Strengthening Capital Markets

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IN PRACTICE

Earning Alpha by Avoiding the Index Rebalancing Crowd (In Practice)

Member Companion Feature Delivering Digestible and Practical Applications of Timely Research

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Conventional wisdom holds that near-zero tracking error equates to near-zero trading costs. This presumption is a key selling point for traditional passive index funds following capitalization-weighted indices. But research in the *Financial Analysts Journal* demonstrates that index rebalancing carries significant hidden trading costs borne by investors.

A team from Research Affiliates (Robert D. Arnott, Christopher Brightman, CFA, Vitali Kalesnik, and Lillian Wu) explored what they call "avoidable" return drag (hidden trading costs) arising from security selection. The researchers propose alternative cap-weighted index construction rules that add up to 46 bps a year to performance.

This *In Practice* brief is a member companion feature delivering digestible practical applications of their article "Earning Alpha by Avoiding the Index Rebalancing Crowd"[1] and is based on an interview with lead author Rob Arnott, a partner and chairman at Research Affiliates.

Traditional cap-weighted indices buy high-multiple stocks and sell low-multiple stocks when they rebalance, and price swings following change announcements exacerbate this pattern, the authors demonstrate. This research investigates the subsequent reversals—where discretionary deletions beat additions by a large margin on average in the year after a change is made.

"The most valuable new information here is that index publishers and the funds that follow them can do much better by their customers if they change the way they decide which stocks to add or drop," Arnott states.

The research findings informed the construction of Research Affiliates Capitalization-Weighted Index (RACWI). "Our methodology has a patent pending, but there's no patent pending on choosing another methodology that also won't automatically chase frothy highflyers," he quips.

[1] Robert D. Arnott, Christopher Brightman, CFA, Vitali Kalesnik, and Lillian Wu, "Earning Alpha by Avoiding the Index Rebalancing Crowd," *Financial Analysts Journal* 79 (Second Quarter 2023): 76–97. www.cfainstitute.org/research/financial-analysts-journal/2023/2173506.

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The "Avoidable" Problem with Cap-Weighted Indices

Stocks that are added to traditional cap-weighted indices are stocks that have recently soared and are trading at large premiums to market multiples, Arnott says. "They're adding stocks that are trading at lofty multiples with tailwinds of momentum and dropping stocks that have been in freefall at deep discounts with horrible momentum."

Are the additions better companies? "Of course. They're typically believed to be well run, fast growing, dominant in their industry, or up-and-comers in their industry."

And the companies that are dropped? "Of course, they are companies that have either bad product or bad management, or a shrinking book of business, or whatever. But you don't have to tie the addition/deletion decision to the price or market cap."

In their *Financial Analysts Journal* article, the Research Affiliates team investigated the performance of the S&P 500 Index from October 1989 through June 2021 and found that discretionary deletions beat additions by an average of 22% in the 12 months following the rebalancing. They chose October 1989 because it is the month in which the S&P Index Committee began to preannounce changes to the index in advance of the reconstruction.

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Before October 1989, index changes were made public after the market close on the day the index changed—at the market's closing price on that day. Before February 2017, changes to the index were made at the market's closing price on the effective change date. Since February 2017, changes to index holdings have been made at the closing price the day before the effective date. Either way, the authors note, the "trade date" is the day the additions/deletions experience peak volume because most index fund managers trade at or near the market close to avoid tracking error.

Looking at pre-announcement performance after October 1989, the authors found an average performance gap between additions and deletions of 70.6% on average over the 12 months prior to the announcement. During that 12-month period, they found that additions outperformed the market by 41.5% and deletions underperformed by 29.1%.

Additions appreciated by another 5% on average between the announcement date and trade date, and deletions underperformed by another 7.2% during the same period, resulting in a performance gap of 12.2%. The gap widened to 15.8% when a 2.4% average performance spread on the day before the announcement and a 1.2% spread the day after the trade date were added.

One year after the trade date, the tables turned, with deletions outperforming additions by more than 22%, mostly because of the outperformance of deletions, Arnott explains. He cites **announcement effect**, **liquidity effect**, and **mean-reversion effect** as reasons for the 12-month post index reconstruction performance. The Russell 1000 and Russell 3000 are similarly impacted but to a lesser degree, he notes.

Research Approach

The authors simulated four indices based on the S&P 500, progressively adding changes to each index to test the effect of each change. The simulated indices are:

- a replication of the S&P 500,
- a replication that changes the index on the announcement date,
- a replication that changes the index on the day after the announcement date, and
- a replication that delays trades by 3 or 12 months (after most of the mean reversion in price).

What they uncovered is that delaying trades by 3 months led to 13 bps outperformance compared with the replicated S&P 500, and delaying trades by 12 months led to 23 bps outperformance. "This simply shows that if you put Post-it notes on the fridge when the S&P 500 makes a change, and you do the trade 3 months or 12 months later, you do better," Arnott explains.

The simulated index that trades on the day after the announcement resulted in 12 bps of outperformance relative to the replicated S&P 500, albeit with 29 bps of tracking error.

Alternative 500-Stock Universes

The authors then explore what happens if they chose a different portfolio of 500 stocks to cap weight. Two approaches they considered are:

- a portfolio of the top 500 stocks using five-year average market cap, so that a stock must be successful for a while before it's added, and
- a portfolio of the top 500 stocks by fundamental size, as measured by a company's macroeconomic footprint rather than its market value.

The Research Affiliates team used banding and seasoning techniques to reduce turnover to at or below that of the S&P 500. Banding requires a stock to be well above the 500th largest to be added and well under the 500th largest to be dropped; seasoning requires this to happen two years in a row. In the article, the authors detail the measures used to determine a company's fundamental economic size.

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They found that by constructing a 500-stock portfolio based on five-year-average market cap from October 1989 through June 2021, an investor would have outperformed the S&P 500 by 38 bps a year.

The 500-stock portfolio that was constructed using fundamental size outperformed the S&P 500 by 48 bps during the same period. In essence, this is a 500-stock fundamentals-based index, reweighted by market capitalization, Arnott notes. This portfolio held 380 stocks that overlapped with the S&P 500.

"We asked ourselves, 'Why not simply change the way we decide what stocks to put in the index?' If you use the size of the business based on fundamental measures of the size of the company—sales, profits, book value, dividends—you end up nearly a half percent a year better off."

He argues, "Are you introducing a little bit of a style tilt? Well, yes you are. But we would argue that the S&P methodology creates an unhelpful growth tilt."

Bios

Rob Arnott is founder and chairman of the board of Research Affiliates. Rob plays an active role in the firm's research, portfolio management, product innovation, business strategy, and client-facing activities. He is a member of the Investment Committee and the Executive Committee of the board. With Chris Brightman, he is co-portfolio manager on the PIMCO All Asset and All Asset All Authority funds and the PIMCO RAE™ funds.

Over his career, Rob has endeavored to bridge the worlds of academic theorists and financial markets, challenging conventional wisdom and searching for solutions that add value for investors. He has pioneered unconventional portfolio strategies that are now widely applied, including tactical asset allocation, global tactical asset allocation, tax-advantaged equity management, and the Fundamental Index™ approach to investing.

Rob has published more than 150 articles in such publications as the *Journal of Portfolio Management*, *Harvard Business Review*, and *Financial Analysts Journal*, for which he served as executive editor from 2002 through 2006. Rob has received eight Graham and Dodd Scrolls and four Bernstein Fabozzi/Jacobs Levy awards. He is co-author of *The Fundamental Index: A Better Way to Invest* (Wiley 2008).

Christopher Brightman is CEO and chief investment officer (CIO) at Research Affiliates. As CEO, he establishes the firm's business strategy and policies to execute on its mission to be a leading source of insights and products transforming the global investment community for the benefit of investors. As CIO, Chris leads the investment teams and supervises research and development activities, provision of index strategies, and management of client portfolios. Chris joined Research Affiliates in 2010 as the director of strategy and head of investment management, becoming CIO in 2014 and CEO in 2021.

With Rob Arnott, he is co-portfolio manager on the PIMCO All Asset and All Asset All Authority funds and the PIMCO RAE™ funds. Chris is also a member of the board of Research Affiliates. He has four decades of investment management experience in equities, fixed income, currency, and asset allocation. Chris has traded securities and derivatives, managed portfolios, supervised quantitative product development, and allocated assets to alternative investment strategies.

Vitali Kalesnik leads research and business strategy in Europe for Research Affiliates. He is a global leader in smart beta, factor investing, and asset allocation. Previously, Vitali led the firm's Equity Research team and continues to perform general equity-related research.

He has co-authored articles that have been recognized with four Graham and Dodd Scroll Awards, a William F. Sharpe Indexing Achievement Award, a Bernstein Fabozzi/Jacobs Levy Award, and a Graham and Dodd Top Award for "What Is Quality?" His research strengthens and expands Research Affiliates' products—in particular, RAFI™ Fundamental Index™ strategies—and supports the firm's global tactical asset allocation products.

Vitali earned his PhD in economics from the University of California, Los Angeles, where he was a winner of the UCLA Graduate Division Fellowship for 2001–2005. He speaks fluent English, Russian, and French. He can be reached at https://www.linkedin.com/in/kalesnik/.

Lillian Wu focuses on promoting the thought leadership of Research Affiliates. She contributes to the firm's publications, educational materials, and client presentations. She has co-authored a number of papers published in practitioner journals.

Prior to joining Research Affiliates, Lillian was a summer intern with the Quantitative Analytics Unit of the US Securities and Exchange Commission.

Lillian has a BA in economics from the University of California, Berkeley, and a Master of Financial Engineering from the Anderson School of Management at UCLA. She can be reached at https://www.linkedin.com/in/lillian-wu-5050611b/.

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