PERSPECTIVES

False Negatives and False Positives

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One of the things that makes the COVID-19 pandemic so challenging is false negatives. Early in the pandemic, it was clear that the consequences of infection are more severe for older people, a group my wife and I were surprised to discover includes us. We also learned that most infected people do not show symptoms until two to five days after they are contagious. Because anyone we encountered might be contagious—despite feeling and appearing perfectly healthy—and because the consequences of infection could be so great, my wife and I isolated ourselves from others for about a year. In other words, from the start of the pandemic until we were vaccinated, we avoided false negatives by acting as if everyone else was positive.

The challenge for investors choosing a portfolio strategy is the reverse. Many patterns that look important in realized returns just happen by chance, telling us nothing about future investment opportunities. Although less extreme than the risk of false negatives in the pandemic, false positives in realized returns can have a big impact on your financial health—lowering your expected return while they cause you to pay more expenses and take more risk. As in the pandemic, the solution is to change the default. Assume no return pattern or factor is real until you have compelling reasons to believe it is.

What reasons would be compelling? First, strong statistical evidence, with persistent and consistent differences in average returns across time, markets, assets, and portfolios. Ideally, much of the evidence is out of sample, not just a repackaging of the returns used to identify the pattern or factor.

Evidence of excessive search should undermine your confidence in the pattern. Remember, academics and money managers have strong incentives to identify new patterns. Be suspicious when they use strange definitions or unusual combinations of variables to isolate the pattern, especially if the return premium weakens with a more standard approach.

Strong economic logic is the most important reason to believe a return pattern will persist. Ideally, a model predicts a pattern before it is observed in the data. Usually, however, it's data first, then the story, so be skeptical. If it looks like the model was cooked up to explain the pattern, it probably was. Don't believe the story unless the model is truly compelling.

The value effect illustrates these ideas. The first paper Gene Fama and I wrote on the value effect was published in 1992 and used US data from July 1963 to June 1991. We find that book to market equity and earnings to price ratios have a strong positive relation with future stock returns, and average returns increase systematically across portfolios when we sort on these ratios. Fama and I worked with Jim Davis on a paper that finds a similar relation between book to market and average stock returns in the US from 1926 to 1963. We and other researchers also find a strong value effect in developed markets outside the US and in emerging markets. Finally, although the last 10 or 15 years have not been kind to value in the US, in the full out-of-sample period from 1991 to 2020, value outperforms growth by 1%. Reinforcing this broad evidence, other researchers have found a value effect in bonds, commodities, and currencies.

Is there excessive search? Gene Fama and I have stuck with the measure of value we started with in 1991, the ratio of book equity to market equity. The only changes we have made are small adjustments to book equity to accommodate revisions in the accounting rules firms must follow. Other researchers use other definitions, but almost all use some sensible measure of a fundamental, such as earnings or cash flow, divided by price. I do wonder, however, whether a few more-recent changes researchers use are driven more by the returns they produce in-sample than by compelling economic arguments.

The economic logic for the value effect is strong. The driver is price. Stocks with high long-term expected returns or, equivalently, high long-term discount rates must have a low price relative to their expected cash flows. If fundamentals like book equity and earnings proxy for expected cash flows, value stocks, with high ratios of fundamental to price, are likely to have higher average returns than growth stocks, with low fundamental to price.

In short, the value effect is on a solid foundation, with much long-term empirical evidence, robust and complementary measures of value vs. growth, and a simple economic story. Be skeptical of patterns that lack this foundation. Presume they happened by chance, and don't change your portfolio until you have compelling reasons to believe a pattern in past returns predicts future returns.