



Decarbonization Factors

Going with the flows on low-carbon strategies improves investor returns

Investors increasingly view climate change as an economically significant event, affecting performance now, as well as long-term. While a preponderance of scientific evidence links climate change to carbon emissions, there is a lack of quantitative research on investor behavior and low-carbon strategies. We set out to measure how institutional money, in aggregate, moves around low-carbon strategies and the effects on return profiles. Do flows contain information about the financial performance of low-carbon strategies?

To test this, we design and monitor the performance of six strategies in the US and Europe, which we call “decarbonization factors.” These regional strategies take long-short positions on lower carbon intensity firms, industries, and sectors within the respective industry, sector and market.

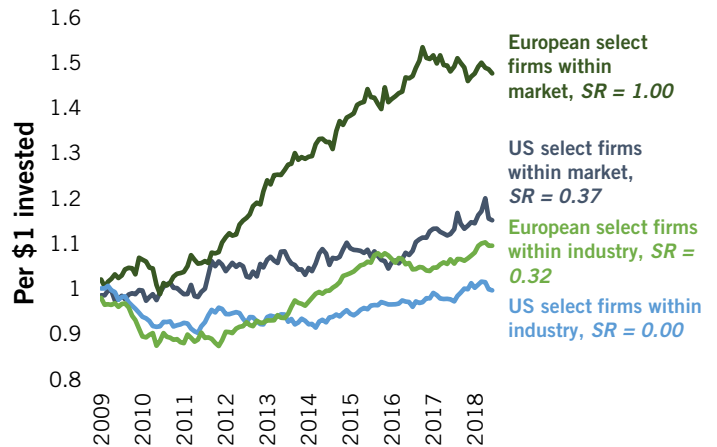
The chart illustrates the historical performance of two sets of regionally distinct decarbonization factors. Across

regions we see the most aggressive decarbonization strategies produced the highest cumulative alpha, after controlling for traditional factors. Investors that had significant exposure to the European factors between 2009 and 2018 would have experienced significantly stronger performance relative to the US. Moreover, we observe a low correlation between the regional factor performance and flows. This is exemplified after 2016 when almost all US factors experienced outflows, an effect not seen in Europe. And, consistent with traditional factors, we find strong alignment with the decarbonization factor returns and contemporaneous institutional flows into (or out of) factors. During this period, holding positions in-line with concurrent monthly institutional flows into factors generated alpha ranging from 1.5% to 8.5%, well beyond the factor performance alone. While such perfect alignment is not practically possible, we find aggregate flows to be highly persistent, suggesting that flows contain information about anticipated climate change fundamentals and, may offer a useful signal to future price trends.

What can investors do with this insight? Decarbonization factors are versatile for investors to use. The low correlation between regional decarbonization factor returns creates an attractive opportunity for investors to rotate across strategies – implementing tilts at the sector, industry or firm level across regions – providing continuous exposure to low-carbon portfolios with more attractive return profiles.

For more on this topic, see our 2021 journal article: **“Decarbonization Factors”** by Alexander Cheema-Fox, Bridget Realmuto LaPerla, George Serafeim, David Turkington and Stacie Wang, *The Journal of Impact and ESG Investing*, Vol. 2, Issue 1, August 2021

Decarbonization factors:
Cumulative alpha and Sharpe ratios




Source: State Street Global Markets, MSCI market data, S&P Trucost, Kenneth French data library. Note: The graph presents cumulative abnormal returns for \$1 investment in the decarbonization factors from July 1, 2009 to December 31, 2018. The abnormal returns are estimated from regressions based on non-overlapping monthly data, controlling for market, size, value, profitability, investment, momentum factors and NYMEX oil spot returns. Sharpe ratios (1.00, 0.37, 0.32, and 0.00) are based on abnormal returns.

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