Corporations facing strict environmental laws move pollution overseas

By Theo Wayt

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Corporations might be outsourcing their pollution. (AP Image/Czarek Sokolowski)

Multinational companies headquartered in countries with strict environmental laws are more likely to perform pollution-heavy business activities abroad, according a group of researchers from around the world who say that more environmental regulation should be handled on the international level.

Specifically, researchers found that a one standard deviation increase in the strictness of environmental policies, as ranked by the World Economic Forum, in a firm's home country is associated with an up to 43% increase in carbon dioxide emissions overseas and a 29% reduction in carbon dioxide emissions at home.

"Many countries have been tightening

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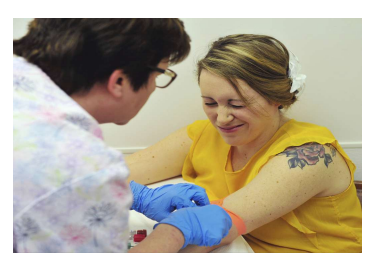

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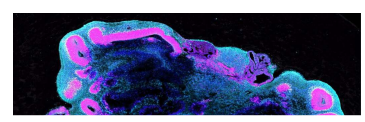

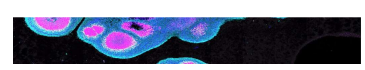

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University in the Netherlands and Yeejin Jang of the University of New South Wales in Australia told *The Academic Times*. "However, considering the global scale of corporations' operations, tightening national policies can bring undesired negative consequences without international coordination in regulations."

Kleimeier and Jang, along with co-authors Itzhak Ben-David of The Ohio State University and Michael Viehs of the European Center for Sustainable Finance in the Netherlands, based their findings on CO2 emissions data from nearly 2,000 companies in 48 countries from 2008 to 2015.

In the paper, which is forthcoming in *Economic Policy*, the researchers called the patterns they observed "carbon leakage," meaning that companies factor in the strictness of environmental regulations when choosing where to locate their facilities.

They tested two hypotheses to understand this pattern. Under the "push hypothesis," the researchers tested whether tightening environmental policies in a company's home country incentivizes firms to relocate dirty production elsewhere. Under the "pull hypothesis," by contrast, the researchers tested whether countries with loose environmental policies can incentivize firms to come and bring their polluting activitie

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By using a statistical specification that held foreign countries' environmental policies constant, the researchers found that the "push hypothesis" was correct. They found no evidence for the "pull hypothesis."

"Our analysis shows that the main force dictating multinationals' emission of CO2 abroad is pressure from the home country's environmental policies, consistent with the push hypothesis," Kleimeier and Jang said. "Facing tightened domestic policies, firms have a stronger incentive to export their polluting operations because reducing emissions might be costly and can require investment in resources."

However, national regulations can bring down firms' overall emissions at least a little bit, the researchers found. A one standard deviation stricter environmental policy in a firm's home country is associated with a 14% reduction in direct CO2 emissions, the researchers found.

They cautioned, though, that companies can outsource polluting activities to other firms, meaning that their indirect emissions rise and counteract the direct reduction.

Kleimeier and Jang said their work shows that "strict national regulation of these industries is not enough."

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coordinated effort is undertaken to address climate change, firms will find ways to circumvent strict environmental regulations at least partially. As firms in pollution-intensive industries contribute most to worldwide emissions, policymakers might be most effective if they focus on curbing the ability of pollution-intensive industries to export pollution to countries with laxer environmental regulation."

The 2015 Paris Agreement, which U.S. President Joe Biden has rejoined, is an "important step toward achieving this goal," Kleimeier and Jang added.

The researchers used multinational firms' voluntarily self-reported emissions data compiled by the organization CDP Worldwide, formerly known as the Carbon Disclosure Project. The organization is supported by a wide variety of international firms, including natural gas companies, such as Dominion Energy and Gas Networks Ireland, and financial firms, such as Deutsche Bank and VakifBank.

Using data from CDP allowed the researchers to access more detailed firm-level emissions data, according to Kleimeier and Jang. However, relying on firms to self-report emissions could introduce conflicts of interest.

"Researchers working with self-reported data need to make extra efforts and show that the [illegible] d by any self-rep [illegible] eier and

Jang. "We therefore clearly discuss the incentives that firms have to correctly report their emissions to CDP. We also explain the direction of any bias that self-reporting might potentially introduce. Finally, we show that our results are robust when we consider a sub-sample of our data that is unaffected by self-reporting."

Kleimeier and Jang said that in the future, they are interested in studying how carbon emissions change across supply chains in relation to environmental regulation. They also plan to examine how differences in environmental changes within individual countries affect emissions.

The study, "Exporting Pollution: Where Do Multinational Firms Emit CO2?" published Feb. 10 in Economic Policy, was authored by Itzhak Ben-David, The Ohio State University and the National Bureau of Economic Research; Yeejin Jang, University of New South Wales; Stefanie Kleimeier, Maastricht University; and Michael Viehs, European Center for Sustainable Finance and Federated Hermes International.