



NEW REPORT: Hot weather can worsen reproductive health and decrease birth rates

A new report publishing later today on [IZA World of Labor](#) finds that decline in births can be explained by hot weather harming reproductive health around the time of conception.

Non-experimental studies find that birth rates fall nine months after the occurrence of hot weather. There is suggestive evidence that the fall in births is due to worse reproductive health and not diminished sexual activity.

Economist Alan Barreca from Tulane University, looks at data from the US which demonstrate that higher temperatures reduce birth rates approximately nine months later. One study looked at the relationship between temperature and fertility between 1931 and 2010. The study finds that there is an important “tipping point” when the average daily temperature passes 20°C (68°F). That is, temperature changes below 20°C have little effect on birth rates nine months later. But, as temperature increases past 20°C, there is a dramatic fall in birth rates. For example, one additional “hot day” (above 27°C/80°F) relative to one “mild day” (at 20°C/68°F) causes the birth rate nine months later to fall by 0.4%, or about 1,200 births in the US.

There is only a partial rebound in births in the few months after the initial decline, suggesting that hot weather still reduces total completed fertility. Furthermore, the rebound in births shifts more births to the summer months, which harms infant health due to increased exposure to hot weather during the third trimester. One study finds that each additional hot day during the third trimester reduces birth weight. In the long term, third trimester exposure to high temperatures may also reduce labor productivity into adulthood, possibly due to lasting physiological harm caused by the early life injury. Recent work finds that hot weather in the third trimester leads to lower annual earnings some 30 years later, though the magnitude of the effect is only modest.

Barreca suggests that air conditioning can help mitigate the effects of hot weather on fertility. Air conditioning coverage in the US increased from almost no one having it in the 1950s to over 80% by the 2000s. During that time, the effect of one hot day halved. Each hot day caused the birth rate nine months later to fall by 0.6% during the 1950s, but only by 0.2% during the 2000s.

However, relying on air conditioning as an adaptation strategy may end up exacerbating climate change by increasing energy use and GHG emissions. Thus, the use of air conditioning should be offset with improvements in energy efficiency and reductions in GHG emissions in other sectors of the economy where the costs are not as great as those on fertility.

Media Contact:

Please contact Francesca Geach for more information or for author interviews:
francesca.geach@bloomsbury.com or +44 20 7462 9204.

Notes for editors:

IZA World of Labor (<http://wol.iza.org>) is a global, freely available online resource that provides policy makers, academics, journalists, and researchers, with clear, concise and evidence-based knowledge on labor economics issues worldwide.



BLOOMSBURY PUBLISHING
LONDON · NEW DELHI · NEW YORK · SYDNEY

I Z A

World of Labor

Evidence-based policy making

The site offers relevant and succinct information on topics including diversity, migration, minimum wage, youth unemployment, employment protection, development, education, gender balance, labor mobility and flexibility among others.

Established in 1998, the Institute of Labor Economics (www.iza.org) is an independent economic research institute focused on the analysis of global labor markets. Based in Bonn, it operates an international network of about 1,500 economists and researchers spanning more than 45 countries.