

## **What Drives Migration within the European Union? Estimates from a Gravity Model and from Micro Data**

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Recent shifts in public sentiment about immigration and trade policy have had a profound effect on national and international policymaking, particularly in Europe with the advent of Brexit. At the same time, one of the central challenges facing European policymakers is how to encourage greater mobility within Europe. For example, the Romanian Presidency of the EU Council recently remarked that “enabling labor mobility in the EU and protecting workers will continue to be a key priority for the EU and the Romanian Presidency.” This political statement is consistent with a large literature on labor mobility as a means for adjusting to economic shocks across currency unions (e.g. Eichengreen, *Oxford Research Encyclopedia of Economics and Finance*, 2018).

The Eurozone has exhibited much higher rates of unemployment than the United States since the 2008 Great Recession. In addition, the EU had over twice as much variation in unemployment across its member states at its local peak in 2013 than the United States despite the EU’s low formal geographic mobility costs. Standard spatial equilibrium models predict that labor flows across borders should have adjusted to these large unemployment rate differentials (Blanchard and Katz, *BPEA*, 1992). However, these regional unemployment rate differences have persisted. This implies that individuals are not moving from high unemployment countries to areas of greater opportunity. The primary contribution of this paper is to study how labor market frictions interact with individual migration decisions as an explanation for this slow adjustment.

The first part of our paper presents stylized facts about the characteristics of migrants within the EU using restricted micro data from the European Union Labor Force Survey (EU LFS). Second, we use a gravity model to explore how various factors correlate with aggregate bilateral migration flows. Third, we explore how these migration flows interact with business cycle patterns within the EU. Fourth, we take advantage of the richness of the EU LFS and disaggregate our gravity specification to better understand individual migration choices. We provide preliminary results for the second and third exercise below.

While gravity models have been successful in explaining international trade flows, they have not been widely applied for the analysis of migration flows (Anderson, *Annual Review of Economics*, 2010; Lewer and van den Berg, *Economics Letters*, 2008; Bergstrand, et al., *EER*, 2015). Part of the explanation for this is that data on aggregate migration flows between countries generally suffer from inconsistencies in measurement even within country pairs. National datasets have different definitions for migrants and even when they use the same definition the survey years may not line up (Bick et al, *AER*, 2018; Hong et. al, *International Conference on Information and Communication Technologies and Development*, 2019; Ramos and Surinach, *Journal of Economic and Social Geography*, 2013). Using the EU LFS for both constructing the bilateral flow gravity model and the disaggregated gravity model allows us to resolve

many of these data concerns for a large set of countries and years. The EU LFS allows us to build 5,139 observations of country pairs between 1990 and 2018. The countries included in our sample are Austria, Belgium, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, and the United Kingdom.

Turning now to our preliminary results, the bilateral gravity model estimates the relationship between country to country flows and characteristics of the sending country and the destination country. We include traditional gravity components as well as other measures of *de facto* distance, policy variables that impact travel, and measures of relative economic performance. We find that both the sending country population and destination country population have positive and significant impacts on flows. The elasticity of flows with respect to destination country population reflects that a 1% increase in destination country population is associated with a 1.1% increase in migration flows. Similarly, the elasticity of flows with respect to sending country population suggests that a 1% increase in the population of the sender country increases flows by 0.4% on average. The third traditional gravity component, geographic distance, is significant and negative unless other measures of *de facto* distance are included. We find, *ceteris paribus*, that if countries within a pair share a land border then migration flows are on average 90% higher; countries that share a sea border see 32% higher flows; and pairs in which either country is land-locked see flows that are 42% smaller. Additionally, we include common official language as a proxy measure for “cultural distance.” Countries that share a common official language have over 150% higher flows than countries that do not share a common language.

Turning to economic push and pull factors, we find that a higher ratio in destination to sender GDP per capita and a lower destination unemployment rate are correlated with higher migration flows. Finally, we find that extending working rights to migrants increases flows by 70%, all else equal. In our analysis at the individual level we will be able to reach more detailed conclusions as to which Europeans moves where and why.