How to evaluate the performance of a fund?

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Investors are desperately looking for talented fund managers. The best manager may not be the one at the of top of a return-sorted table, but measuring performance is much more complex. In this short-guide, we present the state-of-the-art approach and talk about some of the practical issues.

Why the manager of a fund with the highest-return may not be the most talented one?

	2015	2016	2017	2018	2019
Fund A	-15%	15%	60%	-5%	45%
Fund B	9%	10%	12%	18%	21%
Inflation	8%	8%	12%	20%	12%

Table 1: Which fund manager is more talented A or B?

The modern way of thinking is: the performance of a fund manager can be explained by risk premiums [1], by professional skills and by luck. In principal, the fund manager should only be compensated according to her professional skills. [2]

[1] The extra return for taking a risk is called a premium.

[2] We should have access to cheap rule-based (passive) funds exposed to risk premiums.

Risk Premiums

From the investment theory, we expect (on the long run) higher return if we take higher risk. For example, investing in stocks is riskier than investing in bonds. When we buy a bond, we know exactly the amount of money we will receive if we keep until the end of the contract. [3] The return of a stock however depends on future dividend payments and the future market price of that particular share, both are unknown today. We observe (as predicted in the theory) that on-average the long-run return of stocks is higher compared to bonds, see Figure 1. Therefore, it is not fair to compare a stock fund manager with a bond fund manager.

[3] This does not mean that bonds are without risk. If for example, during this period the inflation rises, you may end up with a negative real return. Or even worse the company/country may announce a default.

Similarly, not all stocks are the same in terms of risk. For example, we can assume that small-cap stocks are riskier than large-cap stocks. [4] Indeed, we observe that small-cap stocks outperform large-cap stocks, see Figure 2. For this reason, it is not fair to compare a fund manager investing mostly in small-cap stocks to another fund manager investing in mostly in large-cap stocks.

[4] The default risk of a small company is higher than a big company?

Size is just one of the risk factors studied in the literature. Value, momentum and quality are well-known and well-studied factors. See Figure 3 for the historical evolution of risk factors.

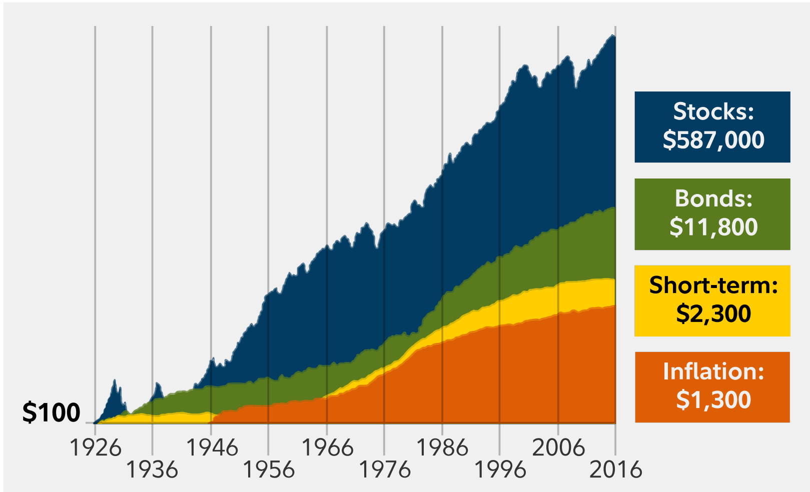


Figure 1: Log-returns of stocks and bonds on the long-run. Source: Fidelity

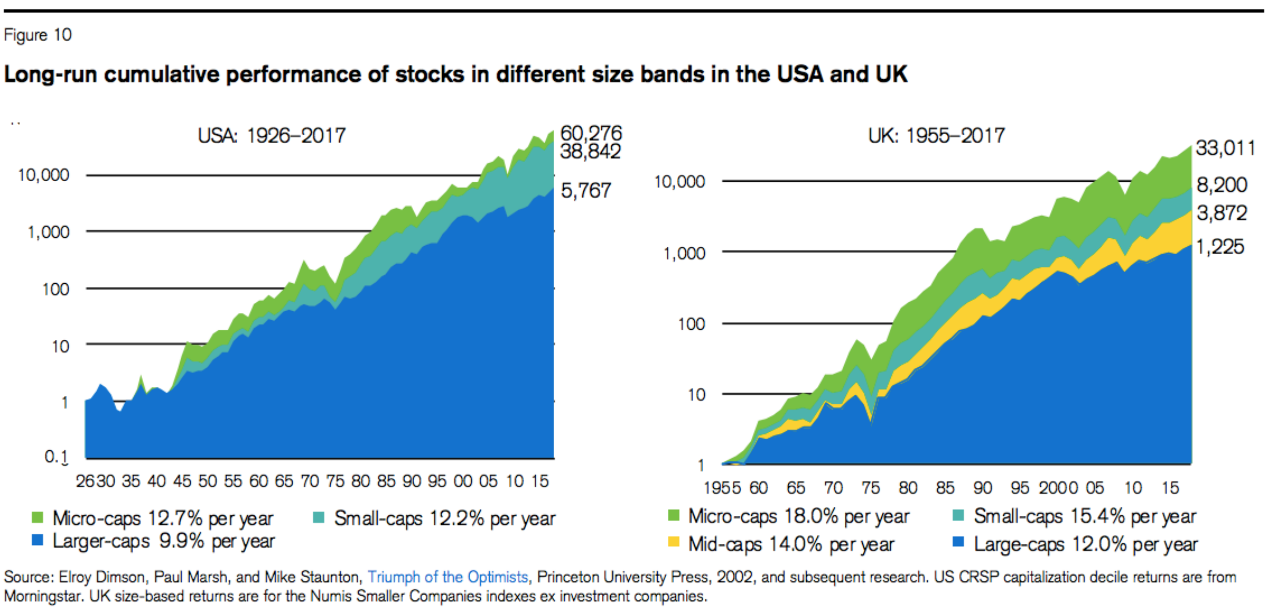
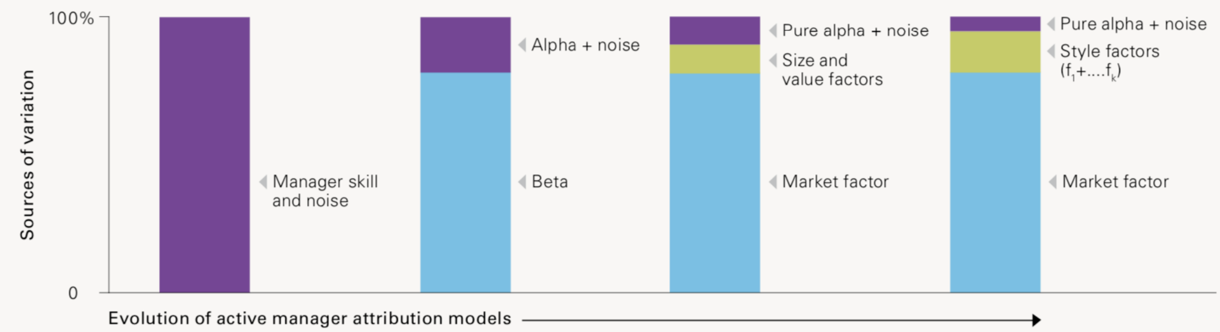


Figure 2: Log-returns on the long run. Source: seekingalpha



Notes: This is a hypothetical scenario for illustrative purposes only. It does not represent any particular equity investment. "Noise" refers to the fact that through any period, some degree of randomness always affects results versus the broad equity market. The degree of influence varies and can be difficult to statistically distinguish from alpha without extensive data.

Source: Vanguard.

Figure 3: At the beginning, all the return variations were attributed to the manager. Then we noticed that the market is playing hue role. In 90s Fama and French introduced 3-factor model. Currently the state-of-the-art approach is to build multi-factor model.

Practical Issues

LUCK How are we sure that the performance attributed to manager's skill is real and not just by luck? Compare with random timing, random stock picking. What is the probability of seeing such a return?

CASH FLOWS Since the fund manager cannot control cash-flows of the fund, the performance should ignore them. In other words, she should not be punished or rewarded by the outcomes of the cash-flow(s). First, we divide the fund into shares. The share-price is the net-asset-value of the fund divided by number of shares. Secondly, share-money exchanges are only executed when the markets are closed. We then calculate the return of a share-price.

FEES The share-price is reflects the performance after all fees (including management) are deduced. What if there is a positive (or a negative) change about the fees. We should adjust our alpha predictions according to these changes, but how?

CHANGE OF MANAGER We relate generated alpha to the manager but what if there is a change of manager?

CHANGE OF STRATEGY In theory, a fund should be established with a strategy in mind. If we are going to change it we should close the fund and open a new one. But in practice, we may observe strategy changes during the lifetime of a fund sometimes unnoticed sometimes declared through official documents.