Dissecting Green Returns

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Discussion by: Anna Pavlova (London Business School)
Big Picture

- An important and impactful research agenda (this paper + PST, 2021)
- Clarifies some misconceptions in the industry and academia about green firms’ expected returns

Comments:
1. Measurement of ESG or E, S, and G dimensions
2. Data limitations
3. ESG fund flows and stock returns: more validation
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2. Data limitations
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Should Green Stocks Have Lower Expected Returns?

Of course!

The point of ESG investing is to provide a cost of capital subsidy to green firms.

Empirical literature:
- Expected returns of green firms can be both higher or lower.
  - Higher: Albuquerque, Koskinen, and Zhang (2019); Lins, Servaes, and Tamayo (2017); Khan, Serafeim, and Yoon (2016); Cheema-Fox, LaPerla, Serafeim, Turkington, and Wang (2019); Edmans (2011)
  - Mixed: Larcker, Richardson, and Tuna (2007)

Many practitioners publicly say that green firms have higher stock returns.
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▶ Lower: Chava (2014); Bolton and Kacperczyk (2021, 2022); El Ghoul, Guedhami, Kwok, and Mishra (2011)

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Cost of Capital Subsidy Explained

Green stocks should have higher prices and hence lower expected returns.
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Implicit assumption: stocks are imperfect substitutes in investors’ portfolios.
The Data Seemingly Suggests the Opposite

This figure plots the green and brown portfolios' cumulative returns. The values of the green and brown lines at the end of 2020 are 2.649 and 0.913, implying green stocks outperformed brown by 
\( (2.649 - 0.913) \times 100 = 174 \) percentage points over this period.
Figure 8. Components of green-factor returns.
The solid line plots the realized cumulative, compounded green-factor returns. The remaining lines show counterfactual green-factor returns computed using the model from column 3 of Panel A of Table 4. To create the line "(1) No climate news," we compute counterfactual monthly green-factor returns as their realized value minus the values of "∆ Climate concerns (same month)" and "∆ Climate concerns (prev. month)" times their respective regression coefficients. To create the line "(2) Also no CF news," we use the previous counterfactual returns but also subtract "Earnings announcement returns" and "∆ Earnings forecasts" times their respective regression coefficients. To create the line "(3) Also no ESG flows," we use the previous counterfactual returns but also subtract "ESG flows" times its regression coefficient and "[ESG assets] minus counterfactual ESG assets" times the coefficient on "ESG assets."
Comment 1

1. Measurement of ESG or E, S, and G dimensions of it
### Correlation matrix of ESG and E ratings

<table>
<thead>
<tr>
<th>ESG</th>
<th>ISS</th>
<th>MSCI</th>
<th>Refinitiv</th>
<th>RepRisk</th>
<th>SPGlobal</th>
<th>Sustainalytics</th>
<th>Truvalue Labs</th>
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<tr>
<td>RepRisk</td>
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<td>Truvalue Labs</td>
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Why are the Correlations so Low?

- Lack of standardization of ESG reporting
- ESG raters rely on different data sources

<table>
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<tr>
<th>Source</th>
<th>CSR Reports</th>
<th>Regulatory Filings</th>
<th>Media</th>
<th>Questionnaires</th>
<th>Modelled Data</th>
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<td>Public Third-party</td>
<td>Private Self-reported</td>
<td>Private Third-party</td>
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<td>Reporting Noise</td>
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<td>(Mandatory) Low</td>
<td>(Involuntary) High</td>
<td>(Voluntary) Medium</td>
<td>(Involuntary) High</td>
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<tr>
<td>Noise Level</td>
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</table>

- Some raters backfill their data retroactively (Berg et al., 2021)
Measurement Error Problem

- ESG scores are measured with noise

- This noise affects the Green Factor

- Berg, Koelbel, Pavlova, and Rigobon (2021) (BKPR) propose to use an errors-in-variables methodology to de-noise ESG scores:
  - ESG score = True ESG Performance + noise
  - Noise creates attenuation bias
  - Use other noisy measures of same True ESG Performance as Instrumental Variables to correct the bias
Measurement Error Problem (cont.)

- BKPR find big differences between raw rankings of firms and noise-corrected rankings
  - 77% (63%) of firms move up/down one or more decile (quintile) after noise-correction

- Suggestion 1: Robustness check with Sustainalytics scores

- Suggestion 2: Greenness may become significant in individual stock returns decompositions if instrumented with Sustainalytics
Comment 2: Data Limitations

1. Short sample (2012-2020)
   - Risk premium on Green Factor likely time-varying
   - Usually need at least 30-40 years of data to estimate it
   - Would be nice to add 2021 – green stocks underperformed brown

2. Coverage
   - Sample includes around 2200 stocks, out of around 4200
   - Misses smaller companies, but companies in the sample account for most of market value
Comment 3: ESG Fund Flows and Stock Returns

- **ESG fund flows** are an important force explaining the main result: why green stocks outperformed brown.

- Standard asset-pricing factors/characteristics that explain stock returns do not include fund flows
  - Standard view is that fund flows are a reaction, not an explanation
  - To address reverse causality, PST instrument current flows with past flows
  - Add more discussion and guidance

- Is the magnitude of estimated effect of ESG flows on stock returns reasonable?
  - No benchmark in the literature to compare it to
  - Consistency with other methods – e.g., Koijen and Yogo (2019)?
Summary

- ESG investing is a major current trend
- Many open questions, challenges, and opportunities
- An important and thought-provoking paper on ESG investing
- A great area of research!