

Assessing the economy-wide impacts of domestic and international climate policies using the GTAP Integrated Assessment Model (GTAP-IAM)

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This paper assesses the economy-wide impacts of global and domestic climate policies using the GTAP Integrated Assessment Model (GTAP-IAM). GTAP-IAM (Corong and van der Mensbrugghe, 2024) facilitates detailed modeling of economy, environment and climate change within the GTAP modeling framework by incorporating various GTAP model variants such as GTAP-E (Energy/emissions), GTAP-Power, GTAP-AEZ (Agro-Ecological Zone) and GTAP-RD (Recursive Dynamics) with marginal abatement cost curves for non-greenhouse gas emissions and a simple climate model linked to emission-related health impacts and damage functions. The GTAP-IAM's baseline is calibrated to the GTAP version 11 Data Base (Aguiar et al, 2022), the Nationally Determined Contributions (NDC) commitments based on the Paris Agreement and the latest Shared Socio-Economic Pathways database. The European Union's Carbon Border Adjustment Mechanism (CBAM) and "Fit for 55" package are implemented as policy scenarios to understand the economy-wide impacts of global and domestic climate policies at the global, national and regional level.

References:

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