

# Firms and Aggregate Trade Performance

## (Higher moments)

**G. Barba Navaretti (University of Milan), M. Bugamelli (Bank of Italy), E. Forlani (University of Pavia) and G.I.P. Ottaviano (London School of Economics)**

### *Extended abstract*

This paper describes how information on firm heterogeneity can help explain critical outcomes, such as aggregate trade performance across countries and its reaction to some exogenous shocks. Our exercise is deeply inspired by the most recent stream of the international trade literature showing that trade performance depends on firm characteristics, in particular on the characteristics of top performing firms (Melitz, 2003; Mayer and Ottaviano, 2007; Altomonte et al., 2011; Berman, Martin and Mayer, 2012).

Our empirical strategy is based on three estimation steps.

In the first step we run a gravity model of exports by country of origin (“the exporting country”), country of destination, sector and year in order to extract fixed effects by exporting country-sector-year after controlling for destination-sector dummies and the usual dyadic terms (i.e., log of distance, common border, common language, former colony). We also estimate a slight modification of this model to control for the total level of imports by destination country, sector and year. These models are estimated on an unbalanced panel of 514,437 observations from 1996 to 2001 for 20 manufacturing sectors in the CompNet countries.

We then take the exporting country-sector-year fixed effects – that are assumed to proxy for a country’s competitiveness once we have taken out the typical gravity-like demand effects and dyadic terms – and regress them on various moments of the productivity distribution at the exporting country-sector-year level plus various other controls.

Our results point quite clearly to a positive role not only for average productivity but also for the dispersion and the asymmetry of the productivity distribution in shaping the exporting country-sector-year fixed effects.

In a third step, we take such results and test whether and how the moments of the productivity distribution change the sensitivity of a country’s sectoral exports to exchange rates and demand shocks. For this, we build a measure of nominal effective exchange rate (NEER) by exporting country-sector-year and a similar one for demand where we appropriately weigh total imports by destination market.

Our preliminary results show that the elasticity of exports to NEER is lower the more asymmetric is the distribution of productivity, that is to say that larger and more productive firms are less sensitive to exchange rates as found by Berman, Martin and Mayer (2012) on firm-level French data. As to the demand shocks, we find that their impact is, instead, increasing with the asymmetry indicator: this is saying that demand shocks work mostly through the intensive margin which is likely to be dominated by the activity of larger and more productive firms.