



# Climate Change and Economic Activity: Evidence from U.S. States

EPRG Working Paper  
Janeway Institute Working Paper Series  
Cambridge Working Paper in Economics

2208  
2022/03  
2205

**Kamiar Mohaddes, Ryan Ng, M. Hashem Pesaran,  
Mehdi Raissi, and Jui-Chung Yang**

## Abstract

We investigate the long-term macroeconomic effects of climate change across 48 U.S. states over the period 1963-2016 using a novel econometric strategy which links deviations of temperature and precipitation (weather) from their long-term moving-average historical norms (climate) to various state-specific economic performance indicators at the aggregate and sectoral levels. We show that climate change has a long-lasting adverse impact on real output in various states and economic sectors, and on labour productivity and employment in the United States. Moreover, in contrast to most cross-country results, our within-U.S. estimates tend to be asymmetrical with respect to deviations of climate variables (including precipitation) from their historical norms.

**Keywords** Climate change, economic growth, adaptation, United States

**JEL Classification** C33, O40, O44, O51, Q51, Q54

Contact [km418@cam.ac.uk](mailto:km418@cam.ac.uk)  
Publication February 2022  
Financial Support Keynes Fund, University of Cambridge