The effect of skilled migration on institutional quality of Italian provinces.

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Despite the recognized importance of institutions for economic development (Acemoglu et al., 2005; Rodrik, 2007; Rodrìguez-Pose, 2013) there is no systematic research on the causal effect of migration on institutional quality in the place of destination.

Some studies focus on the impact of migration on institutional quality of the country of origin by using a cross-country approach. Among these studies, Spilimbergo (2009) analyses a sample of individuals who have acquired their education abroad and evidences that foreign-educated individuals promote democracy in their home country, but only if the education is acquired in countries with a high level of democracy. Beine and Sekkat (2013) also contribute to this kind of literature and determine a positive effect of emigration on the change in institutions. Furthermore, the results hold and are reinforced when the authors introduce the skilled migration. Therefore, the educational level of migrants represents an important element able to affect the institutional quality in the sending countries. Docquier et al. (2016) found that international emigration is an important determinant of institutions. In particular, countries with a higher level of emigration rate are primarily those that experience improvements in terms of institutional quality.

However, there is no evidence of the impact of migration on the level of institutions in the destination places. Moreover, although the literature has demonstrated the importance of the institution quality in explaining economic growth and regional disparities (Rodrìguez-Pose, 2013), there are few evidences of the potential effect on the institutional quality of these flows of individuals at regional level (Chauvet and Mercier, 2014). Also the level of education and its possible heterogeneous effects have gained a key role in explaining the quality of institutions in the destination place. Li and Mc Hale (2006), indeed, describe the mechanism through which the flow of skilled individuals influences the demand for political accountability and transparency. In particular, they point out that skilled individuals, besides being the most productive, are also those who are primarily capable of advocating for good governance. For these reasons, skilled migration could have a dual effect in the destination and origin places. This likely means that the higher is the level of education of migrants, and the higher is the demand for political institution in the host regions. On the contrary, a high level of brain drain could decrease the institutional quality in the sending regions.

Therefore, the paper aims at examining two specific questions in depth: i) The impact of migration on the quality of institutions in the receiving place; ii) The importance of the level of education embedded in the migration flows.

By merging the ISTAT's dataset on bilateral migration flows by educational level among the Italian provinces during the period 2004-2012 and the dataset of Nifo and Vecchione (2014) on institution quality the paper tries to address these questions. In particular, it explores if and to what extent the flows of skilled individuals have an effect on the quality of institutions in the place of destination once we control for a number of important variables (degree of regional openness and the stock of regional infrastructures) that have been shown to determine institutions.

The massive brain drain from the Southern regions to the Northern regions and the persistent internal economic and institutional dualism between the North and the "*Mezzogiorno*" make the Italian case an interesting national context to analyse. Fratesi e Percoco (2014) point out, through an analysis at the Italian regional level, the contribution of migration to the human capital accumulation in the host region. The underlying idea is that migration affects the destination place

by not only increasing its labour force, but also changing the way human capital is distributed and, as a consequence, the economic performance.

For these reasons, we suggest that if the more educated are also those who have a higher degree of political participation and more generally take part in the public debate, the migration of these individuals, besides affecting growth dynamics, could contribute to modify the quality of institutions of the receiving regions which, in turn, could widen the regional socio-economic disparities.

This kind of investigation has two important identification issues. First, when we look at the effect of migration on institutional quality, the reverse causality among them could bias the estimation results. Second, there may be omitted factors in our regression that drive the joint patterns of migration and institutions.

We address these endogeneity issues using an instrumental variable approach and in particular we rely on a gravity model able to predict a province's migration rate out of a set of reasonably exogenous variables. In particular, the 2SLS strategy relies on Frankel and Romer (1999). In our panel data setting, we construct a gravity-based prediction of bilateral flows for each year over the period 2004-2012. In this stage, the determinants are only exogenous variables, which cannot affect the institutional quality. Once we have obtained a predicted migration rate, we use this gravity-based migration rate as instrument in our first stage regression within a 2SLS strategy.

This method, used extensively to predict trade openness out of bilateral flows (Nelson and Zolnik, 2013), is now assimilated by the migration literature (Docquier et al., 2016; Alesina et al., 2016; Beine and Parsons, 2015; Docquier et al., 2014; Ortega and Peri, 2014). Our empirical model is represented by the following equation:

$$I_{i,t} = \alpha + \beta_1 I_{i,t-1} + \beta_2 imm_{i,t-1} + \sum_k \beta_k X^k_{i,t-1} + \varepsilon_{i,t} \quad (1)$$

where α is a constant. β_1 is the coefficient of the lagged level of institutional quality included in order to account for cumulative effect in institutions. The coefficient of interest, β_2, is important to capture the short-run effect of in-migration rate on institutional quality in the receiving region. Finally, our set of controls ($X^k_{i,t-1}$) is represented by the main determinants of institutional quality used in the existing empirical literature:

- The stock of material and immaterial infrastructure (Crescenzi et. al, 2016).
- The degree of openness measured as the ratio between the sum of export and import over GDP (Docquier et al., 2016).
- Geographic characteristics (Rodrik et al., 2004).

All the explanatory variables are lagged one year.

In order to control for the potential endogeneity of migration, we use the predicted migration rate obtained from the following gravity model to instrument $imm_{i,t-1}$ in our first stage regression (which includes the set of controls of the second stage $X^k_{i,t-1}$):

$$\ln m_{ij,t} = a_0 + a_i + b_1 \ln P_{i,t} + b_2 \ln P_{j,t} + b_3 \ln dist_{ij,t} \quad (2)$$

where $\ln m_{ij,t}$ represents the bilateral migration stocks, $\ln P_{i,t}$ and $\ln P_{j,t}$ represent the (log) of the total population of the place of destination and origin, respectively. Following Head (2010), $\ln dist_{ij,t}$ is the log of the weighted distance between the biggest city of i and the biggest city of j.

Preliminary results show that the Southern provinces, which present a negative net migration rate of skilled individuals experience lower levels of institutional quality, while on the other hand, the Northern provinces, which are more attractive in terms of skilled migration flows, obtain a higher level of institutions. In other words, the greater the skilled in-migration openness, the better the performance in terms of institutional quality.

We also find heterogeneous results when different institutional quality sub-indicators are used as dependent variables. In particular, the Nifo and Vecchione (2014) data on institutional quality reports five sub-indicators of governance such as voice and accountability, government effectiveness, regulatory quality, rule of law, and corruption, which allows us to observe differences in the short-run effect of migration.

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