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Anomaly or Possible Risk Factor? Simple-To-Use Tests

Based on BFI Working Paper 2022-43, “[Anomaly or Possible Risk Factor? Simple-To-Use Tests](#),” by Benjamin Holcblat, University of Luxembourg; Abraham Lioui, EDHEC Business School; and Michael Weber, Chicago Booth

Contrary to basic asset pricing theory, this new work finds that risk alone cannot explain a large majority of variables predicting differences in expected returns.

Basic asset pricing theory predicts that high expected returns are a compensation for risk. For anyone who has managed their investment portfolio, this makes intuitive sense. There are risk factors to consider with bonds (duration and default risk, for example), equities (valuation and momentum, to name just two), as well as macroeconomic risk factors with broad influence (interest rates, inflation, and many others).

However, can risk alone explain the difference in expected returns generated by a given factor? Can high expected returns also encompass anomalies due to institutional or informational frictions, or behavioral biases like loss aversion, overconfidence, mental accounting errors, and so on? The authors address these questions through novel, simple-to-use tests that shed light on the economic content of factors and assess whether risk alone can explain the difference in expected returns generated by a given factor.

Broadly described, researchers typically determine risk factors by subtracting low-return portfolios from high-return portfolios, since each represent a level of risk; likewise, portfolios mimic a long-short strategy. (Readers are encouraged to visit the working paper for a more detailed description). Factors have a long leg with high expected returns and a short leg with low expected returns, with higher expected returns of the long leg corresponding to higher risk. However, risk alone cannot always explain the spread in expected returns between the two legs of a given factor, and the authors call this phenomenon an “anomaly.”

The authors develop simple-to-use tests to check whether every possible risk-averse individual strictly prefers the long-leg returns over the short-leg returns. If this is the case, even an individual with very high level of risk aversion would prefer the long leg, so risk cannot explain the difference in expected returns between the two legs. An anomaly exists.

Conversely, if a risk-averse individual prefers to forego the higher return of the long leg in exchange for the lower return of the short leg, then risk alone can explain the factor's expected return, i.e., the difference in expected returns between the long and the short leg. Thus, in accordance with basic asset pricing theory, the factor's expected return is a possible compensation for the higher risk of the long leg.

The paper's main empirical finding indicates that most factors are anomalies rather than possible risk factors. They come to this conclusion by applying their tests to a standard data set of more than 200 potential factors to reveal that more than 70% of factors are anomalies. This finding is contrary to the literature, which holds that such factors as value, momentum, operating profitability, investment, and momentum are risk factors.

By offering methodological improvements to understanding risk factors and anomalies, this paper challenges existing theory. However, what sounds like a mere academic exercise has practical implications. For example, if a factor corresponded to risk, an individual would likely try to limit her exposure to this factor. Conversely, if a factor corresponded to an anomaly, an individual would likely want to load on it—if possible—and thus earn a higher expected return. Likewise, for investment decisions, firms would likely account for a risk factor to value investment projects, but not necessarily for an anomaly. More generally, unlike an anomaly, a risk factor can be used for discounting, which is key both in asset pricing and for real investment decisions.

READ THE WORKING PAPER

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bfi.uchicago.edu/working-paper/202243

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