Ruminations on Alpha vs. Luck

One of the problems we have in selecting investment managers is determining who actually outperforms others. Much of the "alpha" that exists is due to either luck or simply selecting a benchmark that makes the manager look good (instead of the most appropriate one). Most people, financial professionals included, seriously underestimate the level of randomness and how much data would be needed to know, with a high degree of confidence, if one manager is better than another.

[Technical details for those interested: Take the variance (the standard deviation squared) of the fund or portfolio plus the variance of the benchmark minus two times the correlation times the standard deviation of the fund times the standard deviation of the benchmark. Divide that result by the number of observations (how many years or months of data) and then take the square root. Divide the difference in means (the outperformance per period in other words) by your previous result and look up this number on a table (typically Student's T Distribution) to determine what degree of significance there is.]

In other words, imagine a manager with a 2% alpha (which as Bob Arnott notes, he or she would cheerfully kill a grandmother for), the same risk as the market (about 20% standard deviation long-term), and a 90% correlation with the benchmark (again about typical for a manager).

For this phenomenal manager with the 2% outperformance on average, how many years of data would we need to know he or she was good and not just lucky, using (as is customary) a 95% confidence level as the criterion? 56 years. Which means realistically we almost never know with a high degree of certainty if a manager is good or merely lucky.

Notes:

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