

Climatic factors and economic growth in Africa

Matteo Lanzafame

DESMaS 'V. Pareto'
Università degli Studi di Messina
Email address: mlanzafame@unime.it

Abstract

Using a recently developed historical weather dataset, this paper investigates the economic effects of rainfall and temperature on a panel of 36 African economies over the 1962-2000 period. We adopt the econometric approach based on Mean Group and Pooled Mean Group estimation of Autoregressive Distributed Lag models and find clear evidence of a long-run equilibrium relationship for (both the level and growth rate of) per-capita GDP with, respectively, negative long-run effects for higher temperature and a positive long-run impact of higher precipitation. Very similar findings are reported for labour productivity, while the evidence for population is weaker. The results are remarkably robust to several extensions and checks performed on the baseline model, by splitting the sample of countries according to different criteria, allowing for non-linear behaviour, asymmetries and cross-section dependence. Overall, the evidence gathered strongly suggests that, far from adapting quickly to climatic shocks, the African economies can be permanently damaged by them. Thus, in the absence of corrective measures, the current trends in climate change, typified by declining rainfall levels and rising temperatures, may impose a progressively heavier burden on African economies.