Climate Change, Population Growth, and Population Pressure

David Nathan Weil (Brown University)

Abstract

We develop a novel method for assessing the effect of constraints imposed by spatially-fixed natural resources on aggregate economic output. We apply it to estimate and compare the projected effects of climate change and population growth over the course of the 21st century, by country and globally. We find that standard population growth projections imply larger reductions in income than even the most extreme widely-adopted climate change scenario (RCP8.5). Climate and population impacts are correlated across countries: climate change and population growth will have their most damaging effects in similar places. Relative to previous work on macro climate impacts, our approach has three distinct advantages. First, unlike other cross-sectional work, by construction, estimated effects of climate are independent of endogenous country-level factors such as institutions. Second, unlike panel work, it is disciplined by a simple macro growth model that allows for adaptation. Third, it assesses impacts via a large set of climate moments, not just annual average temperature and precipitation.