Financial Technology (Fintech), Climate Finance and Ecological Sustainability

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Declarations

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Abstract

Ecological sustainability has become a top priority for policymakers worldwide. In this context, exploring the role of climate finance as an innovative approach is crucial to combat climate change and its environmental impacts. Developed economies exhibit diversity in terms of their resource availability, technological development, ecological regulations, financial stability, and structural transformations. Therefore, this study aims to investigate the role of climate finance on ecological footprint (EF) with FinTech and institutional quality as moderator from 2010 to 2022 in 58 developed nations. This also consider socio-economic condition, trade openness and COVID-19 (pre-post) spillover shock as control variable. The study used the two-step sys GMM method for empirical investigation and validated the results with D-K regression and bootstrap panel quantile regression. The findings demonstrate that climate finance significantly reduces the EF and enhances the trajectory of long-term ecological sustainability. Moreover, FinTech significantly decreases the ecological footprint (EF). Additionally, the novel findings on the combined influence of climate finance and FinTech (CF*FinTech) have significantly reduced the EF, thereby improving ecological sustainability. Institutional quality profoundly reduces the ecological footprint (EF), and similarly, the interaction term CF*IQ further lowers the EF, thereby promoting ecological performance. Other factors such as socio-economic conditions and COVID-19 spillover shocks mitigate the ecological footprint (EF) and positively boost ecological quality. However, trade openness has increased the EF, leading to harm to ecological performance. These findings have considerable implications for policymakers aiming to transition to low-carbon economies and achieve net-zero emissions within this decade, thereby enhancing environmental sustainability.

Keywords: *Climate finance; financial technology (Fintech); Institutional quality; environmental sustainability; Socio-economic condition; Trade openness.*

JEL classification: F35, G23, D73, O13, I31, F14