

The ACG 150 Working Papers

Submission Form

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Title of the submission: Asymmetric Climate Effects on Eurozone Sovereign Yields: Evidence from Quantile Regression

Abstract (including potential relevance of work to ACG 150 initiatives/units):

In the present study we examine the relationship among sovereign yields, temperature and precipitation using a large monthly panel data set which consists of 20 eurozone members, over the period 1980M1 – 2023M4. To account for possible asymmetries along the distribution of the climate variables we assume a quadratic modelling specification and apply various mean panel estimation techniques of heterogeneous coefficients. At a next step, to consider possible nonlinearities in the distribution of the dependent variable (sovereign yields), we apply the quantile via moments methodology of Machado and Santos Silva (2019), which accounts for possible cross-sectional dependence and slope heterogeneity. We contribute to the existing literature in two main ways. First, by applying a quantile methodology that provides a more in-depth analysis of the climate effects along the distribution of the sovereign yields, especially in the presence of non-normally distributed data. Second, we find that climate change, as proxied by higher temperatures or lower precipitation (drought), will increase the sovereign risk of all countries, but the magnitude of the impact will be higher for countries that are already characterized by higher sovereign risk levels and/or face extreme weather conditions (hotter countries and/or countries with low levels of precipitation).

Keywords: Climate change, Panel quantile regression, Slope heterogeneity, Asymmetries, Sovereign yields, temperature, precipitation.

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JEL classification categories (relevant papers only): C23, G15, H63, Q51, Q54

(For relevant papers, please consult the *Journal of Economic Literature* and indicate the categories your paper fits into)

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