Trading strategy: how to tell the difference between normal, luck and talent?

(news-trading-bourse-investir-conseils-marches)

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95% | In finance, a result is significant with a confidence level of 95%.
Whenever the Captain falleces or articles talking about trading strategies, two things clearly exasperated: (1) the lack of notion of abnormal return and risk level of each strategy, and (2) the lack of information regarding the number of tested strategies presented in parallel with the winning strategy.

For example, suppose that a certain Mr. X comes to you by showing overshared years, its trading strategy provides a yield of 25% per year. The heart on the hand, Mr X offers to give him your money and place for 5 years without asking for a small fixed percentage of management fees. But before entrusting your money, you must ask yourself two question: (1) how much is the abnormal return, so adjusted level risk, this trading strategy, and (2) how strategies were tested to estimate the probability that this return is not simply due to chance.

Who has the most "talent" between a manager having achieved 5% return last year and another who had a yield of 7% Only with these data, the only possible correct answer is, "we know nothing everything." Indeed, to compare the performance of two trading strategies should always take into account the level of risk associated with each strategy, which depends on the type of the Portfolio Shares (assuming for simplicity a portfolio 100% share market). For example, if the manager has achieved 5% did so with only the shares of "good father" while the manager having achieved 7% had only in its portfolio of the banking sector, then it is there a safe bet that adjusted returns 5% level of risk manager is actually the best.

Second question. A manager has achieved a performance of 5% for a year, then 2% the following year, and with an overall risk level of the portfolio constant. What year was the best? Suspense ... Well ditto "we know nothing". To compare the performance of a portfolio of the same level of risk over time, it is necessary to know the performance of the market as a whole during the same period. To put it more simply, a yield of 5% if the market ( eg CAC40) increased by 20% over the year, it’s pretty bad; get 2% return if the market collapsed by 10%, that’s pretty good.

The abnormal return of a stock can be written in the form: "Abnormal Yield = Actual Yield - Normal Yield." The Current Performance of an action is what you see on TV / newspaper: eg the action Agricole increased 12.8% year on year. By cons, determine the "Normal Yield" is much more complex than it seems. For this, the simplest model is to simply take the evolution of an equity index eg the CAC40. If the year the CAC 40 rose by 10%, then the abnormal return (also called ‘alpha’ - see about "Seeking Alpha lost: abnormal return and Jensen alpha" [http://www.captaineconomics.fr/-alpha-jensen-mesure-risque-rendement-anormal] ) Crédit Agricole was + 2.8%. Good in this very simple case, you fix at least the changing market and you can already replace 3/4 of those interviewed on BFM Business who often forget that notion. Finally strangely, they forget that a little when it suits them: when the market is bearish, poor raw performance is justified by the negative market developments; by cons when financial markets are bullish, total blackout on the concept of abnormal return and focus on raw performance numbers. The beauty of selective memory!

Well consider only the change in the market is pretty bad because no notion of risk is present. To introduce the risk of abnormal returns in our model, we use what we call the market model. Un risk level is defined for each action, according to its volatility, denoted β: to make very simple, if a company has a beta equal to 1.5, then the average when the CAC40 increases by 1 % share of the company increased by 1.5% (see "How to calculate a beta coefficient in finance (for near zero)" [http://www.captaineconomics.fr/-calcul-formule-coefficient-beta-finance] for more). More β increases, an action is considered risky. If we take our previous example, with an increase of the share Agricole 12.8%, an increase of 10% and CAC40 β coefficient equal to 1.5, in this case, the normal Performance Credit agriculture is 15% (10% * 1.5) and therefore the abnormal return (alpha) is -2.2% (Alpha = Normal Yield - Yield Current). It’s all am less nice to have!

In the academic literature, other risk factors are introduced (in + the volatility in the market model), depending on the company size (SMB small-minus-big factor Fama-French), the action type value / growth (HML factor high-minus-low Fama-French) and the momentum effect (MOM factor Carhart). It becomes a bit more complex, but the idea is the same: to be as specific as possible on the calculation of normal return, to avoid errors when calculating the abnormal return and alpha.

Now, let’s go a little on probabilities (come on, we are well well ...), by taking an example published in the article "Evaluating Trading Strategies" (https://faculty.fuqua.duke.edu/~charvey/Research/Published_Papers/P116_Evaluating_trading_strategies.pdf) (The Journal of Portfolio Management, 2014) by Harvey and Liu. Assume that each week you receive a newsletter advising you to buy or sell the stock of a company. It is now 10 weeks you receive this newsletter, and for 10 weeks, the advice is always good! Suddenly you receive a call from the head of the newsletter, which offers you to invest in its bottom. Given the "track record", you have a good chance to trust him. But in reality, the head of the
newsletter has no particular talent, he just plays on the probabilities and large numbers. Suppose that initially the manager sends to 50,000 people a buy recommendation on action X, and 50,000 people a sell recommendation on this same action X. At the end of the first week, it will inevitably sent Good advice to 50,000 people. The following week it is the same, but only by sending an email to 50,000 people who received the investment good advice first. Same, it will remain 25,000 people at the end of the second week. And so on, until week 10, when in the end it will remain 97 people on the 100,000 start. Although the probability of winning 10 consecutive investments is very low (about 0.01%, the same probability of winning than 10 times a coin), simply multiply it by many for it to work at least some time. It's almost as if you could play 50,000 times a coin; surely there was a time when you will win 10 times consecutively.

**By testing tens of thousands of trading strategies, you'll always find one that works especially well.** And now, with the computing power and the avalanche of big-data data (by adding a layer Machine Learning / Algo Genetics over on principle), it is a relatively simple thing to do. This does not require any “talent” investor, but simply a “talent” computer to code algorithms. The main problem is that often, whether to publish an academic paper or when a manager has a new strategy, 100,000 strategies that have been tested to arrive at LA winning strategy is often overlooked. It’s not me who says (although I think very hard ...), but the authors of the paper cited above:

"Most of the empirical research in finance, whether published in academic journals or put into producing as an active trading strategy by an investment manager, is Likely false. Second, this Implies That half the financial products (Promising outperformance ou by letter) companies are selling to Customers are false."

You will say, “but who the authors say that”? A student sloppy memory in two weeks? Not really! One of the authors, Campbell Harvey, rightly published in numerous academic journals from the top level (Journal of Finance, Review of Financial Studies, Journal of Financial Economics ... the day the Captain ‘will be publish’ in One of these papers is open Champony for everyone) and part of the top 150 global economists (and yes, there is a "ranking" of economists, based on the number of publications / citations - source!: "IDEAS Repec - Top 10% Authors" [https://ideas.repec.org/top/top.person.all.html]). And what is interesting is that Campbell Harvey tackle himself, explaining that its publications are not necessarily free from reproach.

"This critical aussi Applies to much of the academic literature in empirical finance - including Many papers by one of the authors of this article (Harvey)" - Evaluating Trading Strategies, The Journal of Portfolio Management (2014)

**But how to solve this problem?** There are two main solutions: (1) perform tests out-of-sample or in real time, to see if LA winning strategy identified on a given sample is always wins out of the sample and (2) be more demanding the validation threshold of a strategy. The first solution requires either time to implement the strategy in the future in real time, much data to cut the sample to estimate in-sample and testing out-of-sample (not completely solve the problem, if you really want to fake your datas on an out-of-sample known sample, you will get there anyway). The second solution certainly implies a reduction of Type I errors (false discovery), but also leads to Type II errors (actually refuse a winning strategy). In physics, a result is significant with a 99.99994% confidence level (5 differences kinds: the sigma below); finance, the level of trust usually used is 95% (2 standard deviations). And the confidence level, the lower the risk of false discovery is high (the discovery is actually a simple random phenomenon).
Conclusion: Between "look I am the strongest, I had a yield of 15% last year" and "considering a model with 3-Fama-French factors for estimating the normal return and taking into account the diversity of strategies tested, I have the honor to inform you that my 15% strategy is actually totally zero ", there has a nice gap. Unfortunately, in the world of financial managers and advisers, the first explanation is more successful (and also because relatively few people really understand the second explanation, except now of course). In the world of academic research, the question of the normal performance model is often treated properly (not publish a paper without introducing a normal yield model roughly consistent). For cons, the second question on the number of tested strategies and validity out-of-sample / real-time winning strategies is still too undeveloped (or even deliberately omitted to publish a history paper with good results). So finish with stunning Churchill quote: "I believe in statistics when I myself have falsified." Not crazy Winston!

Originally published on the Captain Economics blog (http://www.captaineconomics.fr/-strategie-trading-chance-hasard-probabilite-talent)
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