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Les défis de développement pour les villes et les régions dans une Europe en mutation

Migration and trade flows: new evidence from Spanish regions

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Référence à la session / reference to the session

S10 - Intellectual property and regional development: innovation, proximity and smart specialization

Résumé / Summary

A growing literature pioneered by Gould (1994) and Rauch and Trinitade (2002) has proven that migrants act as a factor that decreases the costs of trade across partner countries. The underlying mechanism is attributed, on the one hand, to an "information effect" (i.e. thanks to their knowledge of the home country institutions and language, migrants facilitate the flow of information between the origin and the destination country regarding business opportunities) and on the other hand, to an "enforcement effect" (i.e. where institutions are weak, the participation of migrants in co-ethnic networks may act as an enforcement mechanism for transnational contracts). This literature employs gravity models of international trade (Anderson and Van Wincoop, 2003); a stream of this literature focuses on subnational units, in order to take into account the subnationally heterogeneous concentration of immigrants (e.g. Bandyopadhyay et al. 2008; Peri and Requena-Silvente, 2010; Briant et al., 2014; Bratti et al., 2014). The empirical application of these studies, however, has often neglected to take into account an important implication of this unit of analysis: the subnational heterogeneity in overall exporting capacity. In a standard gravity equation, this implies omitting a "multilateral resistance" factor that may be crucial in the determination of trade flows (Baldwin and Taglioni, 2007). To the extent that bilateral migration stocks are correlated with the overall exporting capacity of regions, this may also bias the estimates of migrants' pro-trade effects. In the Chaney (2008) framework, this could occur if for instance bilateral migrants' stocks affect the level of (or are attracted by differences in) regional wages. Hence, we analyze migrants' pro-trade effects through a gravity model augmented with migration variables - both immigration and emigration - , which allows for subnationally heterogeneous exporting capacity of regions.

As it is common in the migration-trade link literature adopting sub-national units, our data is a balanced panel of (mainly) non-zero trade flows. We use Spanish regional export data at the NUTS3 level covering the 2006-2010 period, and study both emigration and immigration. In order to provide an accurate estimate of the pro-trade effect of migrants with these data, we need to address some econometric issues flagged in recent developments in the gravity literature, but so far not fully addressed in the branch focusing on the pro-trade effects of migrants. As it is by now established, heteroskedasticity in log-linear models leads to violating the assumption of independence of the errors, a problem which can be circumvented by a specification where the dependent variable is in levels (Santos-Silva Tenreyro, 2006). On the other hand, the standard solution of implementing a Poisson PML estimator, assuming many zeros in the distribution of the independent variable, may not be appropriate for strictly positive data. To select the suitable estimator, we implement an econometric strategy based on Head and Mayer (2014) and on Santos-Silva and Tenreyro (2006): we compare OLS, Poisson PML and Gamma PML estimators and implement diagnostic tests to study the underlying distribution of the errors and potential mis-specification. Our econometric strategy leads us to select the Gamma PML estimator.

Overall, our results confirm that migration positively affects trade flows, and are aligned in magnitude with those found in the literature (Felbermayr et al., 2012): we find that, on average, a 10% increase in the immigrant stocks in a NUTS3 region leads to a 1.4% increase in the trade of the region with the origin country. Comparing the Gamma with the OLS estimates we also question some findings of previous literature. Stocks of emigrants from the same region into the same country are not found to significantly increase trade, but overall larger national networks of emigrants from any regions are found to have an economically sizeable and significant effect on trade: a 10% increase in the overall population of Spanish nationals in a given country increases the exports of Spanish provinces to that country by on average 2.79% (while Herander and Saavedra, 2005, found that mainly local networks affect trade). Differently from previous literature, language commonality is found to magnify the pro-trade effect of immigrants (see Girma and Yu, 2002; Wagner et al, 2002). Assuming that there are factors that promote the capacity of immigrants to promote transnational transactions (Wagner et al. 2002), our results suggest that language commonality acts as a factor that magnifies immigrants' ability to facilitate transactions.

keywords: Gravity model, migration, trade, NUTS3 regions, Gamma PML.

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