

Who does not know the truth is a fool, but he who, knowing it, calls it lie, is a disloyal person.

Bertold Brecht

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# Statistical significance: That's why the Most Out of Financial Studies Are Wrong

by Matthew J. Stettler | written October 24, 2014

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University, Heqing Zhu, assistant Texas A & M University - in a recent (NBER), a member organization landscape. According to Harvey the medical community, proclaiming th basically wrong - the idea was to results for the financial sector. So 1 which different factors were exar leverage and the price-earnings rati

There are those who know it. Then there are those who studied. And there's even someone who really has learned. Italy, thinking positively, can belong to at most the first category. The policy discusses

Why do some investments make more than others? Hundreds of economists and investment companies that invest their resources every day in field studies to lead to a resolution of this age-old dilemma. On the other hand, there are also those mystery behind the yield about the result of a study the short - ergo, many of of research in finance

nced by three academic obell R. Harvey, of Duke roma, and Yan Liu, the au of Economic Research ninent in the American 005 that has shocked the ed so far in the area were would lead to the same ver 300 field studies, in turns, including financial

### Highlights



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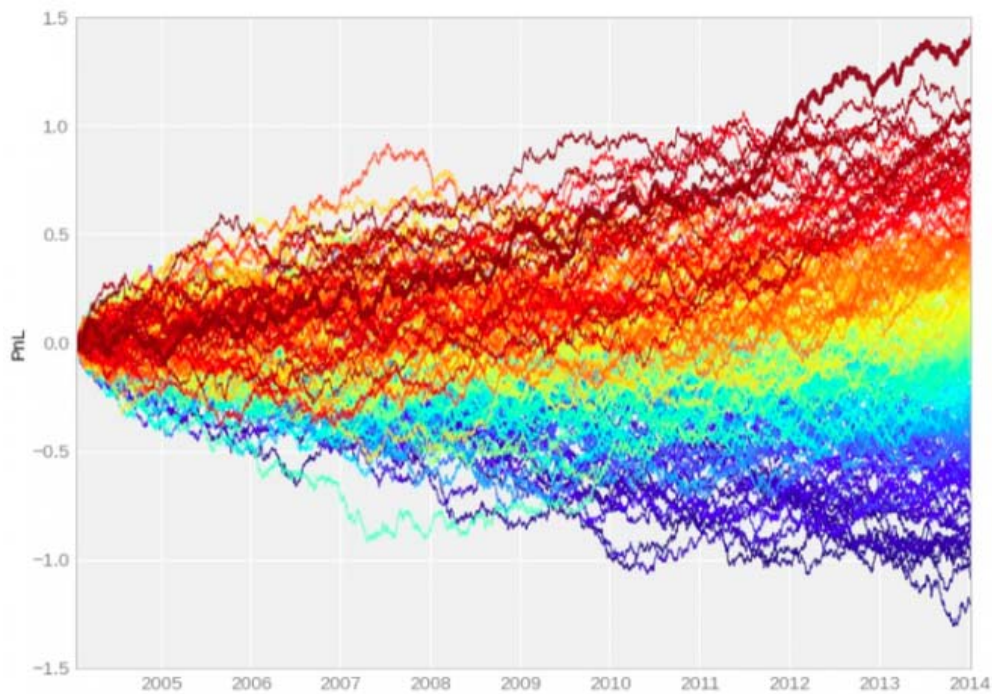
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True to its initial inspiration, Harvey and his collaborators, in order to explain the distortions present in the search results, they used **genetic tests** used in the medical field - a check which is then employed when you are intent on demonstrating the relationship between a particular gene and a disease. The practice, in these cases, involves the examination of several genes for a single disease - where, if for a test unique gene-disease, the chance that the statistical relationship between the two is a pure coincidence are very low, when testing a high number of assumptions, the probability of finding a relationship "statistically significant" without any foundation causal grow more and more.

What emerged from the comparative Harvey is a lack of rigor in the standards used to determine the **statistical significance** of the results of financial studies. The direct consequence of this approximation is, according to the three that "most of the results claimed in financial economics are probably false." Similarly to what happens in medicine with genetic testing, in economic analysis in order to understand which variables are correlated with high returns of the securities, the guru of finance tend to compare several variables on the basis of **statistical tests that are significant at the 5 per cent** - This means that when a variable proved statistically "significant" in explaining the high equity returns, there is a 5 percent chance of observing such a result (or a bigger one), even if there is a real effect of correlation.

Although these may seem rather low probability when considering a single test, performing many simultaneously you have the security of finding a relationship that is "significant", but in reality it is just *white noise* . To show this dynamic, Harvey has checked 200 random variables using a random number generator (see Figure 1).

**Figure 1.** Simulation results of Harvey with random variables



Source: AHL Research

What, at first glance in the graph, it can seem like a very good correlation with high dividend yields (the line highlighted in dark red), is in fact, according to Harvey, the consideration "of a **monkey throwing darts to the stock listings in the Wall Street Journal** . " If you want to analyze the results of the study from a broader perspective, we can say that the lesson imparted by Harvey and his collaborators in having're taught to distrust "by some financial managers who seem to outperform," because that, in many cases is a real question "luck."



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