

## **Disaggregated Estimation of Import and Export Elasticities**

**By Jean Imbs and Isabelle Méjean**

How responsive are traded quantities to a shift in international prices? The answer is of direct relevance to a broad range of past and current issues in international economics. Export elasticities are often invoked to illustrate the relative resilience of certain exporters in the face of a sudden deterioration in their competitive position. The price elasticity of imports, in turn, reflects consumers' fidelity to domestic or foreign goods. And the price elasticity of net exports determines directly whether the venerable Marshall-Lerner condition is verified, and favorable shifts in relative prices have positive end effects on the trade balance. In fact, the price elasticities of trade govern the dynamics of the trade balance, the J-curve discussed in Backus, Kehoe and Kydland (1994).

In a conventional demand system with Constant Elasticity of Substitution (CES) utility, there is a close mapping between substitutability in preferences and trade elasticities. The price elasticity of imports depends linearly on the preference parameters of the importing representative consumer. The price elasticity of exports, in turn, is given by a weighted average of preference parameters across exports destination markets. At least in a conventional CES demand system, there is a tight link between structural parameters and reduced form price elasticities.

In this paper, we describe and implement a structural methodology to estimate the price elasticities of imports and exports. The approach builds on a multi-country demand system with nested CES preferences. For each country, import price elasticities depend on the domestic willingness to substitute domestic and foreign varieties, aggregated across sectors. Export price elasticities are given by a similarly weighted average of substitutability, now aggregated across both destination markets and sectors. All that is needed to pin down trade elasticities are cross-country estimates of the elasticities of substitution - and the weights used in aggregation. In Imbs and Méjean (2009), we adapted Feenstra's (1994) technology to obtain structural estimates of the elasticity of substitution in the US. Here we show how this can be extended to a multi-country framework. We use the setup to compute structural estimates of trade elasticities for a cross-section of more than 30 countries, including most developed and developing economies.