Overview

Quantitative investing, which deploys machine learning and other algorithms, now more or less dominates financial markets. In this environment, it’s useful to step back and compare the performance and risk exposures of discretionary and systematic hedge fund managers. More than a third of hedge funds are systematic and manage just over a quarter of total hedge fund assets under management. Many allocators to hedge funds, large and small alike, avoid allocating to systematic funds, either partially or entirely, believing them to be difficult to understand, to offer less transparency, and to deliver worse performance due to the use of data from the past. These reasons seem to be consistent with “algorithm aversion”—a distrust of systems.

In Man vs. Machine: Comparing Discretionary and Systematic Hedge Fund Performance, published in the Summer 2017 issue of The Journal of Portfolio Management, Campbell R. Harvey, Sandy Rattray, Andrew Sinclair, and Otto van Hemert compare the past performance of systematic funds with their discretionary counterparts. They show that, after adjusting for volatility and factor exposures, the lack of confidence in systematic funds is not justified.
Key Definitions

Discretionary managers
Hedge funds or other types of investment managers that rely on human skills to make day-to-day investment decisions.

Quantitative investment
Often confused with systematic trading; discretionary managers may also rely heavily on quantitative tools to identify target investments.

Systematic managers
Hedge fund or other types of investment managers that use rules-based strategies that are implemented by a computer, with little or no daily human intervention.

Practical Applications

- **Performance is similar.** Systematic funds show marginally better historical performance in macro and similar performance in equity strategies, after adjusting for volatility and factor exposures.
- **Discretionary funds tend to rely more on risk factors**—particularly discretionary equity funds.
- **“Quant” is not a precise descriptor.** Both discretionary and systematic managers use quant techniques.

Discussion

“Our research was driven by a number of observations in the market,” says Sandy Rattray, CIO of Man Group in London. Some clients, he says, were nervous about systematic hedge fund strategies and would comment that they’d never buy them, and the concept of “algorithm aversion” had been acknowledged within published research. The four authors also noted that there were many more discretionary funds than systematic ones. However, clients—despite their hesitation—were growing more curious, and there was little research comparing discretionary outcome with systematic outcomes. “One client in particular asked what the particular advantages were of one over the other, so we set out to find the answer,” Rattray says.

The article’s analysis covers more than 9,000 macro and equity funds from the Hedge Fund Research (HFR) database over the period 1996–2014, and funds are classified as either discretionary (human selection of assets and positions) or systematic (algorithmic selection of assets and positions), based on algorithmic text analysis of the fund descriptions.

HFR classification made it relatively simple to select the two types of macro funds. However, none of the equity substrategy names contains the word “systematic” or “discretionary,” and the HFR descriptions do not specify clearly whether algorithms or humans make the decisions. Some equity hedge substrategy names and descriptions contain the word “quantitative,” but most hedge funds, discretionary and systematic alike, employ some form of quantitative analysis. “That’s why our classifications are ‘systematic’ versus ‘discretionary,’ and not ‘quant’ versus ‘discretionary,’” says Campbell Harvey, professor of finance at Duke University in Durham, North Carolina, and an investment strategy adviser at Man Group in London. “Funny that the word “quant” appears more often in descriptions of discretionary funds than in descriptions of systematic funds,”

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he says, noting that they hoped their research could better explain the differences between quantitative and discretionary. “This alone shows that the answer isn’t so clear-cut.” Ultimately, they relied on the terms “algorithm,” “approx.,” “computer,” “model,” “statistical,” and “system” to distinguish discretionary from systematic funds.

The authors’ results show that an aversion to systematic managers may be unjustified. Some investors suggest that systematic strategies perform worse, have returns more easily explained by risk factors, and are more homogeneous than their discretionary counterparts. “These are all things that we test, and our data suggest that these beliefs are incorrect,” says Otto van Hemert, head of macro research at Man AHL.

Annualized returns for the four styles (systematic macro, systematic equity, discretionary macro, and discretionary equity) vary from 2.9% to 5.0%. Based on returns that are not adjusted for factor exposures, systematic macro funds outperform discretionary macro funds, whereas the reverse is true for equity funds. The total amount of returns attributable to factors is higher for discretionary than for systematic managers. For macro managers, both discretionary and systematic have a long exposure to the bond market factor and a volatility factor. Discretionary managers also have exposure to the equity market and FX carry factors. For discretionary equity managers, more of the returns can be attributed to factor exposures compared with their systematic equity counterparts. However, after adjusting for volatility, the two approaches offer quite similar performance.

Discretionary macro funds had an annualized return of 1.6%, compared to 4.9% for systematic macro. However, the systematic macro style has more than double the volatility—10.9% versus 5.1%—and when adjusted for portfolio volatility there is little difference in returns, although systematic does marginally better. Discretionary equity managers have delivered higher raw returns than systematic equity managers. Discretionary equity funds had a 1.2% risk-adjusted return, whereas the systematic funds had 1.1%. In contrast to macro, the volatilities are similar, with discretionary having 4.8% volatility and systematic having 3.2% volatility. Again, adjusting for volatility, the performance of these two approaches in the equity category is similar.

“Our results show that an aversion to systematic managers, as displayed by some allocators, and in line with a more general ‘algorithm aversion’ phenomenon, may be unjustified.”

—Campbell R. Harvey, Sandy Rattray, Andrew Sinclair, and Otto van Hemert
The authors also analyzed the dispersion of manager returns. “We found that discretionary and systematic managers have similar levels of performance spread between top- and bottom-quartile managers in each category,” says Harvey. The dispersion of Sharpe and appraisal ratios across funds within a hedge fund style is similar for systematic and discretionary funds. This means that the common investor assumption that systematic funds are more homogeneous does not appear to stand up to scrutiny. So, in addition to style selection, fund selection seems to be just as important in each category.

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Sandy joined Man Group in 2007, after 15 years at Goldman Sachs where he was a managing director in charge of their Fundamental Strategy group. He also ran Equity Derivatives Research at Goldman Sachs in London and New York, where he worked with many hedge fund and institutional investors on quantitative strategies and hedging. Sandy is a co-inventor of the VIX index and has served on the FTSE UK, FTSE World, and Russell index committees. He sits on the MSCI Editorial Advisory Board and the Jesus College Cambridge investment committee, and he is a founding patron of the London Cycling Campaign.

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