

# THE PROBLEM WITH SUSTAINABLE INVESTING:

IS THE INVESTMENT INDUSTRY  
GOING ABOUT IT THE WRONG  
WAY?

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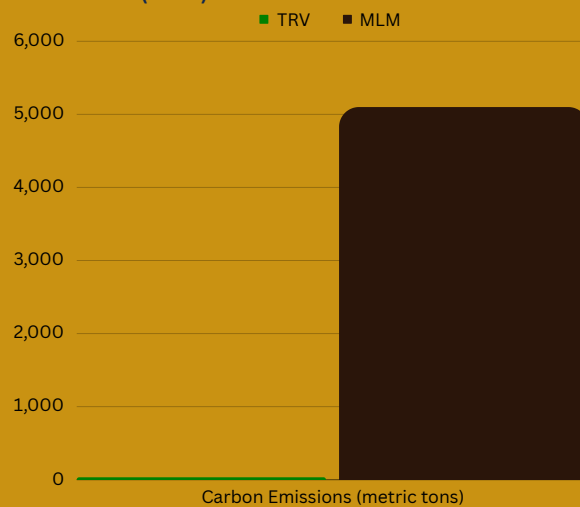
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Many investors use ESG (Environmental, Social and Governance) strategies in their portfolios to encourage sustainable and responsible investments that seek to benefit the environment. The most common approaches overweight “green” companies and underweight “brown” ones, essentially aiming to punish polluting companies and reward cleaner ones. Historically, exclusion lists are the original and best-known example of this, although more nuanced approaches have evolved over time. On the surface, these approaches seem logical, and they certainly satisfy investors’ need to demonstrate that their portfolios align with their ethical values.

But do these approaches really work in terms of reducing pollution? Many sustainable investors now instead support the concept of a “green transition” that aims to reduce emissions intensity by providing an incentive for companies to modify their behaviors. So far, so good. However, new research suggests that the way that many investors go about this is actually counterproductive, potentially harming the environment, not helping it. The good news is that there may be a way to fix this. More on that later, but first, consider this question.

Travelers Companies Inc. (NYSE: TRV, a property and casualty insurer) is a typical “green[1]” company, one that does little to pollute the environment, and hence rarely figures on ESG exclusion lists. Martin Marietta Materials Inc. (NYSE: MLM, a supplier of heavy building materials such as cement and aggregates) is a typical “brown” company, whose business is inherently polluting. If Travelers reduced emissions by 50%, and

**Figure 1 | Martin Marietta (MLM) Emissions Were More Than 150 Times That of Travelers (TRV) in 2021**



Source: Counterproductive Sustainable Investing, Hartzmark and Shue

Martin Marietta reduced emissions by 1%, which would be better for the environment? Because Martin Marietta has such high emissions in absolute terms, a small percentage reduction in these far outweighs anything that Travelers could do. In fact, eliminating ALL of Travelers’ emissions would be equivalent to less than a 1% reduction by Martin Marietta.

Sustainable investors may want to own Travelers and exclude Martin Marietta on ethical grounds so that their portfolios include only green companies and exclude brown ones. But if their goal is to provide incentives that actually benefit the environment, then they may need to rethink.

[1] While “green” and “brown” can be used to describe non-polluting and polluting firms generally, in the context of this paper, they are given specific meaning. The paper’s data focuses on emissions of greenhouse gases emitted by firms, and each year sorts these by quintile. Firms in the first quintile (highest emitters) are deemed “brown” and those in the fifth quintile are deemed “green”. While emission of greenhouse gases is not the only contributor to pollution, the gases have a significant and highly publicized role in climate change. Hence the paper’s authors use these emissions to illustrate the issues that ESG investors must confront.

"Counterproductive Sustainable Investing: The Impact of Elasticity of Brown and Green Firms," a new research paper by Professors Samuel M. Hartzmark and Kelly Shue, focuses on the issue of green and brown firms. Winner of the 2023 Brandes Center Prize, the paper [2] makes two key points about today's ESG investing:

1. Sustainable investing that directs capital away from brown firms and toward green firms may be counterproductive in that it makes brown firms more brown, without making green firms more green.
2. Brown firms face very weak incentives to become more green. Due to a mistaken focus on percentage reductions in emissions, the sustainable investing movement primarily rewards green firms for economically trivial reductions in their already low levels of emissions.



Dr. Sam Hartzmark



Dr. Kelly Shue

Professor Shue opened a discussion with members of The Brandes Center Advisory Board by observing, "The vast majority of the money that is invested in ESG is implemented in a very simple way: portfolios tend to be overweight green firms that are doing good for the environment and have low carbon emissions, and they underweight brown firms that have high carbon emissions."

The idea is that this reduces the cost of capital for green firms (reward) and raises it for brown firms (punishment). But Shue noted, "When green firms get cheaper access to financing, they don't really improve their environmental impact, because they had no meaningful environmental impact to begin with." (As well as Travelers, for example, think other financials, along with health care and legal services).

In practice, by far the biggest impact on the environment would be in providing a genuine incentive for brown firms to improve their polluting ways. The research from Professors Hartzmark and Shue suggests they do change their ways under the current incentive structure. But in the wrong direction!

Consider that the typical brown firm may pollute about 200 to almost a thousand times as much as a typical green firm. (Think energy, transportation, manufacturing, and agriculture industries as brown industry examples). These brown firms may be on a natural path toward reducing their emissions intensity as their technology improves. Hartzmark and Shue developed the measurement of "impact elasticity" to measure a firm's change in environmental impact due to a change in its cost of financing. Their research showed that

[2] The complete research paper is available [here](#) at [ssrn.com](#).

when these brown firms face financial distress and have difficulty in accessing capital, they actually pollute more per unit of output. Punishing the “bad” brown firms by divesting can thus result in increasing global pollution!

The reason for that, commented Shue, is that in order for these brown firms to lower emissions intensity, they need to upgrade their equipment, which requires investment upfront. This will only pay off in the long term and if these firms are starved of capital, they must focus instead on their short-term cash needs. So they double down on existing brown production methods or cut back on pollution abatement efforts.

Generalizing the TRV vs. MLM comparison from Figure 1, we can see why this is a problem. Over 95% of ALL emissions come from the brown firms, those in quintile 1 in Figure 2. Any aggregate change in emissions from those firms is extremely impactful on the environment, while emissions changes in the other quintiles (especially quintile 5) may be barely noticeable.

So, portfolios that exclude brown firms and emphasize green firms may be in line with their investors’ ethical principles, but they aren’t helping the environment, according to Hartzmark and Shue’s research, and their approach may, on balance, be counterproductive.

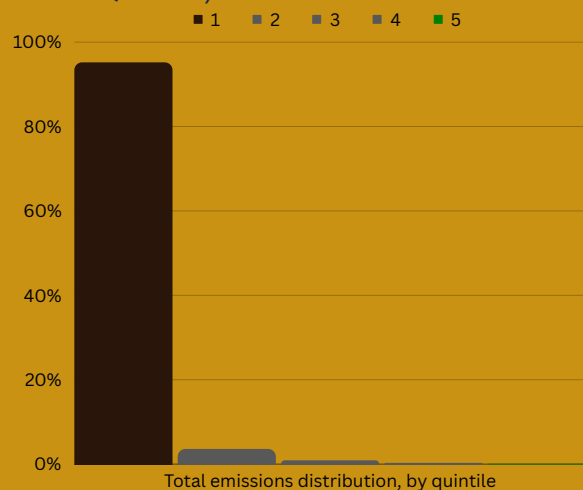
A common metric in setting ESG incentives is “emissions intensity,” which is a firm’s absolute emissions divided by revenue, essentially enabling us to compare firms with similar revenue. This shows a massive gap between the emissions intensity of the brown (quintile 1) firms compared to their green (quintile 5) counterparts.

Shue noted, “In comparing a brown and green firm of equal size, an increase in emissions by a brown firm of 1% has the same actual environmental impact as an increase in emissions by a green firm of 260%. It is also much easier for a green firm to purchase a small quantity of carbon offsets to completely offset its initially low level of emissions and become carbon neutral. However, this 100% reduction in emissions is far less economically meaningful than a brown firm reducing its emissions by a mere 1%.”

And it gets worse! The professors noted that the incentives in today’s sustainable programs focus on rewarding percentage reductions in emissions, not absolute amounts. They pointed out that if the goal is to reduce aggregate emissions, then the investment industry is using the wrong measure. Compounding this problem, the professors were surprised to discover that in terms of the ESG ratings awarded, green firms were actually rewarded more than brown firms for the same percentage reduction in emissions.

**Figure 2 | Brown Firms (1st Quintile) Are Responsible for More Than 95% of All Emissions**

*Total Emissions Distribution, By Quintile (Brown Firms in Quintile 1)*



Source: *Counterproductive Sustainable Investing, Hartzmark and Shue*

They argue that this should be reversed so that brown firms are rewarded more for the same percentage reduction in emissions, as this translates into potentially a much larger change in absolute emissions.

Entire brown industries, such as agriculture, are severely underweighted on average by sustainable investors. This underweight applies to even the greenest firms within agriculture. Sustainable investors are overweight other industries, such as legal services, insurance, health care, etc., even though these industries don't produce substitutable goods. But the professors' research shows that even when controlling for industry differences, there are significant disparities between the brownest and greenest firms in an industry. An approach that provides incentives for the brownest firms in every industry should be preferable to blanket exclusions that essentially punish entire industries. Shue noted that it makes sense to focus on rewarding the set of firms within brown industries that are meaningfully improving or relatively green within that industry, even if on an absolute basis, they look like they're very high polluting.

A number of Brandes Center Advisory Board members and Brandes Investment Partners' (BIP) professionals weighed in with questions and comments. Rachel Farrell (Director of Public and Private Markets, Nest Pension) raised the question of how and where to apply pressure and influence. Hartzmark noted that the most effective impact had to be efforts to reward those firms in brown industries that are trying to help by improving their emissions.

Gerardo Zamorano, CFA, (a director of investments at BIP) said that it's still the case that "many asset owners just want to cut exposure" and that many of these institutions still remain concerned primarily about avoiding the risk of being seen to be exposed to high polluting firms.

In the context of Zamorano's comment, we note that the stock price outperformance [3] of green firms in recent years has provided no incentive for asset owners or managers to change the current incentive system. Investors have generally profited from "owning green and excluding brown." This may have been a self-reinforcing feedback loop, but we believe is unlikely to continue indefinitely.

Machel Allen, CFA, (President & Chief Investment Officer of Metis Global Partners) felt that a number of foundations, endowments and health care funds are "evolving to a more holistic approach, with recognition that this is an economic transition that will take multiple decades."

Shue found it interesting that unlike many big asset owners, "Government policies have become more sophisticated, both in the United States and in Europe, aiming their efforts primarily at the industries that actually matter for the environment."

Yingbin Chen, CFA, (a director of investments at BIP) raised the issue of how to go about measuring the types of data that the suggested new approach requires, either at the company or industry level, as without that data, it would be hard for asset owners or managers to implement changes. "Are you aware of any organization that's doing this work?" she asked.

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[3] The S&P 500 ESG Index has outperformed the S&P 500 Index for six straight years (2018-2023) by an annualized 1.4%.



Hartzmark and Shue noted that they “are planning on coming up with a rating system based on metrics which are not currently being used by ESG rating services or by so-called green funds.” Shue added that she and Hartzmark “had talked to some data providers, asking them to emphasize actual reductions in emissions intensity instead of percentage reductions. We thought that would be an easy fix. But the responses were negative.” She felt that ESG rating providers wanted to disassociate themselves from the use of their ratings. In her view, they saw themselves as providers of the underlying data, and were leaving it to the asset management industry to decide how to use the data.

Hartzmark and Shue conclude that much of today’s implementation of sustainable investing is counterproductive. Current incentives direct capital toward green firms that can’t meaningfully improve their impact on the environment, and at the same time, starve capital from brown firms that end up polluting more when they face financial distress.

To illustrate the magnitude of the issue, let’s use a simple analogy and revisit the disparity that we showed in Figure 1 (comparing emissions of Travelers and Martin Marietta). Suppose you have a nice house in the suburbs. On your right, you have an environmentally sensitive neighbor, who once a week puts a mere kitchen garbage can full of pollution on the front lawn. (We’ll leave the type of pollution to your imagination). On the other side of your house is an insensitive neighbor, who leaves at the curb a massive pile of unbagged pollution. Using a rough order of magnitude comparisons of emissions between Travelers (TRV) and Martin Marietta (MLM),

that pile would be about the size of a standard sedan!

**Figure 3 | Volume of Sedan vs. Garbage Can Is Similar to Size Discrepancy of Emissions for MLM vs. TRV**



*Photo: LFC Photography*

Which action makes more sense for you:

A. Refuse to talk to your insensitive neighbor on your left, while giving a gift to the neighbor on your right, in the hope that he or she might put out a smaller garbage can next time.

B. Use every means you can think of (by yourself or with collective action in the neighborhood) to reduce the massive pile of pollution deposited outside the house on your left.

Maybe that helps point out the scope of the issue!

But even if our readers now appreciate the problem, how can it be fixed? First, there needs to be a broad understanding by sustainable investors that there is actually a problem. We hope publicizing this research will help.

Next, the data must be available for asset owners and managers to identify which firms are reducing their emissions meaningfully relative to their industry. As the saying goes, “If you can’t measure it, you can’t manage it.” In the absence of action from ESG ratings services, this is the professors’ next project, and they invite involvement from other

interested parties. The goal is to be able to create analytics that allow investors to incentivize brown firms to transition toward being more green, via higher share prices or lower cost of capital.

The researchers also mentioned their plans to create an investable index consisting of improving firms that could help funnel funds toward those firms. At that point, the asset management industry would be able to shift perspective. By targeting a reward system toward those brown firms that have the ability and motivation to improve through emphasizing a reduction in absolute emissions, not percentage increments, Professors Hartzmark and Shue believe that sustainable investors would be able to make a truly meaningful contribution to improving the environment.

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