

Can regional policies shape migration flows?

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European Structural and Cohesion Funds and migration flows

The EU Structural and Cohesion Funds (EUF) are the main regional policy implemented in Europe, with the aim of reducing economic gaps across areas and providing to all European regions appropriate economic and social standards.

The effects of EUF are measurable in economic and social standpoints and thus they contribute to the improvement of citizens welfare. These dynamics involve the attractiveness of regions and territory which ends up to influence the choice of where to work and live made by workers, both European and not European. Among the effects of the policies financed by EUF, we devote our attention to those on migration flows.

Migration has been studied from social, economic and institutional points of view, which mainly have in common the attempt to explain push and pull factors, potential and real impact on the economic fundamentals of countries and regions as well as effectiveness of migration policies.

Research question

To the best of our knowledge there are no studies focusing on ESF and migration flows, neither from theoretical viewpoint nor based on empirical evaluations.

Accordingly, our work tries to answer to the following questions:

- what is the impact of regional policies on migration flows between countries, regions and jurisdictions, differing in public goods supply and productive efficiency (i.e. labour market conditions)?
- Moreover what is the relationship, if any, between the European regional policy and migration?

We try to untangle both a theoretical model and an empirical analysis.
Will the results be consistent?

Theoretical background

From a theoretical standpoint, migration decision must take into account the costs resulting from moving abroad, as well as the differential in private richness in different countries or regions. The cost of moving abroad is usually attached to the distance from the origin and receiving countries or regions but, beyond the physical distance, there is a social and economic gap that cannot be neglected.

Nevertheless the complex and entangled reality of this phenomenon, we recognize two main issues to be considered, with a varying influence on migration decisions across citizens of a given region: the public goods and services supply and the labour market condition.

Theoretical background

Regions with a rich panoply of public goods exert a strong attraction on the natives of countries (or regions) not so well endowed with such public facilities (see Gabszewicz and Zanaj (2014) *inter alia*).

Availability and access to public facilities not existing in their origin country can justify migration flow also between regions where wage differential is not so significant.

In order to catch the above evoked ingredients, we define a simple model of labour mobility and fiscal competition with a role for structural funds.

Our modelling strategy is inspired by that in Gabszewicz et al. (2016) and Kanbur and Keen(1993), *inter alia*.

Basic assumptions

Two regions (not in the same country), region A and B differing in public goods supply and productive efficiency (i.e. labour market conditions).

Each region supplies a panoply of public goods and services k_i , $i = A, B$.

Without any loss of generality, region B benefits from Structural Funds while improving its public goods supply by s which then turns out to be $k_B(1 + s)$.

In region i , labor demand is represented by a continuum of firms with identical CRS so that competitive wages in region i are then $w_i = \alpha_i$ where α_i is labour productivity in region i .

Denote $l_A, l_B \in (0, 1)$ the population density in A and B. respectively.

Residents in both regions can freely move while facing a migration cost $x \in (0, 1)$.

Notice that x is the unique source of heterogeneity among residents.

Each government sets an income tax $t_i \in [0, w_i]$.

Tax revenue writes as $l_A * t_A$ and $l_B * t_B$.

The game

Two stage game: each government selects the optimal taxation while maximizing its payoff (i.e. tax revenue) and then citizens choose their optimal strategy between stay or move.

Here, we focus on the migration flows from region A to region B where B is recipient of SF.

The resident who is indifferent between the two strategy stay or move is given by the following condition

$$k_A + w_A - t_A = k_B(1 + s) + w_B - t_B - x$$
$$\text{so } x = k_B(1 + s) - k_A + w_B - w_A - (t_B - t_A)$$

Government selects the optimal taxation while maximizing its payoff which write as

$$\Pi_A = t_A(l_A(1 - x)) \text{ and } \Pi_B = t_B(l_B + l_A x)$$

N.B. this optimization problem refers to migration from A to B.

Equilibrium configuration

At equilibrium we obtain

$$t_A^* = 1 + 1/3(k_A - k_B(1 + s) - w_A + w_B) \quad \text{with } \frac{\partial t_A^*}{\partial s} < 0$$

$$t_B^* = 1 + 1/3(k_B(1 + s) - k_A + w_B - w_A) \quad \text{with } \frac{\partial t_B^*}{\partial s} > 0$$

$$x^* = 1/3(w_B - w_A - k_A + k_B(1 + s)) \quad \text{with } \frac{\partial x^*}{\partial s} > 0$$

SF have a positive impact on migration flows while increasing the share of residents who decide to move.

Notice that these results hold for the migration flows from region B to A. Indeed, at equilibrium there exists a range of parameters such that we observe a reverse migration flow. However, our attention is devoted to the migration flows from region A to region B since we are mainly interested in the role of SF.

Theoretical predictions

The contribution of SF is relevant with respect to the share of residents who decides to move and to the provision of public goods and services.

Notice however that this contribution involves two possible scenarios:

- From A to B with B more productive than A (i.e. $w_A < w_B$)
Wage differential and differences in public goods supply incentivize migration flows from region A to region B and taxation can be higher in B. Notice that the greater the wage differential, the greater the migration flows.
- From A to B with A more productive than B (i.e. $w_A > w_B$)
Although the wage differential discourages migration from region A to region B, the panoply of public goods and services in the destination is so attractive that a positive share of residents in region A decides to move in region B.
Surprisingly, the contribution of Structural Funds on public facilities allows to keep a relatively high taxation while continuing to attract migrants. However an increase in the wage differential decreases the share of residents deciding to move.

Finally, can the empirical evaluation confirm these theoretical predictions?

Methodology

Our analysis is based on the so called Regression Discontinuity Design (see, Thistlethwaite and Campbell (1960) and Lee and Lemieux (2010), inter alia). This quasi-experimental method compares the economic scenario arising under policy intervention with a counterfactual situation, what would have happened if the policy were not implemented. Accordingly, the experiment is considered randomly assigned only at the cut off point.

We exploit the allocation rule of regional EU transfers: regions with a per capita GDP level below 75% of the EU average are qualified for Objective 1 funds. We claim that non eligible regions, with a per capita GDP just above the 75% threshold (not receiving a considerable amount of EU Structural and Cohesion funds), are a very good comparison group to those just below this cut off point (receiving Objective 1 funds, called treated regions), and describe a valid counterfactual scenario.

For those regions in the interval just above and below this threshold, the assignment of the treatment (i.e. structural funds) is to be considered as randomized. In other words, the RDD is equivalent to a local random assignment around our cut off point (see for example Lee (2008)).

Data

The territorial level of interest is that defined by nomenclature 2010 NUTS2, consistently with eligibility criteria of ESF. To account for net migration, we use census data on the composition of the population in 2001 and 2011 in EU15 regions provided by Eurostat. For these regions, data provide information on citizens of the reporting country, residents coming from other EU-countries and those with extra-EU nationality.

Further, we exploit data on EU payments for Structural and Cohesion Funds from 2001 to 2011, collected on the basis of the work done by the European Commission, Directorate General for Regional and Urban Policy together with external experts (see Roemisch 2016).

Moreover, following Pellegrini et al. (2013), our empirical analysis can benefit from regional data provided by the European Commission on Structural and Cohesion Funds on certified expenditure for the years 1994-2006.

Immigrant population

Share of population with a nationality different from that of the host country

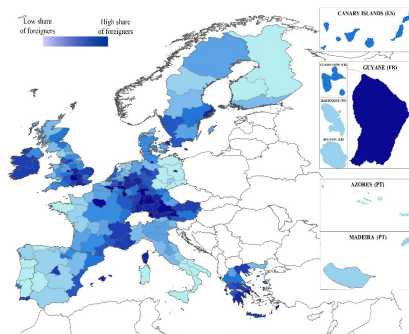


Fig. I: year 2001

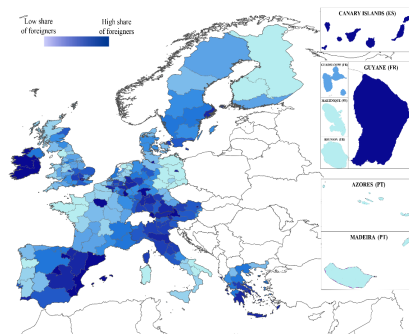
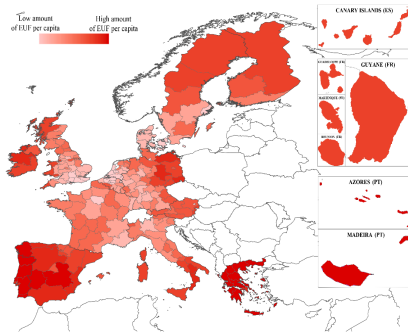


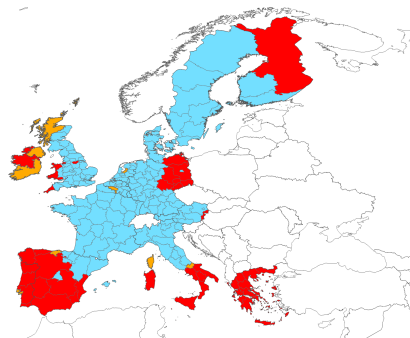
Fig. II: year 2011

Recipients of EUF

EUF per capita, period 2001-2010
(NUTS-2 regions in the EU-15)



Regions recipients of ESF (NUTS-2 regions in the EU-15)



Model Specification

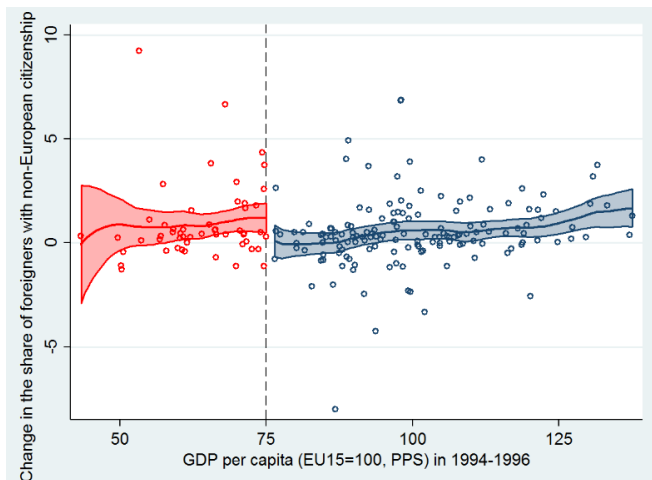
We adopt the sharp RDD framework:

$$Y = a + f(x) + \tau * D + \epsilon$$

Where Y is the dependent variable (e.g. the percentage points change in the share of foreigners with European citizenship between 2001 and 2011), x is the forcing variable (GDP per capita (EU15=100, PPS) in 1994-1996) and D is the treatment dummy while τ is a smooth polynomial function of x (in our case third order polynomial).

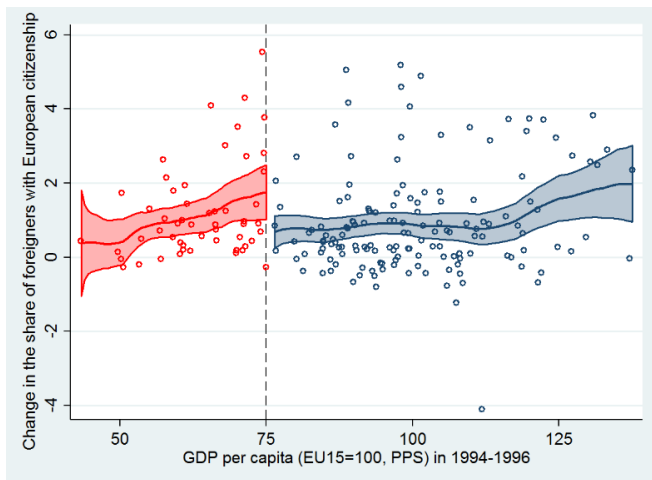
Results

Percentage points change in the share of foreigners with non European citizenship between 2001 and 2011



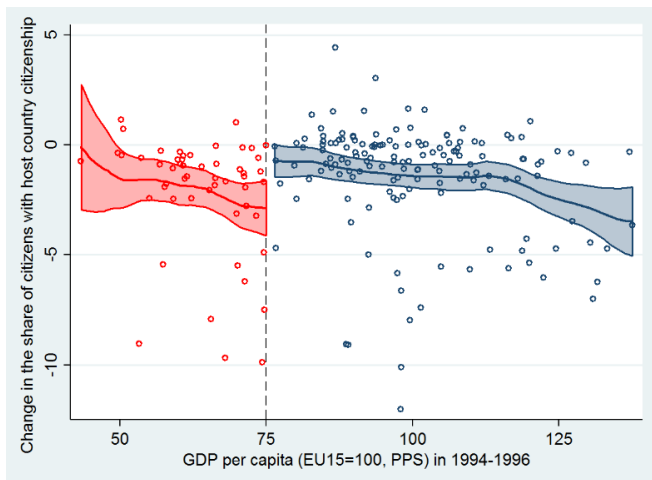
Results

Percentage points change in the share of foreigners with European citizenship between 2001 and 2011



Results

Percentage points change in the share of citizens with host country citizenship between 2001 and 2011



Estimates

	Dep. Var.: Difference in percentage of foreigners (2011-2001)		Dep. Var.: Difference in percentage of Europeans (2011-2001)		Dep. Var.: Difference in percentage of citizens with a non-European nationality (2011-2001)		Dep. Var.: Percentage of foreigners with a EU27 citizenship (2011)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dummy Ob.1	0.0251 (0.0087)***	0.0161 (0.0090)*	0.0115 (0.0047)**	0.0046 (0.0048)	0.0136 (0.0057)**	0.0115 (0.0063)*	0.0060 (0.0068)	0.0053 (0.0074)
Other covariates	No	Yes	No	Yes	No	Yes	No	Yes
R-squared	0.0681	0.1783	0.0513	0.2555	0.0447	0.1370	0.1234	0.2251
Nb. of treated regions	53	53	53	53	53	53	53	53
Nb. of non-treated regions	150	150	150	150	150	150	150	150

Conclusions

Our work investigates the role of SF in shaping migration flows, both theoretically and empirically.

Predictions of the theoretical model are partially confirmed by the empirical findings

Finally, this work complements the extended literature on the determinants of migration decisions while identifying SF as pull factors in migration decision. Further this analysis addresses the stream of literature focusing on the effect of regional policies in the European Union.

Indeed, regional policies aimed at improving the panoply of public goods and services contribute to shape migration flows.