

Persistence of Policy Shocks to Ecological Footprint: Evidence from Low, Middle and High Income Countries

Eyup Dogan¹ and Burcu Ozcan²

Abstract

It is important to know the stochastic behaviors of environmental indicators because shocks and innovations will permanently affect the environmental quality if it is a non-stationary series. In this case, policy makers should take an action for the sake of better environment. The number of works that investigate the integration properties of environmental indicators has rapidly increased in the literature despite the fact that almost all studies employ CO2 emissions as proxy for the environmental degradation. Because the environmental degradation cannot be only captured by CO2 emissions, this study uses a broaden indicator; namely, Ecological Footprint (EF). It consists of six subcomponents; Built-Up Land, Carbon, Cropland, Fishing Grounds, Forest Products, and Grazing Land. In this line, this study aims to analyze the stationarity of EF in different countries classified by income levels (i.e. high-income, upper-middle-income, lower-middle-income and low-income countries) by applying a number of panel unit root tests over the years 1961 to 2013. The unit root tests reveal that EF is stationary in the panels of high-income and low-income countries, whereas it is non-stationary in the lower-middle-income countries panel. Regarding the panel of upper-middle-income countries, there is relatively much evidence of stationarity. Based on the results, some important policy implications could be released. Shocks to EF are temporary in high-income, low-income and upper-middle-income countries. In this case, it will revert back to its mean after a short while if EF deviates from the trend path. Therefore, the policy makers should not adopt unnecessary targets when EF temporarily deviates from the trend path because environmental policies designed to the conservation of nature and the mitigation of the damages of human being on environment will likely not have long lasting impacts.

¹ **Corresponding Author:** Department of Economics, Abdullah Gul University, Turkey, eyup.dogan@agu.edu.tr

² Department of Economics, Firat University, Turkey, bozcan@firat.edu.tr