

Input-output analysis of embodied energy and carbon emissions: Impacts of imports data treatment on transmission dynamics

Topic: Input-Output Analysis: Energy Policies - II

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Input-output (IO) table has been widely used to investigate the relationship between the environment and human behaviors. Official IO tables usually follow the competitive imports assumption and need to be adjusted prior to analysis, which potentially gives rise to information distortion in the adjusted tables. China released both competitive and non-competitive IO tables for 2017, which allows empirical investigation of the bias in findings stemming from the imports data treatment. Focusing on energy and carbon emissions respectively, this study uses structural path analysis (SPA) to explore how the bias is generated in detail and the key sectors involved. Generally, this paper plans to contribute by (1) providing a comprehensive review of SPA studies on resource and environment related issues in China; (2) using SPA by layer to explore the bias in transmission mechanism within the production system arising from distorted intermediate inputs; (3) using SPA by path to identify the key channels that transit the net bias arising from both distorted intermediate inputs and final demand; and (4) discussing the implications of the findings on studies and policies about embodied energy and carbon emissions in China.