
Analysis Suggests Municipal Bond Market Prices Race But Not Climate Risk.

DURHAM, N.C. — The U.S. municipal bond market does not consider physical climate risks when deciding where to invest, but it generally requires higher interest payments from predominantly Black communities seeking to borrow, according to an analysis published Aug. 9.

The findings from researchers at Duke University, Northeastern University and Breckinridge Capital Advisors appear in the open-access journal PLOS ONE.

"The results of our study point to mispricing of risk in the municipal bond market — climate risk should matter to investors, but the racial makeup of communities should not," said lead author Erika Smull, a 2022 Ph.D. graduate of the Nicholas School of the Environment who now works as a research analyst at Breckinridge Capital Advisors.

"Our analysis shows that climate risk is not priced, but that a 'Black Tax' exists in the market," Smull said. "That is problematic for a country that has to grapple with both increasing climate risks and racial disparities."

States, cities, counties and other governmental entities rely on the $4 trillion municipal bond market to help fund essential infrastructure and services, such as schools, roads and water and sewer systems. Bond issuers repay investors through taxes or fees collected within their service areas. How much investors charge borrowers in interest depends on their perception of each service area's unique environmental, economic or demographic risks.

Few studies have examined the relationships between municipal bond pricing and two particular factors: climate risk and race. The analysis in PLOS ONE used data from price at issue of more than 700,000 municipal bonds to better characterize those relationships. The authors focused on a measure called credit spread — the difference between a bond issuer's interest cost to borrow and a benchmark "risk-free" municipal rate.

When adjusting for both bond structure and other service area characteristics, the analysis found that communities with majority Black residents face larger credit spreads on municipal bonds than communities with non-Black majorities. Applying this borrowing penalty to the entire municipal bond market results in Black Americans paying an estimated $900 million in additional interest costs each year.

"There are numerous reasons that could explain why we find race to be meaningful for municipal bond spreads, including implicit and explicit biases of organizations or individual investors, statistical discrimination, where risk perceptions of decades past have proliferated, and/or circular reasoning on the part of investors who expect others to hold a bias and therefore price accordingly," the authors write. "Regardless of any sort of explanation, race alone should not influence municipal credit spreads."

In contrast, no statistically meaningful penalty emerged from the analysis for climate risk. All other factors being held equal, communities at higher risk from climate effects, such as sea level rise or wildfires, pay roughly the same rate as lower-risk communities to issue debt for needed infrastructure improvements.

“Municipal bonds are long-term financial liabilities, so any biases priced into the market have profound implications for communities and their residents,” said coauthor Martin Doyle, director of the Water Policy Program at Duke’s Nicholas Institute for Energy, Environment & Sustainability and professor of river science and policy at the Nicholas School of the Environment.

“While the effects of climate change are manifesting more frequently, bond buyers are still treating cities with as wide a range of risk as Miami and Omaha the same,” Doyle said. “Meanwhile, Black communities that are often on the front lines of climate risks and disasters appear to face higher costs to make their infrastructure more resilient.”

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Read full paper.

Nicholas Institute for Environmental Policy Solutions

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