

Modeling structural change in the green transition: new industries, balancing procedure, and price and quantity effects

Topic: Methodological advances in extending input-output databases: sectoral disaggregation, matrix augmentation, and hybrid approaches

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A shift toward low-emission production technologies would affect both input structure and cost, impacting trade patterns and driving structural change. However, many emerging green activities are not appropriately represented in input-output tables (IOTs). To timely inform policy-making, a method for the ex-ante integration of these technologies is required. This paper proposes a methodological approach to construct augmented supply, use and input-output tables with a technologically detailed representation of emerging low-carbon activities. By following an analytical approach relying on the combination of a price and a quantity model to balance the augmented tables, the method allows technological coefficients to remain exogenous, ensures consistency between physical and monetary quantities, and disentangles quantity and price effects. This contributes to enhancing the consistency and robustness of analyses examining structural change in the energy transition. The possibility to reflect different cost, deployment, and trade scenarios makes the approach particularly relevant for climate-related policy analysis.