Is Physical Climate Risk Priced Evidence from Regional Variation in Exposure to Heat Stress

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We exploit regional variations in exposure to heat stress to study if physical climate risk is priced in municipal and corporate bonds as well as in equity markets. We find that local exposure to damages related to heat stress equaling 1% of GDP is associated with municipal bond yield spreads that are higher by around 15 basis points per annum (bps), the effect being larger for longer-term, revenue-only and lower-rated bonds, and arising mainly from the expected increase in energy expenditures and decrease in labor productivity. Among S&P 500 companies, one standard deviation increase in exposure to heat stress is associated with yield spreads that are higher by around 40 bps for sub-investment grade corporate bonds, with little effect for investment grade bond spreads, and with conditional expected returns on stocks that are higher by around 45 bps. These results are (i) observed robustly only starting in 2013–15, (ii) mostly absent for physical risks other than exposure to heat stress, and (iii) consistent with the class of macroeconomic models where climate change has a direct and large negative impact on aggregate consumption.