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IN PRACTICE

Is Sector Neutrality in Factor Investing a Mistake? (In Practice)

Member Companion Feature Delivering Digestible and Practical Applications of Timely Research

Cathy Scott

The average long-only factor investor should *not* maintain industry weights equal to their benchmarks, a practice known as sector neutralization, according to research in the *Financial Analysts Journal*. That advice goes against the grain in factor-investing circles, where investors generally assume that both long-short and long-only factor portfolios benefit from hedging out sector bets.

That conventional assumption is supported by past studies that demonstrate that the firm-specific component of stock characteristics is on average a stronger predictor of returns than the sector component. The authors of "Is Sector Neutrality in Factor Investing a Mistake?"¹ (Sina Ehsani, Campbell R. Harvey, and Feifei Li) confirm these previous findings but shine new light on their divergent implications for long-short versus long-only investors.

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This *In Practice* brief is a CFA Institute member companion feature delivering digestible practical applications of the research. The brief is based on interviews with coauthors Sina Ehsani and Cam Harvey, both members of the research team at Research Affiliates, LLC. "We always start with data. We looked at the data and noticed a systematic difference between the two strategies: Long-short and long-only produced opposite results for every factor. We were surprised to see this discrepancy, and the next step was to form an analytical framework that can explain the conflicting results," Ehsani states.

¹ Sina Ehsani, Campbell R. Harvey, and Feifei Li, "Is Sector Neutrality in Factor Investing a Mistake?," *Financial Analysts Journal* (published online 15 May 2023). www.cfainstitute.org/research/financial-analysts-journal/2023/2196931.

Harvey adds, "Conventionally, researchers measure the strength of a signal by assessing expected returns to a long-short portfolio sorted on the signal. In contrast, our study uses the classic mean-variance framework to study the problem."

The market-wide predictive power of factors, such as size, book-to-market ratio, and momentum, may be attributed to their firm-specific component (within sector), their industry component (across sector), or both ("as is"). The authors' research confirms that the across-sector component is frequently redundant in long-short portfolios and therefore should likely be hedged out. The article adds to the literature by demonstrating the opposite is true for long-only portfolios.

The article answers four important questions factor investors ask after they choose the particular factors they wish to pursue:

- Should the factors be sector neutralized?
- If sector neutralization is chosen, which sector classification is optimal?
- Is the decision to sector neutralize dependent on the particular factors?
- Are the answers different for long-only versus long-short investors?

Notably, the research provides a metric for active investors to forecast sector neutralization's contribution to factor portfolios' performance.

The Contribution of Within-, Across-, and "As Is" Stock Components

The authors looked at aggregate values of Sharpe ratios and correlation coefficients using data from 1963 to 2020. They found that Sharpe ratios of long-only portfolios were higher in 78% of their trials when the portfolios were not sector neutralized. Avoiding sector neutralization produced better Sharpe ratios for portfolios of long-short factors in only 20% of their trials.

Long-only large-cap value portfolios experienced the largest reduction in Sharpe ratios when they were sector neutralized. The same holds true for long-only multi-factor portfolios, which were the largest beneficiaries of not hedging out sector exposure.



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Ehsani explains, "The reason is the contribution to returns from cross-sector bets on the long-short portfolio is much smaller than the contribution from within-sector bets. For the long-only portfolio, the Sharpe ratio of the across-sector bets is as high as that from the within-sector bets. So, most managers are better off taking active sector bets rather than tracking their benchmarks."

Managers' concerns about tracking error are motivating the authors' next research related to sector neutralization: its impact on the information ratio. "If sector neutrality harms the Sharpe ratio and alpha of a long-only portfolio, why do managers continue to adopt it? We believe the answer lies in the relationship between tracking error and the information ratio. Is it possible to make a decision that enhances the information ratio while impairing the other aspects of a portfolio's characteristics?" Ehsani asks.

The authors currently are pursuing these questions, although no plans for publication have been made. "This was my first experience with the *Financial Analysts Journal*. It was a pleasant surprise, especially the level of constructive feedback from the reviewers and the editors, who actively engaged in three rounds of revision," Ehsani states.

Bios



Sina Ehsani is an assistant professor of finance at Northern Illinois University and a research consultant for Research Affiliates, LLC. He is the recipient of the *Journal of Finance's* 2022 DFA Distinguished Paper Prize, the Q Group's 2019 Jack Treynor Prize, and the *Review of Asset Pricing's* 2018 Rising Scholar Award.



Campbell R. Harvey is professor of finance at Duke University and a research associate of the National Bureau of Economic Research. He is director of research at Research Affiliates, LLC. He served as president of the American Finance Association in 2016 and as editor of the *Journal of Finance* from 2006 to 2012. He has received nine Graham and Dodd Awards from CFA Institute for excellence in financial writing in the *Financial Analysts Journal*. He is a recipient of the *Journal of Portfolio Management's* Best Article Award for 2015, 2016, 2021, and 2022. His book *DeFi and the Future of Finance* was recently published by John Wiley & Sons.



Feifei Li works for Kavout Algo Financial, where she and her partners apply advanced machine learning technology to decode the financial markets. Previously, she served as chief investment officer of equities at Research Affiliates, leading the research and strategy design that supported the firm's systematic active portfolios and smart beta indices. She also led the firm's efforts in asset allocation, alternative risk premiums, and investment management.

She has two decades of investment experience. She was named an ETF Rising Star, was included in the Top 25 Venerated Voices by Authors rankings from Advisor Perspectives, and has won numerous awards for her publications. She taught investment classes at Caltech and the University of California, Irvine, and has given presentations at many academic and practitioner conferences. She has been interviewed by *Bloomberg Markets: The Close*, Yahoo Finance, and *Barron's*, among others.

She earned a BA from the Tsinghua University School of Economics and Management and a PhD in finance from the University of California, Los Angeles.

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