

Dissecting Green Returns

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Regarding green assets over the past decade, this research shows that green assets' high recent returns are unexpected, reflecting news about environmental concerns rather than high expected returns; further, this work reveals that the green factor's recent outperformance vanishes after removing the effects of climate-concern shocks.

The growth of sustainable investing is one of the most dramatic trends in the investment industry over the past decade, with sustainable strategies comprising one-third of current professionally managed US assets. Environmental concerns take the lead among sustainable investors; for example, 88% of the clients of BlackRock, the world's largest asset manager, rank environment as "the priority most in focus." Further, based on past performance, asset managers often market sustainable

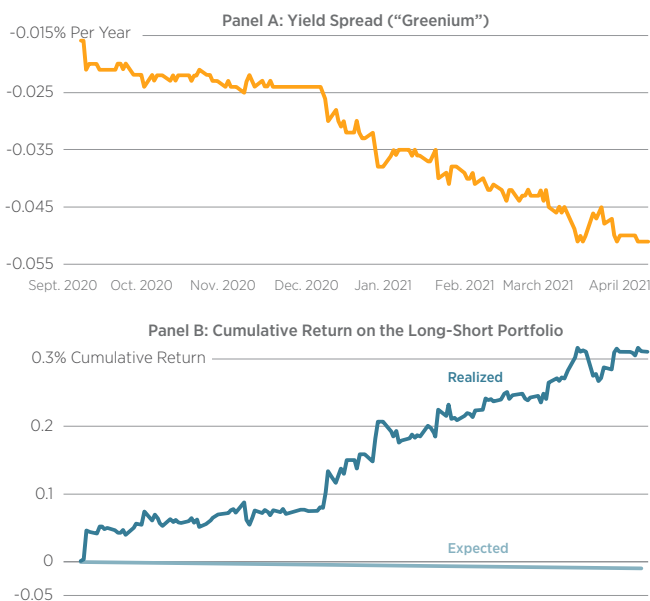
investment products as offering superior risk-adjusted returns; however, this work reveals that investors should be wary of such claims.

The authors employ a novel model which predicts that "green" assets have lower expected returns than "brown," due to investors' tastes for green assets, yet green assets can have higher realized returns while agents' tastes shift unexpectedly in the green direction. This wedge between expected and realized returns is central to the paper. The authors explain that green tastes can shift in two ways:

- First, investors' preference for green assets can increase, directly driving up green asset prices.
- Second, consumers' demands for green products can strengthen, for example, due to environmental regulations, driving up green firms' profits and, thus, their stock prices. Similarly, investors' preference for brown assets or consumers' demand for brown products can decrease, again making green stocks outperform.

Bottom line: green stocks typically outperform brown when climate concerns increase. Equilibrium expected returns of stocks that are better hedges against adverse climate shocks include a negative hedging premium if the representative investor is averse to such shocks. Empirically confirming a climate risk premium, however, must confront the large unanticipated positive component of green stock returns during the last decade. Without accounting for those unexpectedly high returns on stocks that appear to be relatively good climate hedges, one could be led astray. That is, one could infer that those stocks providing better climate hedging have higher expected returns, not lower, as theory predicts.

Figure 1 • German Twin Bonds



Note: Panel A plots the daily time series of the "greenium," the difference between the yields of the German government's 10-year green bond and its non-green twin, in annual terms. Panel B plots the performance of a portfolio that goes long the 10-year green bond and short its non-green twin. The solid line plots this long-short portfolio's daily cumulative realized return. The dashed line plots the expected cumulative return as of the first day of trading of the green bond (September 8, 2020), absent a subsequent change in the greenium, which was -1.6 bps on that day.