

Footprint and Resource Decoupling in South Asian Economies: A Panel Data Approach

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Abstract

The continuous economic growth that South Asia has experienced during the last three decades has been characterized by urbanization, industrial sector expansion, and increased material extraction and consumption, but there have been doubts over whether the development strategy adopted by this part of the world is sustainable in the long run, while empirical studies on resource decoupling in South Asian economies have been few, with most existing studies focused on high-income OECD contexts. This paper attempts to fill that void by analysing the level and determinants of resource decoupling in SAARC countries from the period of 1995 to 2025 using the panel data approach where the material footprint per capita, obtained from the UNEP Global Material Flows Database, serves as the dependent variable, while GDP per capita and its square, industrial value added, trade openness, and governance quality (World Governance Indicators) serve as the independent variables driven from the World Development Indicators. Fixed effect panel regression analysis, which is confirmed by the Hausman test, was performed to address the presence of unobserved country heterogeneity; decoupling status was determined based on the growth elasticity of material footprint. Based on the results, it is clear that most economies in South Asia display relative and not absolute decoupling, where good institutional quality is related to higher success, industrialization with resource-intensive approach correlates with poor results, and openness of economies in terms of trade has been revealed to have a mixed influence. These results imply that institutional capacity and structure, not growth by itself, determine the speed of decoupling, providing insights for policymakers regarding fiscal, institutional, and regulatory structures to achieve resource-efficient and circular growth.

Keywords: *circular economy; governance quality; material footprint; panel data; resource decoupling; South Asia*