

## Abstract:

International economic integration is increasingly characterized by multinational production (MP). The environmental implications of this shift are unclear as different forms of multinational activity affect emissions in different ways, both for production and transportation. MP may reduce pollution by transferring cleaner technology abroad or exacerbate it by outsourcing dirtier production to foreign countries with pollution-intensive technologies. In terms of transportation emissions, MP may substitute trade, reducing the emissions from shipping, or enhance trade and accelerate pollution from transportation. We provide a quantitative general equilibrium framework that brings together MP, international trade, and carbon emissions from production and transportation. As the available data on MP and emission does not fully identify multinational activity and emissions, we consider the range of calibrated models compatible with the data and accordingly report result intervals for all counterfactual scenarios considered. Comparing the current emissions with counterfactual emissions in autarky, we show that under a mild restriction on the initial emission allocation, MP and trade jointly have almost no potential to lower global carbon emissions. We further derive the emissions from counterfactual trade, investment, and climate policies.