The macrofinancial and policy underpinnings of climate stress testing scenarios: Are they fit for purpose?

Maria Nikolaidi*[1]

[1]University of Greenwich – University of Greenwich Greenwich Political Economy Research Centre Old Royal Naval College, Park Row, London SE10 9LS, United Kingdom

Abstract

The NFGS scenarios have recently been used by central banks and financial supervisors for conducting climate stress testing exercises. However, these scenarios have two limitations. First, they rely on a macroeconomic modelling approach that does not incorporate the effects of climate policies on financial institutions and the feedback effects of the financial system on the macroeconomy. This underestimates the financial transition risks. Second, the orderly and the disorderly scenarios confine their attention to carbon pricing policies, ignoring other climate policies that might be implemented in the coming years, such as environmental regulation and green public investment. In this paper, we use an ecological stock-flow consistent modelling framework to demonstrate the importance of these limitations. We show how the carbon pricing pathways of the NGFS scenarios can derive different effects on macroeconomic and financial variables depending on whether macrofinancial feedback loops are considered or not. We also show that the macroeconomic and financial effects of carbon prices can be substantially different depending on whether carbon pricing is combined with other climate policies. Based on these results, the paper outlines how the climate scenarios that are used as inputs in stress testing exercises can improve in the future.

*Speaker