

The Atlantic

BUSINESS

As the Climate Gets Hotter, Will Everyone Work Less?

A new study finds a strong relationship between rising temperatures and stunted economic growth.



Reuters

BOURREE LAM
3:27 PM ET

In a work culture obsessed with productivity, not even office temperatures can escape study. For example, [one study](#) found that employees in colder

office temperatures made 44 percent more typing errors than those working in a “comfortable” temperature. [Another study](#) found that the optimal office temperature for desk work is around 70°F—with performance dropping as much as 9 percent if temperatures reached a tropical 86°F.

Now, this relationship is being investigated on the level of regional climates. [A new paper in *Nature*](#) looks at the macroeconomic damages of rising temperatures, and its authors—Marshall Burke, Solomon Hsiang, and Edward Miguel—hail from Stanford University and University of California, Berkeley. They looked at economic data from 1960 to 2010 in 166 countries, and found that a nation’s productivity declined as its climate got hotter. The researchers’ model found that national productivity increases as temperature goes up, but peaks at an annual average of 55°F. At higher annual average temperatures than that, a country’s productivity starts declining.

They concluded that by the year 2100, 77 percent of countries will be poorer as a result of this lost productivity—with poor countries in hot regions getting hit the hardest. “Almost all low-income countries are in 'warm' regions, and thus are predicted to suffer strong effects when temperatures go even higher, whereas rich industrialized countries are typically closer to the 'optimal' average temperature and thus show a weaker and more varied response,” wrote Thomas Sterner, an economist at the University of Gothenburg, in [an accompanying piece](#) in *Nature*. Sterner emphasizes that instead of comparing a country’s productivity with other countries’, the researchers compared each country with itself during times of differing temperature for this study.

“If societies continue to function as they have in the recent past, climate change is expected to reshape the global economy by substantially reducing global economic output and possibly amplifying existing global economic inequalities, relative to a world without climate change,” wrote the

researchers. In an [interview with *Marketplace*](#), Burke—the lead researcher—said that he did not believe technological advances would shield countries from these economic losses.

But [some experts dispute](#) the claim that there's an optimal temperature for productivity or that adaptation is not possible. In the paper, the researchers do note the possibility that “unprecedented innovation or defensive investments” might help matters.

Sternier writes that no matter the takeaway of this study, this is an area that needs a lot more attention. This is perhaps particularly relevant on the heels of the National Oceanic Atmospheric Administration's [announcement on Wednesday](#) that 2015 is looking to be the hottest year in the historical record. “All told, these estimates equate to much larger economic losses than most leading models suggest,” wrote Sternier. “My feeling is that we are only beginning to understand just how much damage a changed climate can wreak.”

ABOUT THE AUTHOR



BOURREE LAM is an associate editor at *The Atlantic*. She was previously the editor of [Freakonomics.com](#).

[Twitter](#) [Email](#)