark into an opportunity set that can deliver statistical significance in a short period of time, providing a more reliable and accurate evaluation or whether the manager's process is adding or detracting value.

Investment Planning Answer Book by Jay L. Shein, Q 7:12, How can returns-based style analysis be combined with Portfolio Opportunity Distributions?

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Returns-based style analysis, discussed elsewhere in this publication, was developed by Nobel laureate William Sharpe. PODs can be used in conjunction with returns-based style analysis to evaluate the added value a money manager or mutual fund offers. When using PODs, it is necessary to specify the specific style criteria to create the randomly selected peer group for comparison purposes. The underlying indices that the advisor uses for returns-based style analysis should be mutually exclusive and free of multicollinearity. Multicollinearity exists in multiple regression and quadratic optimization where the predictor variables (e.g., various indices) are highly correlated to themselves. To avoid this, at least for stock indices when using style analysis, it is suggested that you use indices that are mutually exclusive and free of multicollinearity. The best choices would be the Surz Pure Style™ indices. If not available, a secondary choice, although not as good, would be the Russell indices.

EXAMPLE 7-1

Consider an advisor evaluating a money manager known as XYZ. When subjecting the manager to returns based style analysis using the Surz Pure Style™ indices, we see that the manager is 50% large cap growth stocks and 50% mid size growth stocks. This would be the weighting used for the POD universe. If the technology is not available to create this mix for the PODs, the advisor could use the indices with Popular Index Portfolio Opportunity Distributions (PIPODs) that have the highest R-squared to the manager's style. The weighting of style analysis would allow the PODs to be representative of that manager's universe. If the PODs were divided into four quartiles, the advisor would have four quartiles with the center of the four quartiles representing the median for that manager. If Manager XYZ appeared above the median of the POD, they would be adding value. Preferably, the manager would be in the top quartile. If the manager would be below the median, they would be subtracting value.

The combination of these two mathematical techniques can give the consultant greater confidence in the quantitative side of money manager analysis. When advisors are designing a portfolio and allocating investments to major world asset classes, the use of style analysis and PODs will enhance the implementation of the asset allocation decision. If the design of the portfolio indicated that 50 percent should be in large cap growth stocks, then the style analysis would reveal to the advisor whether the portfolio was truly tilted toward large capitalization growth stocks. Using the PODs universe/peer group could then tell the advisor if that manager was adding value over and above that which would be indicated by pure chance.

Combining returns-based style and PODs provides the advisor or consultant with valuable tools that together provide a powerful method to analyze separate account managers and mutual funds. It is unlikely that any index, benchmark, or peer group can evaluate a money manager's performance as effectively as combining returns-based style analysis and PODs. While these quantitative methods will provide added value in the money manager analysis process, they are insufficient without the qualitative analysis of the manager. Qualitative analysis is discussed in the chapter titled "Investment Manager, Mutual Fund, and Hedge Fund Search, Selection, and Due Diligence." PODs are becoming popular and will be used more in the future as the strategy is fair and eliminates many biases.

Investment Planning Answer Book by Jay L. Shein, Q 7:13, What is a criticism of Portfolio Opportunity Distributions?

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Portfolio Opportunity Distribution which uses Monte Carlo Simulation has its critics. One of the criticisms is that the distributions created by MCS are not real and do not represent real managers in a peer group. Looking at the real managers in a peer group depends on how the managers that should appear in the peer group are defined. Then the data would have to be compiled on these actual managers. Each database has a different methodology for defining their peer groups. Depending on the database providers' methodology, any particular manager could appear in different peer groups. If a particular manager does not like where she ranks in a particular database, she can stop reporting to that database and only report to one that shows her in the best light. These discrepancies in sampling are another source of bias in peer group analysis. If a particular database provider wanted to validate its peer group as being representative of a particular style, it could use the Monte Carlo Simulation to compare to the traditional peer group for validation. Because of the biases previously mentioned in this chapter such as survivorship bias and classification bias, traditional peer group analysis does not seem to produce the best sample data to evaluate a manager.

Investment Planning Answer Book by Jay L. Shein, Q 7:14, Are Portfolio Opportunity Distributions an equal weighted or buy-and-hold analysis?

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PODs are capitalization weighted so that the chance of any one stock being selected is proportionate to the market capitalization weight of that particular stock. PODs are not a buy-and-hold methodology as this is not representative of what really happens in the world. Companies go out of business, new companies come into existence, and portfolios have transactions. PODs reflect the realities of portfolio managers.

Investment Planning Answer Book by Jay L. Shein, Q 7:15, What if an advisor uses the wrong benchmark to create Portfolio Opportunity Distributions?

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An advisor can choose the wrong benchmark. A POD analysis will indicate that this has occurred. If the manager is consistently in the top 5 percent, this can indicate that it is an inappropriate benchmark for the manager. A manager doing extremely well against the wrong benchmark may have performance close to the median with the correct benchmark.

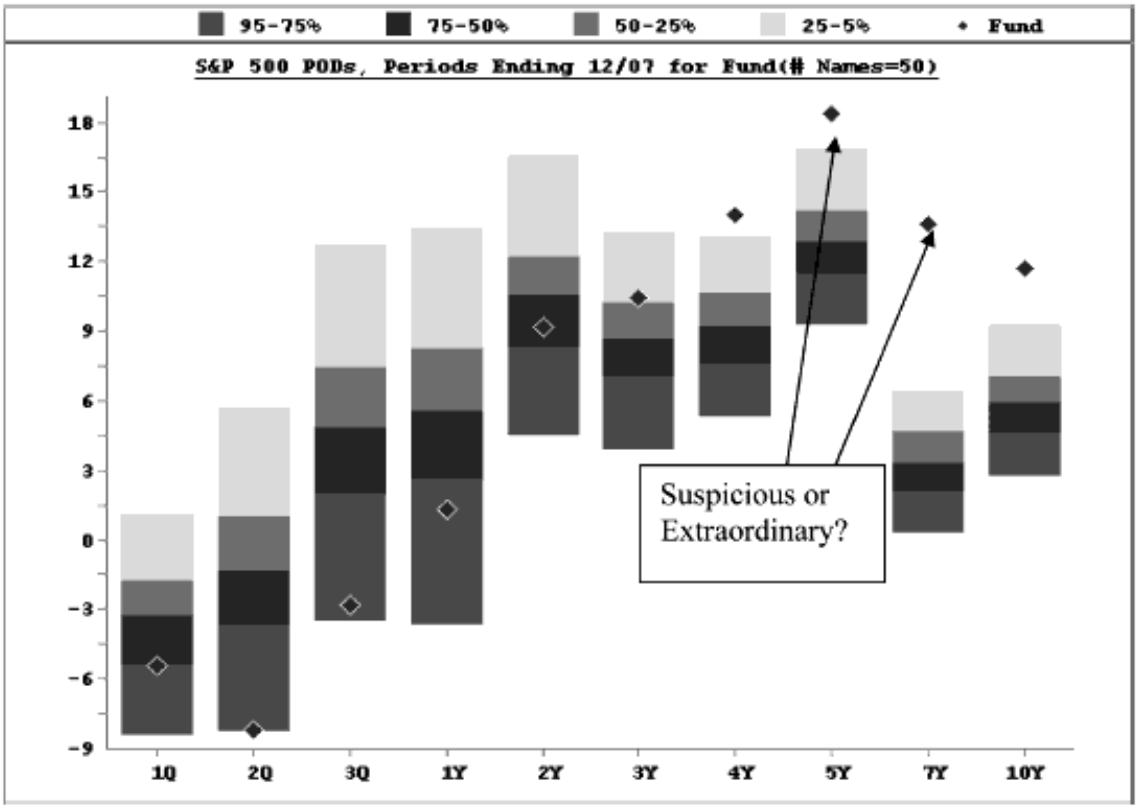
EXAMPLE 7-2

Assume a POD distribution drawn from the S&P 500 as the manager's universe, the median return during that particular quarter for the distribution was 9 percent, and the manager's return was 6 percent which put the manager in the 90th percentile by rank. Now, the same manager is compared to a POD distribution drawn from the Russell 2000 Growth Index where the median return for the distribution was 15 percent and the manager's return was 12 percent ranking the manager in the 76th percentile. Since it turns out that the manager is actually a small growth manager, the comparison is valid when using the Russell 2000 Growth and not so when using the S&P 500. A volatile manager such as a small growth manager underperforming by a small percentage in a particular quarter should not be concerning, but a large company stock manager underperforming by the same amount may be rise for concern.

The following example shows a manager who is ranked against the incorrect peer group. If an advisor or consultant sees the manager's performance during various time periods that are much higher than the top quartile of the PODs peer group, they should consider this a test of reasonableness where in this case there should be suspicion that this is the incorrect peer group for this manager.

EXAMPLE 7-3

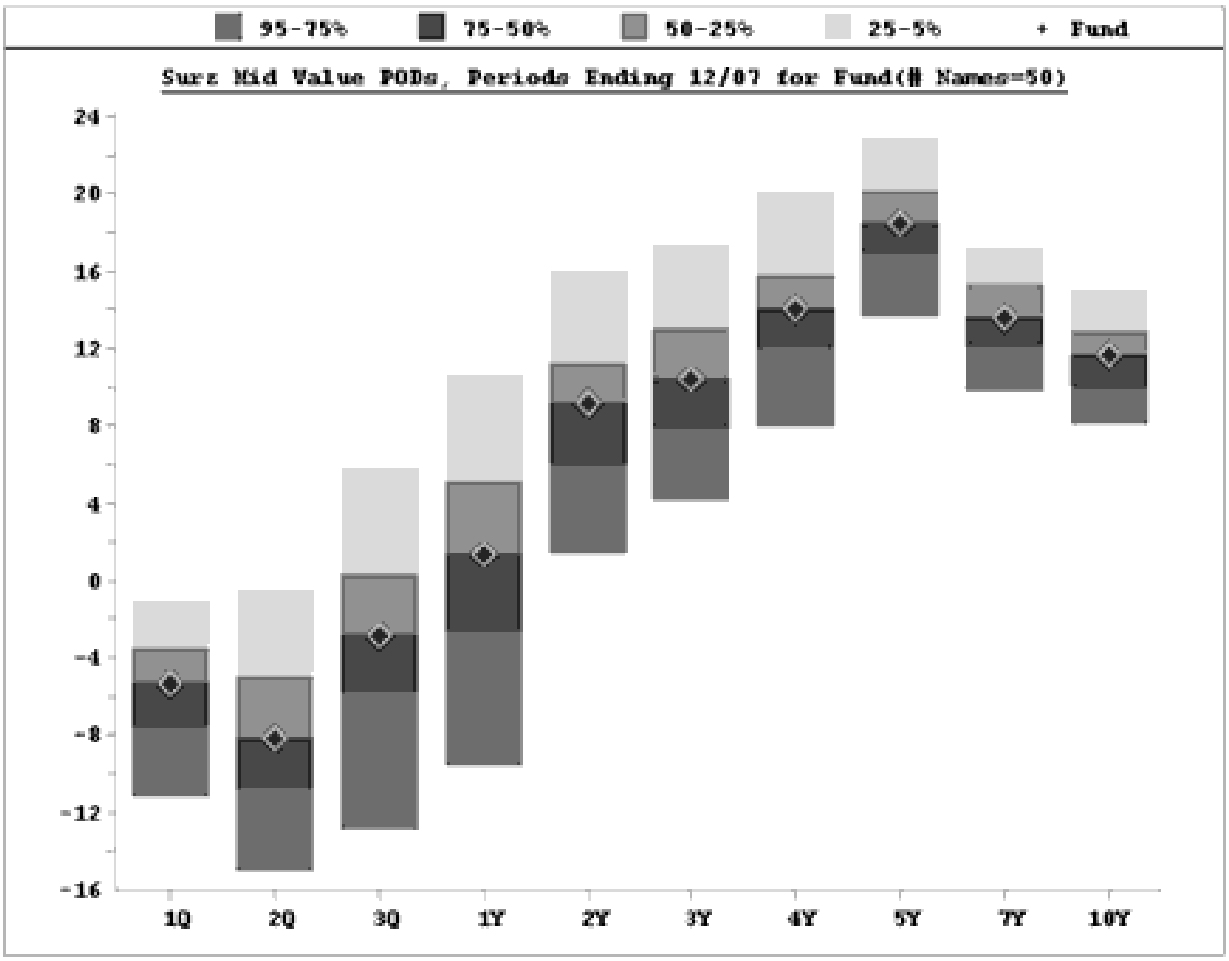
A Reasonableness Test Rankings versus S&P 500



When the same manager is ranked against the mid-cap value peer group which is the correct peer group for this manager, there is a dramatic difference in the results. As can be seen, the manager ranks right on the median which indicates that this manager is not adding any value versus their peer group.

If an advisor using PODs finds that a manager does extremely well such as in the top 5 percent in most time periods such as one year, two year, three year, four year, five year, seven year, and ten year, then the manager is either extraordinary or the advisor should be suspicious as to whether that manager is declaring the appropriate benchmark for his style and process or if the advisor has misclassified the manager's style or benchmark. By picking the right benchmark to create the POD universe, the advisor will have an unbiased peer group to determine if the manager is adding value or not. The advisor should be careful to choose the right benchmark for creating the POD universe. One way to do this would be by selecting a benchmark that has a high correlation to the manager.

Same Manager Ranked Against Mid Value



Investment Planning Answer Book by Jay L. Shein, Q 7:16, How many names should be included in each portfolio when using Portfolio Opportunity Distributions (PODs)?

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There are basically three types of long stock money managers. One is the traditional manager which is a manager that tends to be concentrated in twenty to forty names (stocks), has a high tracking error to their benchmark, and is an alpha-seeker. Another is a structured manager that hugs the benchmark much closer and is a highly relative skill (benchmark) driven manager that will hold more stocks in their portfolio (such as seventy to one hundred names) than the traditional manager. They typically will produce smaller amounts of alpha but will not stray far from their benchmark. The third type of manager is a passive manager such as an index fund.

For the traditional managers, thirty names are probably enough names for a POD distribution. For structured managers, seventy to one hundred names are probably enough. For the passive managers such as an index, the manager's return should fall on the median for the POD. For this type of manager, one hundred names or more is sufficient.

Investment Planning Answer Book by Jay L. Shein, Q 7:17, What do Portfolio Opportunity Distributions represent?

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PODs represent what managers have done; they also depict managers by describing what they might have done. Given the market turmoil that has occurred in recent years, it is becoming even more complicated to separate skill from luck. PODs help determine if the manager is adding value (skill) by looking at whether the manager has outperformed all the possible combinations derived from a given benchmark or index. This tool will assist advisors in finding investment managers that are consistent.