

Decomposing Import Demand in Trade Policy Analysis: A Sourcing-by-Agent Framework

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Abstract

This paper develops GTAP-SBA, a sourcing-by-agent modeling framework based on the Global Trade Analysis Project (GTAP) model and database, and provides empirical inputs for policy applications. In standard GTAP-style trade models, import sourcing is aggregated at the sector and regional levels before being allocated to domestic users. This structure does not fully capture heterogeneity in sourcing patterns and tariff responses across firms, households, government, and investment. GTAP-SBA addresses this limitation by leveraging purchasing-agent data from the OECD Inter-Country Input-Output (ICIO) tables, allowing each agent to source imports independently within each sector. Integrating these tables with applied tariff data, we estimate sector-agent-specific trade elasticities from tariff variation. Our findings reveal substantial differences across agents: import demand by firms and investment responds more strongly to tariff changes than import demand by households. We also estimate gravity models for goods and services trade to establish empirical benchmarks for a Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) expansion scenario. Overall, the paper demonstrates that sourcing by agent is not merely a database refinement, but an important margin of adjustment in quantitative trade policy analysis.

Keywords: sourcing by agent; GTAP; trade elasticity; computable general equilibrium; inter-country input-output tables; CPTPP expansion.

JEL Classification: C68; F13; F14; F15; F17.