Place Based Policies with Local Voting

Lessons From the EU Cohesion Policy

Leonardo D'Amico*

Princeton University

This version: December 2025. First version: June 2021

Abstract

Why is it so hard for regional transfers to spur growth in poor regions? I develop a general equilibrium spatial model with local voting and provide an explanation based on the political economy incentives faced by local governments in charge of spending these transfers. Incumbent unskilled political majorities in poor regions, even when fully sophisticated, may want to use regional transfers to protect pre-existing declining industries, where they are employed, rather than to attract new productive ones. As regional transfers get diverted to unskilled sectors, the recipient region becomes even more intensive in such sectors and, in turn, poorer. The policy may also lower the aggregate welfare of unskilled workers, as the politically feasible allocation can inefficiently distort location choices. I test the predictions of the model using data from the EU Cohesion Policy. I find that EU transfers are less likely to be invested towards technological development and innovation in regions with many unskilled workers, which in turn leads to fewer jobs created per euro. Consistent with the theory, both of these facts occur only when local governments manage the funds, but not when these are managed by local authorities who are appointed by the central government. This political economy explanation of why regional transfers may fail complements extant theories based on corruption or voters' myopia, and offers distinct policy implications.

*leonardo.damico@chicagobooth.edu. I am especially indebted to Alberto Alesina for his advice and relentless encouragement. I am grateful to Adrien Bilal, Edward Glaeser, Stefanie Stantcheva, Guido Tabellini, and Marco Tabellini for numerous essential comments. I thank Constanza Abuin, Maxim Alekseev, Pietro Buri, Guido De Blasio, Pablo Fajgelbaum, Cécile Gaubert, Luigi Guiso, Gordon Hanson, Oliver Hart, Lawrence Katz, Gabriel Kreindler, Claudia Marangon, Ross Mattheis, Armando Miano, Namrata Narain, Daniel O'Connor, Marco Panunzi, Paolo Pinotti, Giacomo Ponzetto, Ken Rogoff, Giorgio Saponaro, Cailin Slattery, Andrei Shleifer, Elena Stella, and Lawrence Summers for helpful comments and discussions; as well as the participants at the NBER Urban Economics Summer Institute, at the Conference on Urban and Regional Economics and at the UEA North American meeting; and workshops at Bocconi University, EIEF, Harvard University, University of Barcelona, and the University of Münster. Damiano Raimondo provided excellent research assistance, and I thank the "Pathways to Research and Doctoral Careers" program at the University of Chicago for funding.

"The nearly 17 million Appalachian residents [...] lag far behind in their participation in our prosperity. The bill that I will now sign will work no miracles overnight. Whether it works at all depends not upon the Federal Government alone but the States and the local governments as well."

— President Lyndon Baines Johnson, upon signing the Appalachian Regional Development Act (March 9, 1965)

"In order to promote its overall harmonious development, [...] the Union shall aim at reducing disparities between the levels of development of the various regions and the backwardness of the least favoured regions."

— Article 174 of the Treaty on the Functioning of the European Union

Introduction

In both the US and the EU, regional differences in economic conditions have been the object of much effort from policymakers, which implemented substantial transfers to poor regions in the hope of spurring growth. Yet, sixty years after President Johnson signed the Appalachian Regional Development Act, earnings per capita in Appalachia are only two thirds of the US average, even lower than when the government started the program (Appalachian Regional Commission, 2015). Thirty-five years after the start of the EU "Cohesion Policy", Europe's largest ever place based redistributive policy, differences in economic conditions in the EU-15 are even larger than at its onset (Ehrlich and Overman, 2020). Causal evidence also shows that these policies rarely manage to induce growth.[1] What stands in the way? This paper introduces an explanation that focuses on the political incentives faced by local governments, who are often in charge of such policies and are politically rewarded for them (Slattery, 2024).

Regional transfers are often framed as transformative interventions that can put declining places onto new trajectories and create new "good jobs". The opening of a new semiconductor plant, the technological revitalization of an old artisanal district, the establishment of a state-of-the-art research center. In being transformative, these investments usually require a fair degree of skill-bias. Making way to chipmaking, for instance, requires subsidizing advanced industries, attracting a skilled workforce, and re-training the incumbent one. The policy adage is that these skill-biased investments bring growth to the region at large, "trickling down" to the incumbent workforce: even

[1] See, for instance, Becker et al. (2013), Accetturo et al. (2014), Ciani and de Blasio (2015), Barone et al. (2016), De Angelis et al. (2018), Becker et al. (2018), and Accetturo and de Blasio (2019). Ehrlich (2024) provides a recent review on the effects of the EU Cohesion Policy.

the "old" shoemakers will benefit from the "new" incoming chipmakers. But what if re-skilling is not as easy, or spillovers are not as large, so that the incumbent workforce prefers to directly subsidize their own sector, rather than encouraging transformation? More generally, what are the implications for regional transfers when incumbent workers decide how to spend them?

The core message of this paper is that local voting can make regional transfers counterproductive. Upon receiving a regional transfer, incumbent low skilled workers who hold the political power in low skilled intensive regions might rationally prefer to subsidize their own industry, instead of attracting new high skilled industries. This can make declining places even more concentrated in declining industries and can end up increasing regional inequality, the opposite of the national government's stated goal. The fact that people vote, not places, turns a policy that is aimed at helping declining places into a policy that ends up helping only some people in some places—at the expense of the place at large. Because this political capture can further distort the location of workers, the regional transfer can also come at the expense of aggregate welfare. That is, a policy intended to help low income places can end up hurting low income workers in the aggregate.

To formalize the argument, I consider a two period model with two types of worker-voters—low and high skilled—who vote and decide where to live. Workers have arbitrary spillovers onto each other within each region—which can be interpreted as a reduced-form way to capture interactions among workers. In the first period, the economy starts from a competitive equilibrium with no transfers, and workers decide where to live. The national government then announces an arbitrary set of transfers to some regions, leaving to their incumbent workforce the decision on how to spend them. Incumbent workers vote on whether to subsidize the high or the low skilled sector, and then all workers move again in the second period given the announced distribution of transfers.[2]

The model yields a simple sufficient statistic that characterizes voting choices. The benefit of subsidizing a worker's own sector is the sum of the direct value of the transfer and the indirect general equilibrium effects from other workers moving in or out of the region as a result of the spatial subsidy. The benefit or cost of subsidizing another type's sector comes only from the indirect effects. Such indirect effects include negative congestion forces (e.g., higher housing prices from additional workers moving in), as well as positive productivity spillovers (e.g., from attracting high skilled workers).[3]

[2]Modeling place based policies as transfers to a given type of worker in a given region follows the standard representation in the literature (as in Fajgelbaum and Gaubert, 2020). The additional simplifying assumption here only concerns the binary nature of the voting choice. My mechanism would not be at play if investments were not skill-biased. That is, if there existed projects that made the region more productive for everyone, with no trade-off between productivity and subsidies to specific types of workers. Yet, many investments are skill-biased in nature, and the model is kept purposefully simple so as to focus on this situation. In this case, a political conflict between high and low skilled workers arises and the model makes clear what are the conditions for this conflict to stifle growth.

[3]These indirect effects can be asymmetric across types, for instance because learning spillovers are higher among

Low skilled workers vote to subsidize their own sectors when the spillovers they receive from high skilled workers are moderate, even if positive (which is the likely empirically relevant scenario, Ciccone and Hall, 1996; Diamond, 2016), and/or high skilled workers' migration response to transfers is small. In these cases, shoemakers protect shoemaking because it is more beneficial to them than chipmaking. This makes unproductive regions even more intensive in shoemaking and, in turn, more unproductive. Furthermore, if low skilled workers create congestion on high skilled workers, this pushes the high skilled workers to leave and amplifies the productivity decline.

This regional transfer can be self-defeating also in terms of aggregate low skilled welfare, as a wedge emerges between what is politically feasible and what improves the spatial allocation of workers from the perspective of the low skilled. When workers sort across space based on their skill type and spillovers from the high skilled to the low skilled are positive, the average low skilled worker would be made better off by dampening the initial sorting. That is, attracting high skilled workers to low skilled regions can improve aggregate welfare (as in Fajgelbaum and Gaubert, 2020). However, exactly because of this initial sorting, the political power in low skilled regions is in the hands of a low skilled majority that privately prefers to capture the transfer, rather than attracting high skilled workers. This further reinforces the initial sorting, making low skilled regions even more attractive for low skilled workers, which decreases aggregate welfare. This wedge between political feasibility and allocative efficiency highlights a perverse dynamic that complicates the policymaker's problem in a world of increasing sorting by skill across regions (Diamond and Gaubert, 2022). While higher sorting can provide a rationale for redistributing workers across space, it is also the reason why this redistribution is unfeasible when local governments control regional transfers.

I bring the ideas of the model to the data by analyzing how place based transfers were invested during the 2007–13 tranche of the EU Cohesion Policy and how this affected the economic outcomes of the policy. The first prediction of the model is that, if funds are managed by local governments and spillovers are not too large, funds will be slanted towards the incumbent majority's sector. To test this, I manually inspect all operational programmes in the 2007–13 tranche and categorize whether the authorities in charge were either national (e.g. ministries of the central government), local but centrally appointed (e.g. prefects in France), or local and regionally elected (local governments). I then study whether different types of authorities used funds for different endeavors based on the local composition of the workforce. My main outcome of interest is the fraction of funds spent in technological development for firms, innovation, and research (TD&I).[4]

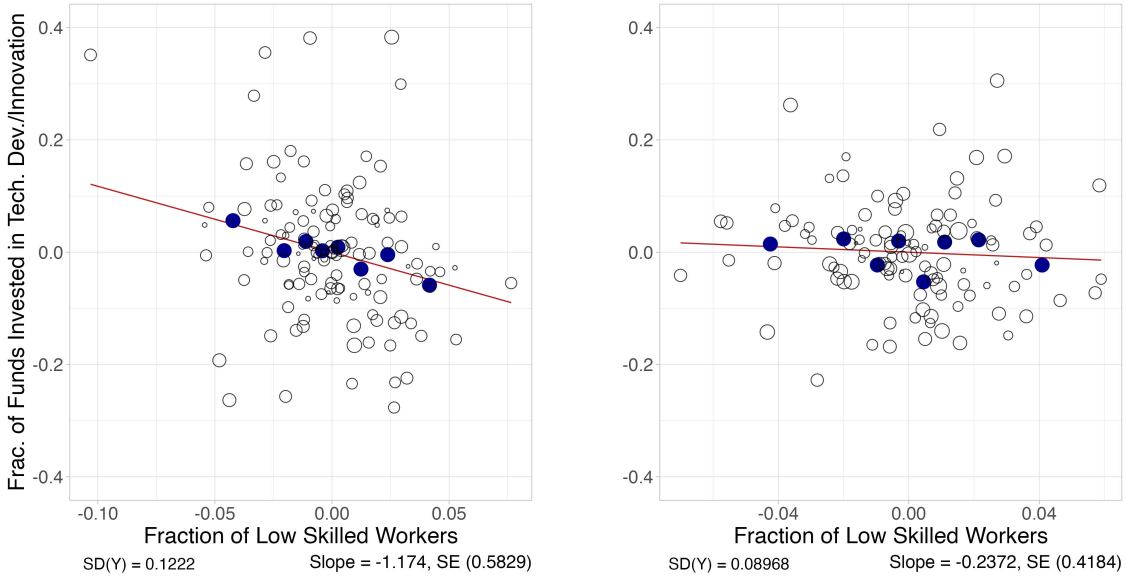
high skilled workers, or because within-region sorting of high skilled workers might have negative effects on workers at the bottom of the income distribution (e.g., via gentrification, as in Couture et al., 2024). This sort of asymmetries likely reinforce low skilled workers' incentives to protect their sector instead of attracting high skilled workers.

[4]Such projects cover around one eighth of the total funds invested. They are a good proxy for investments that benefit high skilled workers more than low skilled ones, and are usually regarded as vital to foster economic growth.

FIGURE 1: REGIONAL INVESTMENT IN TECHNOLOGICAL DEVELOPMENT AND INNOVATION VS. FRACTION OF LOW SKILLED INDIVIDUALS, BY TYPE OF PROGRAM

(A) REGIONAL PROGRAMS MANAGED BY LOCAL GOVERNMENTS

(B) REGIONAL PROGRAMS MANAGED BY NATIONALLY APPOINTED AUTHORITIES



Note: the figure reports the residual of the fraction of funds invested in technological development for firms, innovation, and research at the NUTS2 level in 2007–14 (on the y-axes) against the residual of the fraction of low skilled individuals at the NUTS2 level in 2007 (on the x-axes), across 236 EU regions. Residuals are obtained by regressing each variable on country fixed effects and regional characteristics, as detailed in Appendix Section B.3. Panel (A) considers funds managed by local governments, while Panel (B) considers funds managed by local authorities appointed by the central government. Each circle represents a NUTS2 region, while solid points report binned means. The size of the circle is proportional to log GDP in 2007 at the NUTS2 level. Standard errors are robust to heteroskedasticity.

Figure 1 reports the gist of these findings. It plots the fraction of funds spent towards TD&I in a given region against the fraction of low skilled workers in that region, after partialing out country fixed effects and controls for sectoral composition of employment and other economic and demographic characteristics. In the left panel, I plot this relationship for programs managed by local governments, who cater to local voters. The right panel focuses instead on programs that are managed by centrally appointed authorities who do not run for local elections but are still based in the region (e.g. prefectures and special development agencies). These two types of authorities thus face the same local information set, only different local political incentives.

EU funds are less likely to be invested in TD&I in regions with many low skilled workers, but only if programs are managed by local governments. When local governments are in charge of the funds, a five percentage point increase in the fraction of low skilled workers (57% of the SD across regions) is associated with a 5.9 p.p. reduction of the fraction of funds invested in TD&I (28% at the mean). In monetary terms, local governments in a region with 5 p.p. more low skilled workers

invested on average €59 million less in TD&I over the 2007–13 cycle. These local governments substituted TD&I investment with other non technology-intensive subsidies to firms, rather than with other productive investments.

The negative correlation between technological investment and the fraction of low skilled workers also holds within broad sectoral aggregates targeted (22 aggregates), with the coefficient decreasing by a third when adding sector fixed effects. That is, local governments in low skilled regions are less likely to choose technologically advanced projects even within the same targeted sector. They are choosing shoemaking over chipmaking, not only manufacturing over research. I confirm this finding in a case study for Italy, where I can use even more precise payment-level evidence that distinguishes between knowledge-intensive and unskilled subsectors.

The second prediction of the model is that slanting expenditure for political returns has effects on growth—something that, unfortunately, cannot be credibly tested by relying on aggregate regional growth data. To test this prediction, I use a dataset collected by the Commission as part of its evaluation of the Cohesion Policy, which reports data on jobs created by each investment program. In regions with many low skilled workers, local governments create fewer jobs per euro relative to local governments in regions with fewer low skilled workers. In line with the evidence on types of expenditure, this does not occur when funds are managed by local authorities that are centrally-appointed, again suggestive of political motivations. I also review several examples from the literature that show that regional policies fail or are less effective in regions with many low skilled workers (Becker et al., 2013; Ciani and de Blasio, 2015; Barone et al., 2016; Accetturo and de Blasio, 2019; Albanese et al., 2021) and when they are subject to local political control (Felice and Lepore, 2017; Cingano et al., 2025; Buscemi and Romani, 2022).

In addition to the studies on the EU Cohesion Policy mentioned above, this work is mainly related to two strands of literature. First, it contributes to a relatively small strand of the theoretical literature that merges spatial economics and political economy (Tiebout, 1956; Bewley, 1981; Epple and Romer, 1991; Fernandez and Rogerson, 1996; Glaeser and Shleifer, 2005; Calabrese et al., 2006; Alesina et al., 2015).[5] To study the joint relationship between location and voting choices, this part of the literature puts restrictions on either the spatial structure of the economy or on sorting patterns, which yields tractability of political choices at the expense of the richness of spatial ones.[6] I propose a different approach that nests modern spatial models and, based on local perturbations around an initial equilibrium, still yields tractable voting choices.

Second, this paper adds to the strand of the literature that studies the rationales and effects of

[5]On the empirical side, a recent related paper is Slattery (2024), who studies discretionary place-based subsidies in the US and shows that subsidy-giving can have large electoral returns for local governments.

[6]Fajgelbaum et al. (2024) recently incorporate voters' preferences in a quantitative spatial model. Their objective is to characterize voters' preferences for a state-level referendum, rather than studying the feedback between voting, local policies, and location choices.

place based policies (Glaeser and Gottlieb, 2008; Moretti, 2011; Kline and Moretti, 2014; Austin et al., 2018; Fajgelbaum and Gaubert, 2020; Slattery and Zidar, 2020; Davis and Gregory, 2022; Fajgelbaum and Gaubert, 2025; Gaubert et al., 2025b; Hanson et al., 2025; Donald et al., 2025; see Neumark and Simpson, 2015 and Gaubert et al., 2025a for recent reviews). I build on this debate and show that, even with an optimistic view on place based policies, some improvements might be unattainable due to the presence of political economy constraints, which can substantially complicate the planner's problem. In my main application, skill-based sorting across regions can provide efficiency rationales to redistribute workers of a given type to where they are scarce (as in Fajgelbaum and Gaubert, 2020). However, when incumbent local voters hold the political power, this same initial sorting makes the optimal transfer politically unfeasible to implement. Moreover, the politically feasible one ends up worsening the spatial distribution of workers because it reinforces the initial sorting.

Finally, the political channel developed here complements other explanations of why place based policies may fail, which traditionally focused on funds being misappropriated and plagued by corruption, on opportunistic politicians, or other forms of weak institutions (e.g., Brollo et al., 2013; Accetturo et al., 2014; Crescenzi et al., 2016; De Angelis et al., 2018; Pereira dos Santos et al., 2022). The channel presented here arises even fixing the quality of institutions: it is the positive outcome of a political conflict between heterogeneous workers on how to spend regional transfers.

1 Theoretical Framework

This Section outlines the theoretical framework. Sections 1.1 and 1.2 set up and solve a two-period model of place based policies under local voting, where a central government endows some regions with a transfer and local governments decide how to spend it. In Section 1.3, I apply the model to evaluate the effect of a convergence-seeking transfer in an economy with rich and poor regions.

1.1 Setup

Agents live two periods, $t = 0,1$, and are mobile in both. The economy is governed by a spatial and a political equilibrium, to be defined below.

Spatial Part The economy is populated by L^θ workers of type θ, who can be either low or high skilled ($\theta \in \Theta = \{L, H\}$), and a continuum of cities $j \in \mathcal{J}$. Each worker lives and works in a city j at time t, and $L^\theta_{j,t}$ denotes the number of workers of type θ in city j at time t.

In every period, all individuals consume a nationally traded good which is produced in each city by labor only. In order to consume, workers inelastically supply substitutable effective labor units of z_{jt}^L and z_{jt}^H; so that total production in a city, Y_{jt}, is $Y_{jt} = z_{jt}^L L_{jt}^L + z_{jt}^H L_{jt}^H$.[7] To capture spillovers, such productivities can potentially depend on the amount of workers in the city. Atomistic firms offer workers their marginal product, taking as fixed the distribution of effective labor units in each city. The wage of each worker of type θ, w_{jt}^θ, is thus equal to the effective labor units she supplies, $w_{jt}^\theta = z_{jt}^\theta$. The worker may also receive a type- and place based transfer from the government of $\tau_{jt}^\theta \geq 1$, and a type and place blind tax of $\bar{\tau}_t \leq 1$, so that total consumption is $c_{jt}^\theta = z_{jt}^\theta \tau_{jt}^\theta \bar{\tau}_t$.[8] In addition to consuming goods, individuals enjoy type- and city-specific amenities a_{jt}^θ, which can also be a function of city sizes. Utility of a worker i, of type θ, in city j, at time t, is:

$$u_{ijt}^\theta = a_{jt}^\theta z_{jt}^\theta \tau_{jt}^\theta \bar{\tau}_t \varepsilon_{ij}^\theta$$

where ε_{ij}^θ is an idiosyncratic taste of worker i for city j, assumed to be Fréchet distributed with shape σ_θ and drawn in period 0. As in Fajgelbaum and Gaubert (2020), within-city spillovers are captured by allowing a_{jt}^θ and z_{jt}^θ to be flexible city-and-type specific functions of city sizes, which serve as a reduced-form representation of agglomeration and congestion forces. That is:

$$a_{jt}^\theta = a_j^\theta(L_{jt}^L, L_{jt}^H); \qquad z_{jt}^\theta = z_j^\theta(L_{jt}^L, L_{jt}^H)$$

and spillovers of worker θ' on θ in amenities and productivity are denoted, respectively, as $\gamma_{\theta',\theta}^{A,j} := \partial \log a_j^\theta / \partial \log L_j^{\theta'}$ and $\gamma_{\theta',\theta}^{P,j} := \partial \log z_j^\theta / \partial \log L_j^{\theta'}$ for all θ, θ'.

Let boldface letters denote the vector of all labor allocations and transfers, i.e. $\mathbf{L}_t = \{(L_{jt}^L, L_{jt}^H)\}_{j \in \mathcal{J}}$ and $\boldsymbol{\tau}_t = \{\bar{\tau}_t, (\tau_{jt}^L, \tau_{jt}^H)_{j \in \mathcal{J}}\}$. An interior spatial equilibrium is as follows.

Definition 1 (Regular Spatial Equilibrium)**.** *Given $\boldsymbol{\tau}_t$, an allocation $\mathbf{L}_t$ constitutes a regular spatial equilibrium if:*

$$\textit{for all i,j such that i lives in j at time t} \qquad u_{ijt}^\theta \geq u_{ikt}^\theta \quad \textit{for all cities } k \in \mathcal{J} \tag{1}$$

[7] Perfect substitutability across workers only saves on notation, but does not impact the conclusions. A CES aggregator across different types of workers would simply require carrying around the degree of substitutability across workers in the spillovers that workers have on each others' wages. Since I will allow for arbitrary spillovers, intended as reduced form metaphors for interactions across workers, one can read them as including labor market substitutability. Of course, a quantitative application would have to make this explicit.

[8] Allowing for a type-specific place-blind tax does not affect any of the results, but matters for aggregate welfare. When discussing aggregate welfare in Section 1.3.2, I will consider appropriate type-specific place-blind taxes.

Under the feasibility constraint on the total number of workers:

$$\int L_{jt}^{\theta}\, dj = L^{\theta} \quad \textit{for all } \theta \tag{2}$$

Thus, agents choose every period where to live in order to maximize their current utility—which makes the migration choice static. Given the distributional assumptions on the taste shock, sizes satisfy:

$$\frac{L_{jt}^{\theta}}{L^{\theta}} = \frac{\left(a_{jt}^{\theta} z_{jt}^{\theta} \tau_{jt}^{\theta} \bar{\tau}_t\right)^{1/\sigma_\theta}}{\int \left(a_{jt}^{\theta} z_{jt}^{\theta} \tau_{jt}^{\theta} \bar{\tau}_t\right)^{1/\sigma_\theta} dj} \tag{3}$$

Policy and Timing The policy consists in a transfer from the central government to some regions, and the timing is as follows.

— In period 0, the economy starts from a competitive equilibrium, where $\tau_{j0}^{\theta} = 1$ for all j, θ, $\bar{\tau}_0 = 1$, and sizes satisfy (3).[9]

— Between period 0 and 1:

  – the national government announces that in period 1 it will endow cities in a set $\mathcal{J}' \subset \mathcal{J}$ with transfers of $\{t_{j1}\}_{j \in \mathcal{J}'}$, that will be paid for via a lump sum tax of $\bar{\tau}_1$ on all workers. This announcement is unexpected in period 0.

  – local governments in each $j \in \mathcal{J}'$ hold elections on whether to allocate the transfer to low or high skilled workers, and then announce that they will implement the winning transfer.

— In period 1, workers migrate to re-establish the spatial equilibrium, given the array of transfers announced. Production then takes place, transfers are disbursed, and taxes are levied. The tax rate satisfies the aggregate budget constraint, which is:

$$\int \sum_{\theta} L_{j1}^{\theta} z_{j1}^{\theta} \tau_{j1}^{\theta} \bar{\tau}_1 dj = \int \sum_{\theta} L_{j1}^{\theta} z_{j1}^{\theta} dj \tag{4}$$

Political Part Having defined the spatial equilibrium and the policy, it is possible to define the political equilibrium that governs how transfers within each region are spent. The within-city allocation is decided according to the will of the incumbent local constituents, who need to make the binary choice of whom to allocate the transfer that will be disbursed in the next period, under the local budget constraint.

[9] Starting from a pre-existing set of transfers can be easily introduced.

Definition 2 (Voter's Problem)**.** *Given an announced regional transfer of t_{jt}, a voter i that lives in city j at $t-1$ chooses whether the transfer will go to the low or the high skilled workers by solving:*

$$\begin{aligned} \mathcal{P}_i^\theta := \max_{\theta^*=L,H} \quad & u_{ijt}^\theta(\tau_{jt}^L, \tau_{jt}^H, L_{jt}^L, L_{jt}^H) \\ s.t. \quad & \mathbf{L}_t \text{ satisfies (3)} \\ & L_{jt}^\theta z_{jt}^\theta(\tau_{jt}^\theta - 1) = t_{jt} \qquad \text{for } \theta = \theta^* \qquad (5) \\ & \tau_{jt}^\theta = 1 \qquad \text{for } \theta \neq \theta^* \qquad (6) \end{aligned}$$

where the first constraint is the spatial equilibrium constraint, the second is the local government budget constraint, and the last one forces the choice to be binary.[10]

It is now possible to define the political equilibrium.

Definition 3 (Local Political Equilibrium)**.** *Given an initial allocation of workers $\mathbf{L}_0$ and a transfer t_{j1} to region j, a feasible subsidy profile $\boldsymbol{\tau}_{j1}^*$ constitutes a political equilibrium if it is the bliss point of the majority of workers among those incumbent in city j at time 0.*

Lemma 1. *If voters i and i' are of the same type, then $\arg\max \mathcal{P}_i^\theta = \arg\max \mathcal{P}_{i'}^\theta$. Thus, letting $\hat{\theta}_{jt}$ be the majority type in the incumbent population in j at time t, a feasible subsidy profile $\boldsymbol{\tau}_{j1}^*$ constitutes a political equilibrium if and only if $\boldsymbol{\tau}_{j1}^*$ is type $\hat{\theta}_{j0}$'s bliss point.*

Proof. Each voter within a group will maximize the same objective function, up to multiplicative differences in taste. Thus, there is no within-group heterogeneity in voting preferences. □

Equilibrium It is possible to finally define the overall equilibrium of the economy.

Definition 4 (Equilibrium)**.** *Given a regional transfer t_{j1} to regions $j \in \mathcal{J}'$, an allocation of workers and type-specific transfers, $(\mathbf{L}_t, \boldsymbol{\tau}_t)_{t=0,1}$, is an equilibrium if:*

1. Given $\boldsymbol{\tau}_t$, $\mathbf{L}_t$ is a spatial equilibrium at all t.
2. Given $\mathbf{L}_0$, $\boldsymbol{\tau}_{j1}$ is a local political equilibrium in all cities $j \in \mathcal{J}'$.
3. The central government's budget is balanced, i.e. (4) holds, and all local governments' budgets are balanced, i.e. (5) and (6) hold for all $j \in \mathcal{J}'$.

[10] The problem is formulated as if voters assume they will stay in the city. This excludes the possibility that voters could want to vote for policies in their city so as to indirectly affect utilities in the other cities to which they plan to move. If cities are small, however, this is without loss of generality since each single city in isolation has no effect on utilities in other cities.

1.2 Solution

Solving the model requires characterizing the voting preferences, since the spatial part is standard given the transfers. When voting, workers realize that transfers have a direct effect on utility, by raising consumption of the type of workers that receive it, as well as an indirect effect, by affecting city sizes. If spillovers are constant elasticity, the relative benefits of different allocations be stated in terms of primitives around a competitive equilibrium. We characterize the voting choice in this simpler and transparent case, while Appendix Section A.1 derives the voting condition in the more general case.

Proposition 1 (Voting Solution)**.** *For a worker of type θ, denote with g^θ the relative benefit of capturing the transfer rather than allocating it to a worker of the other type ($\neg\theta$). So that a worker of type θ prefers to capture a transfer if and only if $g^\theta \geq 0$. Around a competitive equilibrium with no transfers, the sign of g^θ is given by:*

$$sign\left(g^\theta\right) = \underbrace{1}_{\text{Direct effect}} + \underbrace{\sum_{\theta'=L,H} \left(\underbrace{\gamma^A_{\theta',\theta} + \gamma^P_{\theta',\theta}}_{\text{Spillovers from } \theta' \text{ to } \theta} \right) \cdot \left(\underbrace{\varepsilon^\tau_{\theta,\theta'} - \varepsilon^\tau_{\neg\theta,\theta'} \frac{Y^\theta_{j,0}}{Y^{\neg\theta}_{j,0}}}_{\substack{\Delta \text{ in migration response of } \theta' \\ \text{when transfer goes to } \theta \text{ vs. } \neg\theta}} \right)}_{\Delta \text{ in general equilibrium effects when transfer goes to } \theta \text{ vs. } \neg\theta} \tag{7}$$

where $Y^\theta_{j,0}$ is the GDP produced by type θ in region j in the competitive equilibrium, and where $\varepsilon^\tau_{\theta,\theta'} = \partial \log L^{\theta'}_{jt} / \partial \log \tau^\theta_{jt}$ is the migration elasticity of type θ' with respect to a subsidy to θ.[11]

Proof. See Appendix Section A.1. □

Equation (7) yields a sufficient statistic in terms of primitives and data ($Y^\theta_{j,0}$, $Y^{\neg\theta}_{j,0}$) that allows to derive the relative incentives of a voter in any city. The first term, indexed to 1, is the direct increase in consumption. The second term captures the indirect spillovers from each type θ' to θ (first parenthesis), weighted by the differential migration response of θ' in the two different allocations of transfers (second parenthesis). This second parenthesis is the difference in the migration responses of type θ' between when the transfer goes to type θ, causing a migration response of $\varepsilon_{\theta,\theta'}$, and when the transfer goes to type $\neg\theta$, causing a migration response of $\varepsilon_{\neg\theta,\theta'}$.[12] These migration responses

[11] This is constant across cities and time if spillovers are constant elasticities. See Equation (14) for the derivation of the migration elasticities.

[12] The migration response $\varepsilon_{\neg\theta,\theta'}$ is weighted by the fraction of region's j GDP that is produced by type θ relative to type $\neg\theta$. This effect comes from the local government budget constraint and captures the fact that, if type θ accounts for a large fraction of regional GDP relative to $\neg\theta$, the subsidy to type $\neg\theta$ will be higher for the same amount of t_j the local government is endowed, since it is a subsidy on a smaller tax base. Thus, in relative terms, a subsidy to type $\neg\theta$ will induce a larger migration response out of the fact that the lower tax base allows the government to grant a higher

naturally depend, in turn, on the migration frictions, σ_θ and $\sigma_{\neg\theta}$, and on the spillovers that workers have onto each other.

The sufficient statistic elucidates how voters trade-off benefits and costs of the spatial policy. Some examples are useful to explore some of its implications and to fix the intuition. Assume, for instance, that low and high skilled workers work have no productive interactions among each other, so that workers only create congestion spillovers, captured by $\gamma_A < 0$. Assume also that they face the same migration frictions ($\sigma_H = \sigma_L = \sigma$). In this case, Equation (7) becomes $g^\theta \propto \sigma - \gamma^A(1+\tilde{y})$ where $\tilde{y}$ is the share of local GDP created by type θ over that created by type $\neg\theta$ in the initial equilibrium, $\tilde{y} = {}^{Y^\theta_{j,0}}/_{Y^{\neg\theta}_{j,0}}$. Then g^θ is always positive, since $\gamma^A < 0$ and $\tilde{y} > 0$. That is, type θ will always want to capture the transfer because the inflow of the other type creates only congestion.

For a less trivial case, assume that low skilled workers create congestion on other low skilled workers and no productive spillovers. High skilled workers create instead positive productive spillovers on all workers and no congestion. That is, $\gamma^A_{L,L} < 0, \gamma^P_{H,L} > 0, \gamma^P_{H,H} > 0$ and all other spillovers are zero. Migration frictions are kept different, so to capture that one group might be more mobile than the other. Will the low skilled want to attract the high skilled, or will they want to capture the transfer? The sufficient statistic is:

$$g^L \propto 1 + \gamma^A_{L,L}(\varepsilon_{L,L} - \varepsilon_{H,L}\tilde{y}) + \gamma^P_{H,L}(\varepsilon_{L,H} - \varepsilon_{H,H}\tilde{y})$$

where again denote by $\tilde{y}$ the ratio of local GDP created by type L over that created by type H in the initial equilibrium, $\tilde{y} = {}^{Y^L_{j,0}}/_{Y^H_{j,0}}$. Substituting in the migration elasticities, one can show that the low skilled will be willing to part with the transfer and give it to the high skilled if and only if:

$$\underbrace{\gamma^P_{H,L}}_{\substack{\text{Positive Spillover}\\ \text{from High Skilled}\\ \text{to Low Skilled}}} \times \underbrace{\underbrace{\frac{1}{\sigma_H - \gamma^P_{H,H}}}_{\text{Migration Friction}} \times \underbrace{\tilde{y}}_{\text{Fiscal Multiplier}}}_{\text{High Skilled Migration Response}} > 1 \tag{8}$$

The first term is the positive spillover that H has on L: the direct increase in utility coming from the fact that the productivity of low skilled workers increases when more high skilled workers are around. The second term is the migration response of high skilled workers to a transfer. This depends negatively on the migration friction σ_H, positively on the spillovers that high skilled workers have on each other, and positively on $\tilde{y}$. The spillover $\gamma^P_{H,H} > 0$ affects the migration response by creating a crowd-in effect that amplifies migration responses: More high skilled workers migrating

proportional subsidy. This weighting applies only to $\varepsilon_{\neg\theta,\theta'}$ just because the direct effect is indexed to 1. Equation (17) in Appendix Section A.1 expresses the condition in absolute terms.

to a region will make it better for other high skilled to come, since they affect each other positively. $\tilde{y}$ affects the migration response due to the local government's budget constraint. The lower the share of GDP created by high skilled workers in the initial equilibrium (the higher $\tilde{y}$), the higher proportional transfer can the local government afford to give to high skilled workers given a fixed budget of t_j.

The next Section applies the model to study the effects of place based transfers that try to achieve regional convergence by transferring resources from richer to poorer regions. To do so, I assume standard functional forms that allow me to solve analytically for the spatial equilibrium and endogenously deliver an economy with rich and poor regions that motivates the central government to intervene. This application shows that, due to local voting and migration, place based transfers can be self-defeating and end up increasing regional inequality.

1.3 An Application to Place Based Policies for Regional Convergence

This section develops the example of a central government that transfers resources to poorer regions to achieve regional convergence. In the interest of parsimony, the economy features a simple representation of congestion and agglomeration forces, and is kept purposefully minimal. These simplifications, stated below, can be relaxed at no expense to the key intuition.

The economy will be made by many cities divided across two regions, the North and the South, which are identical except for the fact that high skilled workers have an exogenous preference for amenities in the North, compared to the South. Under no transfers, this will create an initial equilibrium where the high skilled workers are endogenously more abundant in the North, and the low skilled ones in the South. Since high skilled workers are more productive than low skilled ones, the North will also be richer (in terms of product per capita) than the South—which motivates a planner concerned with regional inequality to transfer resources to the South. Formally:

A1 Economy: low and high skilled workers are in equal number, $L^L = L^H = J$, and they have the same variance of taste shocks ($\sigma_L = \sigma_H = \sigma$). Cities are in large number but of two types. There is a measure 1 of cities in the set N (North), denoted with $j = n$, and a measure 1 of cities in S (South), denoted with $j = s$.

A2 Spillovers: amenities and productivity are Cobb-Douglas. In particular:

$$a_{jt}^{\theta} = \iota_j^{\theta}(L_{jt}^{L})^{\gamma_{L,\theta}^{A}}(L_{jt}^{H})^{\gamma_{H,\theta}^{A}}; \quad z_{jt}^{\theta} = \phi_j^{\theta}(L_{jt}^{L})^{\gamma_{L,\theta}^{P}}(L_{jt}^{H})^{\gamma_{H,\theta}^{P}}$$

where $\iota_j^{\theta}, \phi_j^{\theta}$ are exogenous amenity and productivity shifters, respectively. All workers create identical congestion spillovers onto each other, captured by the fact that amenities are

a decreasing function of city size. Agglomeration comes from high skilled workers, which have symmetrical productive spillovers on all other types of workers. That is:

$$\gamma^A_{\theta',\theta} = \gamma^A \leq 0,\ \forall \theta, \theta'; \qquad \gamma^P_{H,\theta} = \gamma^P \geq 0,\ \gamma^P_{L,\theta} = 0,\ \forall \theta \tag{9}$$

and I assume the regularity condition that $\sigma - \gamma^A - \gamma^P > 0$.[13]

A3 Shifters: *i.* high skilled workers have a higher shifter for amenities in the North, with $\iota^H_n = \iota > 1$, while shifters for all other cities and types are normalized to 1. *ii.* High skilled workers have a higher productivity shifter than low skilled ones everywhere, that is: $\phi^H_j = \phi > 1,\ \forall j$. The productivity of low skilled workers is normalized to 1, $\phi^L_j = 1,\ \forall j$.

1.3.1 Effects of the Transfer on Growth and Regional Inequality

What are the effects of such transfer on the South and on regional inequality? Since low skilled workers are more abundant in the South, they hold the political power and the local government enacts their will. Thus, to determine how the transfer will be spent in the South, and its ultimate effects on growth, it is enough to apply equation (7) for the low skilled workers, which yields the following Proposition.

Proposition 2 (Effects of a regional transfer to the South)**.** *Under assumptions A1 to A3 and around a competitive equilibrium, a regional transfer from the North to the South increases GDP per capita and wages in the South if and only if:*

$$\frac{\gamma^A + \gamma^P}{\sigma \tilde{y}^H_{s,0}} > 1 \tag{10}$$

where $\tilde{y}^H_{s,0} > 0$ is the share of output produced by the high skilled workers in the South in the initial competitive equilibrium, $\tilde{y}^H_{s,0} = {}^{Y^H_{s,0}}/_{(Y^L_{s,0}+Y^H_{s,0})}$.

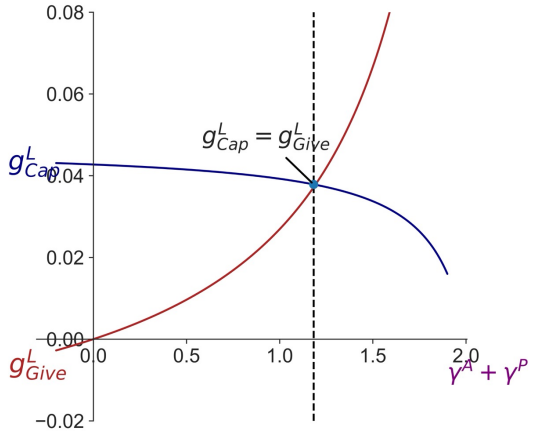
When agglomeration forces net of congestion are small or negative ($\gamma^A + \gamma^P$ is low), and/or migration frictions are large (σ is high), then the regional transfer to the South ***decreases*** *GDP per capita and wages in the South.*

Proof. See Appendix Section A.2. □

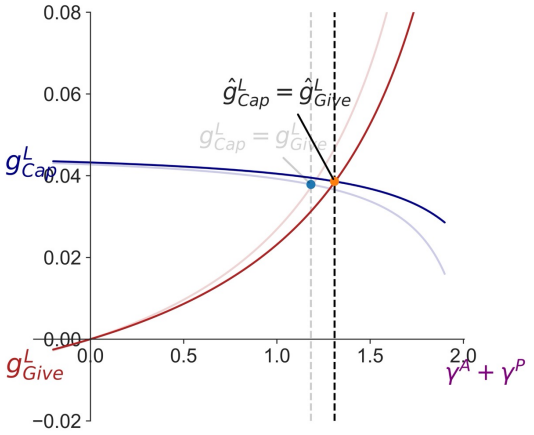
[13] This is the necessary and sufficient condition to ensure that: *i*. an improvement in city j in the exogenous fundamentals for type θ causes an inflow of type θ (that is, $\partial \log L^\theta_{jt} / \partial \log x^\theta_{jt} > 0$ for x=ι, ϕ and $\theta \in \{L, H\}$); and that, *ii*. an improvement in city j in the exogenous fundamentals for type θ' causes an inflow of type θ if the net spillovers from type θ' on type θ are positive, and an outflow otherwise (that is, $\text{sign}(\partial \log L^\theta_{jt} / \partial \log x^{\theta'}_{jt}) = \text{sign}(\gamma^A_{\theta',\theta} + \gamma^P_{\theta',\theta})$ for x=ι, ϕ and $\theta, \theta' \in \{L, H\}$).

FIGURE 2: RELATIVE BENEFITS OF CAPTURING VS. GIVING THE SUBSIDY FOR LOW SKILLED WORKERS IN THE SOUTH

(A) LOWER MIGRATION FRICTIONS



(B) HIGHER MIGRATION FRICTIONS



Note: the figure reports the change in utility for the incumbent low skilled majority in the South across different allocations of the regional transfer, as a function of the net spillovers from the high skilled workers ($\gamma^A + \gamma^P$), fixing $\gamma^A = -.2$. The blue line (g^L_{Cap}) plots the benefit of capturing the transfer and the red line (g^L_{Give}) that of subsidizing the high skilled workers. The dashed vertical line reports the level of spillovers at which the two lines intersect. The left panel fixes the shape parameter of the Fréchet distribution to be $\sigma = 2$, the right panel sets it to $\sigma = 2.2$, corresponding to higher migration frictions.

This result depends on the voting behavior of incumbent low skilled voters. Figure 2 shows the tradeoff they face by plotting the changes in low skilled workers' utility when capturing the transfer (g^L_{Cap}, in blue) vs. giving it to the high skilled workers (g^L_{Give}, in red), as a function of net spillovers from the high skilled workers, $\gamma^A + \gamma^P$.[14] The difference between the two is what determines voting choices, and Equation (10) is satisfied if and only if $g^L_{Cap} < g^L_{Give}$.[15] The locus where they intersect, indicated by the black dashed line, represents the indifference point for the low skilled incumbent political majority. Panel (A) considers a lower migration friction compared to Panel (B).

In each panel, to the left of the dashed black line, low skilled workers would rather capture the transfer, because net spillovers from the in-migration of high skilled ($\gamma^A + \gamma^P$) workers are not high enough to make the low skilled want to part with the subsidy. To the right, low skilled workers want to attract high skilled ones rather than directly receiving the subsidy. Panel (B) shows that,

[14] The x-axis varies γ^P, fixing the congestion spillover that all workers have on each other, γ^A.

[15] Formally, g^L in Proposition 1 corresponds to the log difference in low skilled workers' utilities between the allocation that exhausts the budget constraint by subsidizing the low skilled and the allocation that does so by subsidizing the high skilled, respectively $\boldsymbol{\tau}^L_{jt} = (\log \hat{\tau}^L_{jt}, 0)$ and $\boldsymbol{\tau}^H_{jt} = (0, \log \hat{\tau}^H_{jt})$. That is, $g^L = \log u^L_{jt}(\boldsymbol{\tau}^L_{jt}) - \log u^L_{jt}(\boldsymbol{\tau}^H_{jt})$. By the mean value theorem, it exists $\tilde{\boldsymbol{\tau}} = \alpha \boldsymbol{\tau}^L_j + (1-\alpha)\boldsymbol{\tau}^H_j$ such that $g^L = \partial \log u^\theta_{ij}(\tilde{\tau}) / \partial \log \tau^L_j \log \hat{\tau}^L_j - \partial \log u^\theta_{ij}(\tilde{\tau}) / \partial \log \tau^H_j \log \hat{\tau}^H_j$. Figure 2 plots $g^L_{Cap} = \partial \log u^L_{jt} / \partial \log \tau^L_j \log \hat{\tau}^L_j$ and $g^L_{Give} = \partial \log u^L_{jt} / \partial \log \tau^H_j \log \hat{\tau}^H_j$.

when migration frictions are higher, the indifference point moves to the right: spillovers must be higher for the low skilled workers to want to attract the high skilled ones, because fewer of them are going to move in for the same subsidy.

For the transfer to spur growth in GDP per capita and wages, it must attract the highly productive workers to the South. That is, net spillovers must be to the right of the indifference points of Figure 2, so that low skilled workers will want to attract high skilled ones. When net agglomeration forces are not that high and/or migration frictions are high enough, the transfer will be captured by the low skilled workers in the South. The South will thus become more attractive to low skilled workers, who will migrate in and create congestion externalities. Because of congestion, some high skilled workers will then leave for the North, making the South poorer and less productive. This decreases wages for all workers in the South, as well as GDP per capita. The regional transfer thus ends up *increasing* regional inequality.

1.3.2 Political Feasibility and Welfare

The decline in GDP per capita in poorer regions is at odds with the stated goals of most place based policies that exist in practice. But are these politically-captured place based policies also negative for welfare? I conclude this Section by characterizing the relationship between the aggregate welfare effects of different place based transfers in this model economy and their political feasibility.

When local political economy incentives are at play, some transfers that would increase welfare are politically unfeasible and, moreover, some that decrease welfare are politically feasible. This happens because incumbent low skilled majorities only optimize over their own utility, so that the sufficient statistic that determines whether a given transfer is politically feasible has little to do, and can even be in contrast, with the conditions that determine whether that same transfer is good for low skilled workers in general.[16]

Given the assumption on the taste shocks, aggregate welfare for low skilled workers is $\mathcal{W}_t^L = [\int (u_{jt}^L)^{1/\sigma} dj]^\sigma$ and, following a transfer to type x in the South, its change is, to the leading-order:

$$\frac{\partial \log \mathcal{W}_t^L}{\partial \log \tau_{st}^x} = L_{s,0}^\theta \frac{\partial \log u_{st}^L}{\partial \log \tau_{st}^x} + L_{n,0}^\theta \frac{\partial \log u_{nt}^L}{\partial \log \tau_{st}^x}$$

In the case of a place based transfer to low skilled workers in the South ($x = L$), paid for with a place blind tax on all low skilled workers (to ignore cross-type redistributive motives), and around a competitive equilibrium, this is the sum of two components:

[16] I focus here on the aggregate utility of the low skilled workers to highlight how, under political economy constraints, a policy meant to help low-income places might end up hurting low-income workers overall. The analysis on the welfare of the high skilled or of both types follows identical steps.

$$\frac{\partial \log \mathcal{W}_t^L}{\partial \log \tau_{st}^L} = \overbrace{\mathcal{R}_{st}}^{\text{Redistributive Motive, } >0} + \overbrace{\underbrace{\varepsilon_{L,H}}_{\substack{\text{Crowding out from the South} \\ \text{of HS workers by LS ones, } <0}} \times \underbrace{\left(\gamma^A + \gamma^P\right)}_{\substack{\text{Spillovers from} \\ \text{HS to LS, } \lessgtr 0}} \times \underbrace{\left(1 - \frac{L_{s,0}^H}{L_{s,0}^L}\right) L_{s,0}^L}_{\substack{\text{Relative Scarcity of HS} \\ \text{workers in the South, } >0}}}^{\Delta \mathcal{W}_{Alloc.}^L(\tau_{st}^L) := \text{Allocative Efficiency, } \gtrless 0} \quad (11)$$

The first term represents the aggregate gains from redistributing consumption to low skilled workers who live in a poorer region, where the marginal utility of consumption is higher. The second term captures the allocative effects of the transfer. The gains or losses coming from the spatial reallocation of workers, which depend on the externalities that workers create on each other. In the remainder of this section, I focus on this term because it is the one that directly depends on the interactions among low and high skilled workers, which are at the core of the political conflict that I study in the paper.[17]

The sign of the allocative effects depends on the net spillovers that high skilled workers have on low skilled ones. When high skilled workers create positive spillovers on the low skilled ones ($\gamma^A + \gamma^P > 0$), a planner would want to move them where they are relatively scarce—i.e., the South, where $L_s^H / L_s^L < 1$. This is because, in the South, there are more low skilled workers to benefit from the inflow of the high skilled. Yet, a transfer to the low skilled workers in the South, which is what (11) considers, achieves the opposite: It attracts low skilled workers, which in turn drive away the high skilled ones due to congestion forces ($\varepsilon_{L,H} < 0$), thus worsening the spatial allocation for the average low skilled worker (i.e., $\Delta \mathcal{W}_{Alloc.}^L(\tau_{st}^L) < 0$). When net spillovers are, instead, negative ($\gamma^A + \gamma^P < 0$), then $\Delta \mathcal{W}_{Alloc.}^L(\tau_{st}^L)$ is positive, as it is optimal to concentrate the high skilled workers in the North.

Consider now the case of a transfer to high skilled workers in the South, paid for by a place blind tax on all the high skilled (again to ignore cross-type redistribution). All the effects for the low skilled here depend on the allocative consequences of the transfer, denoted $\Delta \mathcal{W}_{Alloc.}^L(\tau_{st}^H)$, which are due to the fact that the transfer attracts more high skilled workers to the South:

$$\frac{\partial \log \mathcal{W}_t^L}{\partial \log \tau_{st}^H} = \overbrace{\underbrace{\varepsilon_{H,H}}_{\substack{\text{Crowding in the South} \\ \text{of HS workers due to subsidy, } >0}} \times \underbrace{\left(\gamma^A + \gamma^P\right)}_{\substack{\text{Spillovers from} \\ \text{HS to LS, } \lessgtr 0}} \times \underbrace{\left(1 - \frac{L_{s,0}^H}{L_{s,0}^L}\right) L_{s,0}^L}_{\substack{\text{Relative Scarcity of HS} \\ \text{workers in the South, } >0}}}^{\Delta \mathcal{W}_{Alloc.}^L(\tau_{st}^H) := \text{Allocative Efficiency, } \lessgtr 0}$$

[17] The redistributive motive is $\mathcal{R}_{st} = L_{s,0}^L - Y_{s,0}^L / Y_0^L$. It is positive because the South is relatively poorer, and constitutes a rationale for the planner to transfer consumption there, where the marginal product of consumption is higher. Fajgelbaum and Gaubert (2020), Davis and Gregory (2022), and Donald et al. (2025) provide an extensive characterization of this sort of redistributive motive. Numerically, including $\mathcal{R}_{st}$ does not alter the qualitative results below, but complicates the analytical exposition.

The sign of the allocative efficiency terms for the two policies is naturally opposite, because they achieve opposite migration responses of the high skilled workers. That is, a transfer to the high skilled workers in the South has positive allocative effects ($\Delta\mathcal{W}^L_{Alloc.}(\tau^H_{st})) > 0$) if and only if a transfer to the low skilled workers in the South has negative ones.

As discussed above, the signs of the allocative efficiency terms depend exclusively on the net spillovers that the high skilled create onto the low skilled, $\gamma^A + \gamma^P$. Yet, as shown in Proposition 2, the voting choice of the low skilled workers in the South vote is not uniquely pinned down by the sign of $\gamma^A + \gamma^P$. This wedge between the parameters that govern political choices and those that govern the allocative efficiency of the transfer leads to the main result of this Section.

Proposition 3 (Aggregate Low Skilled Welfare and Political Feasibility)**.** *Under assumptions A1 to A3, around a competitive equilibrium, and for a small transfer to the South, politically feasible subsidies can cause the spatial allocation of workers to either worsen or improve aggregate low skilled welfare. Similarly, subsidies resulting in welfare improving allocations can be politically unfeasible, and those resulting in welfare decreasing ones can be politically feasible. In particular, there exists a positive threshold $\bar{\gamma}(\sigma)$, which is a function of the migration elasticity $1/\sigma$, such that:*

i. When net spillovers from high skilled workers to low skilled workers are negative ($\gamma^A + \gamma^P < 0$), the transfer to the South is captured by low skilled workers, which improves the spatial allocation of workers. That is, incumbent low skilled voters choose to give the transfer to type L and $\Delta\mathcal{W}^L_{Alloc}(\tau^L_{st}) > 0$.

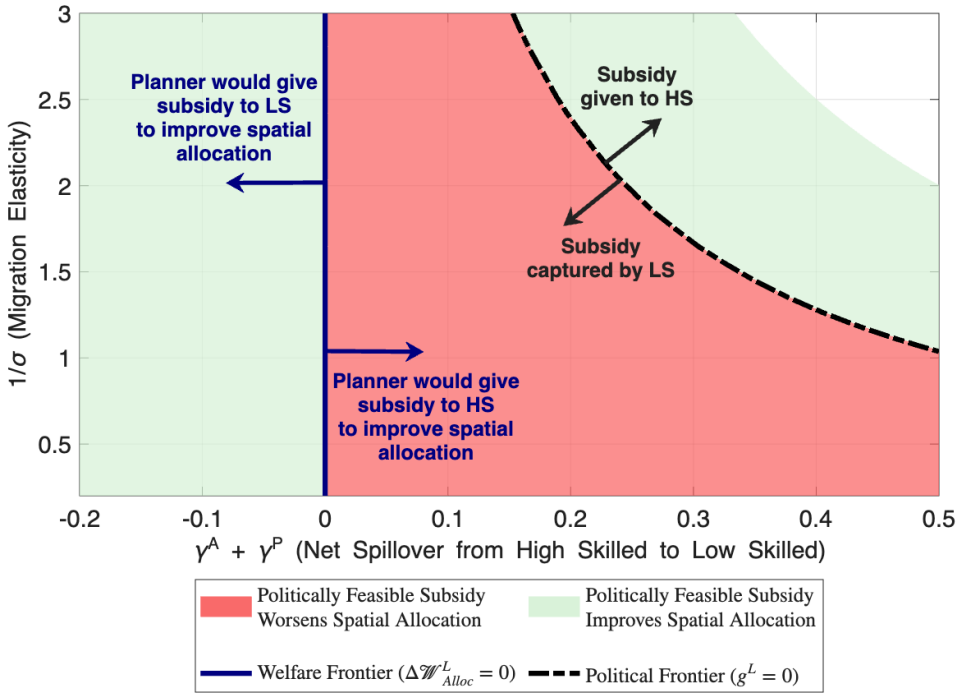
*ii. When $\gamma^A + \gamma^P \in [0, \bar{\gamma}(\sigma)]$, the transfer to the South is captured by low skilled workers, which **worsens** the spatial allocation of workers. Giving the transfer to the high skilled workers would improve the spatial allocation of workers, but is politically unfeasible. That is, incumbent low skilled voters choose to give the transfer to type L, even though $\Delta\mathcal{W}^L_{Alloc}(\tau^L_{st}) < 0$ and $\Delta\mathcal{W}^L_{Alloc}(\tau^H_{st}) > 0$.*

iii. When $\gamma^A + \gamma^P > \bar{\gamma}(\sigma)$, the transfer to the South is given to the high skilled workers, which improves the spatial allocation of workers. That is, incumbent low skilled voters choose to give the transfer to type H and $\Delta\mathcal{W}^L_{Alloc}(\tau^H_{st}) > 0$

Proof. See Appendix Section A.3. □

Figure 3 shows the result graphically. The x-axis reports different values of the net spillovers from the high skilled to the low skilled ($\gamma^A + \gamma^P$, where I fix the negative congestion spillover γ^A and vary γ^P), while the y-axis reports different values of the migration elasticity. The blue solid vertical line at $\gamma^A + \gamma^P = 0$ corresponds to the welfare frontier: the locus of points where there are no allocative effects from moving the high skilled across space. To the right of the frontier,

FIGURE 3: ALLOCATIVE EFFECTS AND POLITICAL FEASIBILITY FOLLOWING A REGIONAL TRANSFER TO THE SOUTH



Note: the figure plots the welfare and political frontiers across different values of the migration elasticity ($1/\sigma$, on the y-axis) and of the net spillovers $\gamma^A + \gamma^P$ that high skilled (HS) workers have on low skilled (LS) ones. The higher $1/\sigma$, the more responsive migration is to a subsidy. The higher $\gamma^A + \gamma^P$, the more beneficial are high skilled workers to low skilled ones. The blue solid line plots the welfare frontier. To its right, a reallocation of high skilled workers to the South improves the spatial allocation of workers from the perspective of aggregate low skilled welfare. To its left, a reallocation of high skilled workers to the South worsens it. The black line plots the political frontier. To the upper right of it, low skilled incumbents in the South are willing to subsidize high skilled workers and attract them to the South. To the lower left, they capture the transfer and drive away the high skilled workers due to congestion forces. The area in red denotes the set of primitives under which the politically feasible transfer scheme worsens the spatial allocation from the perspective of aggregate low skilled welfare. The area in green denotes the set of primitives under which the politically feasible transfer scheme improves it. The area in white indicates the part of the parameter space where the regularity condition in (A2) is not satisfied and possibly multiple equilibria exist. Net spillovers from the high skilled vary along the x-axis as the productive spillover γ^P changes, fixing the congestion spillover to $\gamma^A = -.2$.

incentivizing the high skilled to move to the South improves the spatial allocation. The black dashed line plots the political frontier. To the upper-right of the political frontier, net spillovers from the high skilled are high enough and/or migration frictions are low enough that the low skilled incumbent majority in the South wants to give the transfer to the high skilled so as to attract them to the South. To the lower-left of the political frontier, capturing the transfer makes the low skilled incumbents better off compared to attracting the high skilled workers.

The areas shaded in green indicate the set of primitives where the politically-feasible subsidy coincides with the one that improves the spatial allocation from the perspective of low skilled workers. This happens in two cases. First, when net spillovers from the high skilled to the low

skilled, $\gamma^A + \gamma^P$, are negative. In that case, the planner wants to concentrate high skilled workers in the North, where there are fewer low skilled workers. The Southern low skilled workers also do not want to attract the high skilled. They capture the transfer and attract new low skilled workers to the South, who themselves push the high skilled away to the North, in line with what the planner wants. The second case is the area to the upper-right of the political frontier. Here, net spillovers from the high skilled are so high and/or migration frictions are so low that low skilled workers are willing to part with the subsidy and give it to the high skilled ones, which attracts them to the South. Because in this case the planner also would want to reallocate high skilled workers to the South, the politically feasible subsidy improves the spatial allocation.

However, a wedge emerges when net spillovers $\gamma^A + \gamma^P$ are positive but not very high—which is likely the empirically relevant part of the parameter space (Diamond, 2016; Fajgelbaum and Gaubert, 2020). When this is the case, the planner still wants to reallocate high skilled workers in the South, as that improves the aggregate welfare of low skilled workers. However, low skilled incumbents in the South do not want to part with the subsidy. Spillovers are not high enough for them to want to attract the high skilled, and they capture the transfer. By capturing the transfer, they make the spatial allocation of workers worse for the average low skilled worker in the economy.

Note that in the case above, the reason why redistributing high skilled workers to the South would be beneficial is that high skilled workers are relatively scarce there. Yet, this is also the same reason why the policy is politically unfeasible. Because they are relatively scarce, they do not hold the political power to implement the transfer. This highlights that under local political economy constraints, skill-based sorting substantially complicates the planner's problem. It provides an efficiency rationale to redistribute workers and is, at the same time, the reason why this redistribution can be unfeasible.

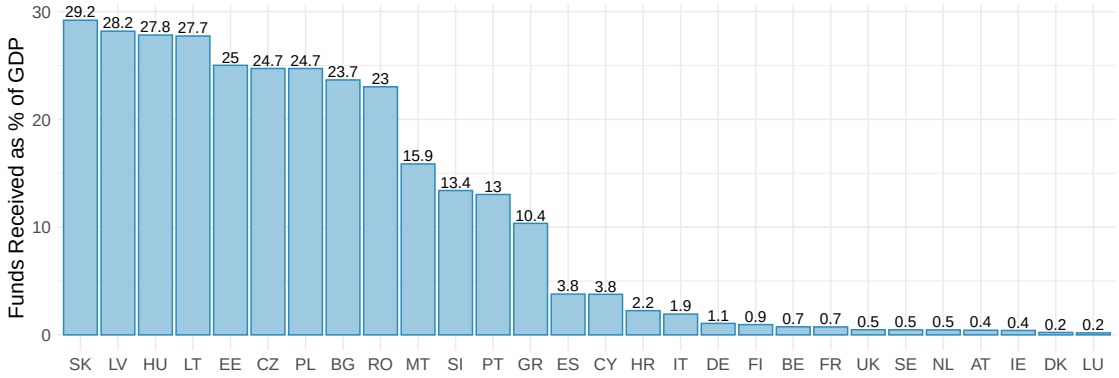
In summary, political economy constraints may make regional transfers to poor regions counterproductive for both growth and aggregate welfare. While a policy aimed at helping poor places does end up raising consumption of low skilled workers in poor regions, it comes at two costs. First, it harms overall productivity in recipient regions, thereby failing to address regional inequality. Second, it distorts location choices in a way that hurts the average low skilled worker in the economy.

The following Sections turn to an empirical application of the model in the context of the European Cohesion Policy, which provides evidence of the political incentives outlined above.

2 Institutional Background on the EU Cohesion Policy

Before turning to the analysis, this Section briefly describes the relevant institutional details of the Cohesion Policy. Since its first steps, the European project has struggled with economic dispari-

FIGURE 4: COHESION POLICY INVESTMENTS BETWEEN 2007 AND 2013 AS A FRACTION OF GDP IN 2006



Note: the figure plots the transfers received by each country between 2007 and 2013, relative to GDP in 2006, via the European Regional Development Fund, the European Social Fund, and the Cohesion Fund (see Appendix Section B.1 for details on the different funds through which the Cohesion Policy is implemented).

ties, which have always been seen as a threat to the well-functioning of the single market and to politically unity. As such, policies targeted at decreasing these differences have always occupied a prominent role, as illustrated in the excerpt of article 174 of the Treaty on the Functioning of the European Union quoted in the introduction.

To reduce disparities across regions, the European legislator has often reverted to place based policies. Not surprisingly, the EU Cohesion policy—the largest place based transfer scheme in the continent—has consistently occupied a third of the EU budget. For the poorest countries in the EU, this resulted in sizable transfers. Figure 4 shows the amount invested by the EU Cohesion Policy in each member state over the 2007–13 period, as a fraction of its GDP in 2006. Strikingly, for a third of EU countries, this figure is more than 20%—with Slovakia reaching 29.2%.

The policy is implemented by the European Commission (EC) through two departments, which, in turn, operate several funds that disburse resources to regions across Europe. The Directorate-General (DG) for Regional Policy operates through two funds, the "European Regional Development Fund" (ERDF) and the "Cohesion Fund" (CF). The DG for Employment, Social Affairs and Inclusion operates through the "European Social Fund" (ESF). These funds are all part of the EU Cohesion Policy, but, because the DG for Regional Policy collected more data on its funds, some of the outcomes described in the following Section are not always available for the ESF.[18] In the remainder of the paper, I will refer to these two DGs jointly as the EC, except when it is necessary to distinguish them.

The overall budget and the regional allocations are defined by the EC at a 7-year cadence, where each interval is denoted as a programming period (PP). In this paper, I focus on the 2007–13 PP,

[18] See Appendix Section B.1 for further details on the funds covered by the data.

for which there exists complete data on EU payments at the regional level that is disaggregated by thematic content of investment (e.g., distinguishing between different types of subsidies to firms, infrastructural investments, etc.).

The EC allocates funds to each region according to a fixed formula. Regions that have a regional GDP below 75% of the EU average or are located in member states with a GNI below 90% of the EU average are assigned "Objective 1" status (also known as the "convergence objective"), and receive the lion share of the overall budget (81.5%). All other EU regions are categorized as "Objective 2" and receive fewer funds.[19] Although the EC centrally sets the amount of transfers to each region, the practical implementation is left to local authorities; and involvement of local regional partners has been a key principle since 1988. In particular, the EC operates by developing a partnership agreement with each member state, where they contract over the national thematic objectives and priorities for the programming period (known as National strategic reference framework), a non-detailed[20] plan for the implementation of such objectives, and an outline of the authorities that will be responsible for implementation and monitoring.

Each partnership agreement between the Commission and a member state then gives rise to a series of "investment programmes" and describes the budget and one or more managing authorities (MAs) responsible for each program. Programs can be specific to one region or to a group of adjacent regions (regional programs), span all regions in a country (national programs), or multiple countries. A unique identifying code (CCI) is assigned to each program, and its management is left completely to the MAs—with the member state itself being responsible for monitoring. That is, it is upon such authorities to write open competitions for projects, to decide in which sectors to invest, and which firms to subsidize. In this regard, the 2007–13 PP marked a novelty compared to previous periods, since it entailed less control over the specific projects meant to implement the policy objectives.[21]

These characteristics make the EU Cohesion Policy a good setting in which to test the implications of Section 1. As in the model, the federal authority (here, the EC) sets the amount of transfers to the various regions but essentially leaves the actual choice on how to spend them to

[19] Determining the objective associated with each region is the first step to determining the total regional allocation. Within each objective, the regional allocation is defined according to a per capita rule that depends on regional GDP p.c., the member state's GNI p.c., and the regional unemployment rate (cf. Annex II of Council Regulation 1083/2006). Regions at the border of multiple EU countries are also eligible for the "co-operation objective", which aims to reinforce cross-border cooperation between member states.

[20] Except for interventions above €50M (€25M for environment projects), which have to be "indicatively listed".

[21] See the commentary by the European Commission (2007): "*The programmes are built around a Member State's priorities. Details concerning management (as well as project selection criteria) are defined at regional and national level and do not feature in the programming. The programming complement which existed in the past thus no longer exists.*", where the emphasis is mine. The types of investments vary widely, ranging from subsidies to firms for technological development and R&D, to other non-technologically related subsidies to firms, and from infrastructural investments to support for policies encouraging labor market participation. The next Section describes the various types of investments recorded in the data.

local authorities (member states and regions). To understand whether workers who constitute the local political majority will be favored by managing authorities that cater to local voters, it is then enough to construct two measures. First, a measure that captures how funds are spent, for which I use the thematic area of investment. Second, a measure of MAs' incentives to cater to the local electorate, for which I exploit the fact that some programs are managed by authorities directly appointed by member states and others are managed by local governments, who are instead subject to local elections. I now turn to describing the data and how I construct these measures.

3 Data

The main dataset records the interventions made by the EU during the 2007-13 PP to all the 27 countries that were members of the EU at the time. Such records are assembled by the EC starting from the end-of-period closure reports compiled by the regional and national managing authorities. The EC describes the dataset as "the best approximation of thematic content of what was financed during 2007-2013", and it contains records of payments made through 318 unique investment programs to 257 NUTS2 regions. The amount of investments recorded in the data totals €368B. Among these, €283B are recorded at the regional (NUTS2) level or lower. From this sample, I drop single-region countries and cross-border cooperation funds, which are a specific kind of fund for provinces on the border of member states. Together, these dropped subsamples constitute less than 4.9% of the total investment. The final sample consists of €265B distributed through 299 programs across 255 NUTS2 regions.

Each record in the data reports a payment to a geographical region made through a given investment program and further disaggregated along the following dimensions: the economic sector which received the investment (if applicable), the "priority theme" of the intervention, the form through which the investment was financed (whether through loans, non-repayable aids, or venture capital), the type of territory within the NUTS region receiving the investment (whether urban, sparsely populated, rural, etc..). In the remainder of the paper, I refer to the set of these dimensions as a "payment-bin". That is, each payment-bin is a combination of the program code (CCI) that originates the payment, the type of territory targeted, the sector targeted, the priority axis, and the type of financing. Each row of the dataset is hence uniquely identified by a combination of a target region and a payment bin.

The categorization of investments across sectors distinguishes between 22 sectors, whereas that for "priority themes" is across 86 codes nested in 17 main categories.[22] Unfortunately, the

[22]The categorization of the target sector and the priority code of every payment follows Council Regulation 1828/2006, Annex II. The 17 main categories for priority themes are: *i)* research and technological development (R&TD), innovation and entrepreneurship, *ii)* information society, *iii)* transport, *iv)* energy, *v)* environmental protec-

data aggregates all the amount invested during the whole PP, without disaggregating by time of investment. Online Appendix Tables O.A.2 and O.A.3 report the total amount of funds invested in each priority code and each target sector, respectively.

I complement this dataset with another one that reports the outcomes achieved through each investment program (CCI). This was compiled by the DG for Regional Policy as part of an ex-post evaluation of the ERDF and CF for 2007–13, and reports several indicators such as the number of jobs created, kilometers of additional road built, number of startups created, and similar. Among these, the only indicator with a reliably high quality and that is non-missing for most programs is the total number of jobs created as a result of the intervention. Because the DG for Employment did not conduct a similar ex-post evaluation, this data is not available for the ESF.

Macroeconomic and demographic data at the regional (NUTS2) level come from the Annual Regional Database of the EC's Directorate General for Regional and Urban Policy (ARDECO) and from Eurostat. In particular, the data on the education levels of the local population is taken from Eurostat, which reports the number of economically active residents by educational attainment. In line with the literature, I define as high skilled all individuals with tertiary education and as low skilled all others. For all variables, I convert the NUTS categorization to its 2006 version, which is the one used in the funds expenditure reports aggregated by the EC.

As anticipated, the model makes two predictions. First, that funds will be spent differently according to the local composition of the electorate and the political incentives faced by the manager of the fund. Second, that this has effects on growth. Thus, my main variables of interest concern who is in charge of how to spend the funds allocated by the EC, for what purposes these funds are spent, and the effects of the interventions. Before concluding this Section, I turn to the description of these three measures.

3.1 Management Authorities

Investment programs in my main dataset are of two types: national programs, which invest across multiple regions, or regional programs, which invest only in one region or in a subset of regions. National programs are managed either directly by the central government through one of its departments or by external agencies appointed by the central government. Regional programs can be managed either by local governments or by local authorities appointed by the central government. To distinguish between these two types of MAs of regional programs, I first collect data on the list

tion and risk prevention, *vi)* tourism, *vii)* culture, *viii)* urban and rural regeneration, *ix)* increasing the adaptability of workers and firms, enterprises and entrepreneurs, *x)* improving access to employment and sustainability, *xi)* improving the social inclusion of less-favoured persons, *xii)* improving human capital, *xiii)* investment in social infrastructure, *xiv)* mobilisation for reforms in the fields of employment and inclusion, *xv)* strengthening institutional capacity at national, regional and local level, *xvi)* reduction of additional costs hindering the outermost regions development, *xvii)* technical assistance.

of MAs associated to each CCI. Part of this data can be scraped from the EC website, and part was manually searched program by program. Then, I collect information on each MA, either through their websites or other web searches, and categorize them as either being linked to the local government or not. Management authorities linked to the local government are either offices of the local government or external agencies where the board is presided over or nominated by the local government. Henceforth, I refer to programs under this type of management structure as managed by local governments. MAs that are not linked to local governments, instead, can either be offices of the central government—for instance, local prefectures in France, local offices of central ministries in Spain, "growth delivery teams" in the UK—or they can be external agencies whose board is nominated by the central government.

Online Appendix Table O.A.1 describes, for each country, the amount invested through each type of program, either national or regional, and, when regional, the amount managed by the local government or by a local authority that is centrally appointed (as anticipated, national programs are always managed by central governments). Panel A of Appendix Figure B.4 reports for each region whether funds were invested mainly through regional programs, national ones, or a mix of both. Panel B reports whether regional programs were managed by centrally appointed authorities or local governments.

3.2 Thematic Content of Investments

To construct a proxy for whether investments benefit high skilled workers more than low skilled ones, I use the data on the priority themes associated with each payment. As shown in Online Appendix Table O.A.2 , six of the 86 priority themes clearly refer to skill-biased investments encompassing technological development, innovation, and R&D. These projects are either subsidies to firms for technological development of their production processes and for innovation, or direct investment in research centers and in firms directly linked to innovation. They amount to 12.3% of all funds recorded in my data. Henceforth, I refer to these types of investments as investment in technological development and innovation, abbreviated as TD&I.

Online Appendix Table O.A.2 reports the total amount of funds invested by priority code, and I indicate my categorization for each priority code. The key one that refers to spending in TD&I is denoted as "TD&I subsidies to firms and TD&I investments". Appendix Figure B.3 reports maps with the fraction of funds invested in TD&I (Panel A) and the fraction of low skilled workers (Panel B) across NUTS2 regions.

3.3 Outcomes

Data on outcomes include several indicators that assess the policy's effects. These are directly reported by MAs and then vetted by the Commission. For 2007–13, reporting was voluntary, but the EC exerted significant moral suasion for MAs to at least report the total number of jobs directly created as a result of the program. Hence, this indicator is available for 190 CCIs out of the 215 funded via the ERDF and CF, covering €170 billion, or 76% of all the ERDF and CF funds in my main dataset. Based on conversations with EC officials, the EC put considerable effort into validating and requesting this particular indicator, which alleviates concerns of selection into reporting and data quality—something that is not true for other indicators in the dataset.

The data for Italy provides a reassuring sanity check, as it is comparable with causal estimates in the literature by Cerqua and Pellegrini (2014) and Cingano et al. (2025), who study the impact of the Law 488/92, an investment subsidy program implemented in Italy between 1992 and 2007, which was partially funded through the same funds I study. In the EC data, the median across CCIs of the implied cost per job in Italy is €147,143, which falls between the causal estimates by Cerqua and Pellegrini (2014) (€60-100,000) and by Cingano et al. (2025) (€178,000).[23] As in Cingano et al. (2025), this data also shows a North-South gradient where the median cost per job is €223,000 in the South and €140,000 elsewhere. The median cost per job including also all other countries is €146,998.

A substantial disadvantage of the data is that it is at the CCI level, rather than at the CCI-region level. Thus, for CCIs that span multiple regions I cannot study the relationship between region-level characteristics and outcomes of the program. When I need to do such analysis, I thus focus on CCIs that are concentrated in only one region.[24] This results in 140 CCIs, among which two have missing regional data. The final sample for the part of the analysis concerned with jobs created is thus made of 138 CCIs covering €86 billions, only half of the investments for which data on jobs created exists and only 38% of the ERDF and CF investments covered in my main dataset on thematic expenditures. For these programs, Panel A of Appendix Figure B.4 reports the map of the log of the jobs created per €1 million invested. Panel B instead reports the distribution of this same variable but across all programs, distinguishing between those that can be apportioned to only one regions and the others.

Appendix Table B.1 reports an essential summary of the available data.

[23] See Cingano et al. (2025) for a richer discussion on the similarity between their estimate and others beyond the Italian context.

[24] I restrict to funds that record more than 99% of their payments to only one region. Restricting to funds that record 100% of payments only in one region drops three additional funds, but results are similar.

4 Empirical Analysis

I now turn to providing evidence for the two central predictions of the model. Section 4.1 shows that, in regions with many low skilled workers, funds are less likely to be invested in projects that benefit the high skilled workers. This happens only when funds are managed by local governments—the authorities more subject to local political pressure—and not when they are managed by the central government or by local authorities appointed by the central government.

The second prediction is that this political wedge matters for growth. The ideal test would use regional data and study the heterogeneous effects of the policy across different managing authorities and local composition of the workforce. However, given the coarseness of the policy, it is hard to do so credibly.[25] In Section 4.2 I get at this test in two ways. First, to get an indirect measure of the effects of the policy on growth, I use the data on jobs created by each program described above. Second, I review several pieces of evidence from the literature that offer evidence consistent with my model.

4.1 Expenditure of Funds Under Political Incentives

Turning to the first prediction, this section studies the likelihood that a payment-bin in a given region falls within the priority codes linked to subsidies to firms for TD&I or direct investments in TD&I and research centers (detailed in Table O.A.2), as a function of the fraction of low skilled workers in the region, interacted by whether the type of authority who is managing the fund is elected locally or appointed by the national government. In particular, I estimate the following regression:

$$\begin{aligned} Y_{ij} = \; & \alpha + \beta \text{LS}_j + (\gamma_R + \beta_R \text{LS}_j) \times \mathbb{1}(\text{Regional Program}_i) \\ & + (\gamma_{RR} + \beta_{RR} \text{LS}_j) \times \mathbb{1}(\text{Regional Program}_i) \times \mathbb{1}(\text{Managed by Local Government}_i) \\ & + \delta \mathbf{X}_i + \tau \mathbf{R}_j + \varepsilon_{ij} \end{aligned} \tag{12}$$

[25] In itself, assessing the effects of the Cohesion Policy on growth has been the focus of a large literature that does exclusively this and faces the challenge that the policy is endogenous, has been active for thirty years, and is rolled out in seven years intervals (see, for instance, Sala-i-Martin, 1996; Boldrin and Canova, 2001; Becker et al., 2010; Mohl and Hagen, 2010; Pellegrini et al., 2013; Becker et al., 2013; Ciani and de Blasio, 2015; Barone et al., 2016; Giua, 2017; Percoco, 2017; Bachtrögler and Hammer, 2018; Bachtrögler et al., 2020; Crescenzi and Giua, 2020; Albanese et al., 2021). Most of these papers deal with the endogeneity problem by employing an RDD approach that exploits threshold rules for the allocation of funds. However, it is hard to credibly apply this strategy here, because the model does not discipline the average effect of the policy but rather its heterogeneity across regions with many vs. few low skilled workers and across programs managed by national vs. local governments. A triple interaction that is too demanding when there are only 56 regions in a 10 p.p. window around the threshold used by the literature that estimates the policy via an RDD approach.

Where i indicates the payment-bin and j indicates the target region. Y_{ij} is a dummy equal to one if the payment-bin i in region j is within a priority code linked to TD&I. $\mathbf{X}_i$ is a set of payment-bin-level controls and $\mathbf{R}_j$ is a set of NUTS2-level controls. γ_R and γ_{RR} are dummies for the type of program: Whether it is national (omitted), regional but managed by the central government (γ_R), or regional and managed by the local government (γ_{RR}). LS_j is the main regressor of interest, namely the fraction of low skilled workers in region j in 2007 (the first year in which funds have been disbursed),[26] interacted with the type program. The coefficient of interest is the triple-interaction β_{RR}, which estimates whether local governments spend differentially on TD&I based on the local fraction of low skilled workers, relative to what centrally appointed authorities in charge of local programs do.

The payment-bin-level controls are: a dummy for whether the directorate general responsible for the program was the DG for Regional Policy or the DG for Employment, territory fixed effects (i.e. dummies for whether the targeted territory is urban, rural, mountainous, etc..); form of finance fixed effects (i.e. dummies for whether the investment is made through loans, non-repayable aids, venture capital, or other forms of financing); sector fixed effects for the sector targeted by the payment-bin, across 22 sectoral aggregates (see Appendix Table O.A.3 for the list of sectors); and a dummy indicating the "Objective" pursued through the fund (as discussed in Section 2).

Since lower investment in TD&I may be an artifact of economic conditions correlated with the share of low skilled workers, rather than of political considerations, I flexibly condition on regional log GDP per capita, sectoral composition of employment, and log of total population. Such controls are included in different forms across specifications: linearly, through a third-degree polynomial, and by taking group-specific fixed effects (grouping regions based on GDP and sectoral composition of employment).[27] In addition to economic characteristics, the vector $\mathbf{R}_j$ includes also country fixed effects and two dummies indicating whether the region received funding under the "convergence objective" and under the cross-border "co-operation objective".

To dispel any further concern that the relationship is driven by region-level unobservables, I exploit regions where multiple funds are active and include region-level fixed effects. The interpretation of this specification is that it reports the within-region difference in the propensity to

[26] Throughout the paper, I always use macroeconomic regional data from 2007 even though a better choice would be to use data from 2006 (before the start of the investment cycle). The data for 2006 is, however, missing for ten more NUTS2 regions, compared to the 2007 data. The variables of interest are relatively similar across years.

[27] Sectoral composition of employment is the fraction of employees across the six broad economic sectors reported in the ARDECO data at the NUTS2 level, over all employees in a region. The sectors are: *i)* Agriculture, Forestry and Fishing, *ii)* Industry - excluding Construction, *iii)* Construction, *iv)* Wholesale, Retail, Transport, Accommodation and Food Services, Information and Communication *v)* Financial and Business Services, *vi)* Non-market Services. When grouping regions based on their economic characteristics, I create two grouping variables for each region. The first bins regions based on four quartiles in the overall distribution of GDP per capita. The second variable clusters regions based on the sectoral composition of employment. To cluster regions based on sectoral composition, I use k-means clustering on the six variables reporting the share of regional employment in each sector to construct 4 sector clusters.

TABLE 1: INVESTMENT IN TECHNOLOGICAL DEVELOPMENT AND INNOVATION VS FRACTION OF LOW SKILLED WORKERS, BY TYPE OF MANAGING AUTHORITY

	Dependent variable:							
	Funds Used to Subsidize Technological Development and Innovation in Firms or for Direct Investments in Technological Development and Innovation (Dummy)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Fraction Low Skilled Workers	-0.588^{***}	-0.328^{**}	-0.379	-0.294	0.097	0.077	0.023	
	(0.102)	(0.153)	(0.240)	(0.248)	(0.254)	(0.226)	(0.234)	
Regional Program		0.216	0.059	-0.187	0.039	-0.008	-0.073	-0.037
		(0.165)	(0.173)	(0.193)	(0.197)	(0.176)	(0.180)	(0.194)
Reg. Prog. × Managed by Local Govt.				0.471^{**}	0.689^{***}	0.455^{**}	0.414^{**}	0.735^{**}
				(0.217)	(0.203)	(0.193)	(0.192)	(0.285)
Low Sk. × Reg. Prog.		-0.125	-0.084	0.190	-0.090	-0.099	-0.019	-0.064
		(0.208)	(0.220)	(0.251)	(0.257)	(0.229)	(0.235)	(0.252)
Low Sk. × Reg. Prog. × Local Govt.				-0.501^{*}	-0.795^{***}	-0.510^{**}	-0.459^{*}	-0.911^{**}
				(0.292)	(0.271)	(0.252)	(0.249)	(0.361)
Country FE			✓	✓	✓	✓	✓	✓
Payment Controls			✓	✓	✓	✓	✓	✓
Objective FE			✓	✓	✓	✓	✓	✓
Regional Econ. Controls (Pol. Degree)			1	1	3	3	3	
Target Sector FE						✓	✓	✓
Regional Sectoral Composition FE							✓	
Regional GDP Group FE							✓	
Region FE								✓
$\mathbb{E}(Y)$	0.198	0.198	0.198	0.198	0.198	0.198	0.198	0.198
$\mathbb{E}$(frac. Low Skill)	0.763	0.763	0.763	0.763	0.763	0.763	0.763	0.763
# of Regions (NUTS2)	253	253	253	253	253	253	253	161
Observations	42,954	42,954	42,954	42,954	42,954	42,954	42,954	27,703
R^2	0.016	0.032	0.163	0.168	0.175	0.262	0.263	0.331

Note: the table reports results from a WLS regression of a dummy indicating whether a payment i to region j was invested in innovation on the fraction of low skilled workers in region j, allowing for heterogeneous effects across types of authorities managing the funds, and controlling for various covariates at the payment level and at the region level. Controls are constructed and included following the discussion in Section 4.1. Each observation is weighted by the ratio between the amount invested in region j through payment i over the total amount invested in region j. Parentheses report clustered standard errors at the NUTS2 level.

invest in TD&I between local governments and other management authorities as a linear function of the fraction of low skilled workers.

Observations are weighted by the ratio between the amount invested in region j through payment i over the total amount invested in region j, so to interpret the estimates as studying the effects of the right hand side variables on the share of funds invested in TD&I in each region. Indeed, when there is no variation on the right hand side at the payment-bin-level (as in Column 1), weighting by the ratio of each payment on overall investment is identical to aggregating the data at the regional level and using as dependent variable the fraction of funds invested in TD&I in region j. Finally, since the main variation in the variable of interest is at the regional level, standard errors are clustered at that level.

Table 1 shows the results from this specification. Column (1) reports the unconditional correlation, and I successively include controls and interactions in the next columns. In column (2),

I add an interaction for whether the program is regional or not, without distinguishing between regional programs that are managed by locally appointed authorities and centrally appointed ones. Column (3) adds linearly the regional level controls (GDP, population, and sectoral employment), the dummies for the objective of the program, and country fixed effects. Column (3) shows that, conditional on controls, there is a negative, but statistically insignificant, relationship between the fraction of low skilled workers and the fraction of investment in TD&I when one looks at regional and national programs without distinguishing whether they were managed by local or centrally-appointed authorities.

Yet, this relationship becomes statistically significant when distinguishing between local or centrally-appointed authorities, and it is driven by funds managed by local authorities, as shown from column (4) onwards. Adding flexible regional controls, from column (5) onwards, shows that there is no relationship between the fraction of low skilled workers and investment in TD&I for programs that are not managed by local governments, whereas there is a strong negative one for programs managed by local governments.

Column (6) shows that the coefficient declines by a third when conditioning on sector fixed effects, but remains statistically significant. This suggests that the relationship is partly driven by local governments choosing less technologically advanced and innovative projects within sectoral aggregates, rather than less technologically advanced and innovative sectors. This further dispels the concern that the results are driven by lack of scope for TD&I investments, rather than political opportunity.

Column (8) adds regional fixed effects and shows that, even partialing out regional-level characteristics, the coefficient for local governments stays negative and significant. That is local governments' investment in TD&I, compared to that of national governments within the same region, decreases as the fraction of low skilled workers increases.

Choosing Column (5) as my preferred specification, since it exploits variation across sectors and regions, the implied magnitude is that a one standard deviation increase in the fraction of low skilled workers (8.6 p.p.) corresponds to a 6.8 p.p. decrease in the fraction of funds invested in TD&I in a given program when this is managed by local governments.[28] This is 40% of the simple average of such fraction across programs (16.3%).[29] The estimate is virtually zero if the program is regional but managed by centrally appointed authorities. In monetary terms, taking the average allocation controlled by local governments (€1 billion), this estimate implies that local governments in regions with a one standard deviation higher fraction of low skilled workers spend €68 million less in TD&I.

[28]This specification is also the one I use for the region-level regressions reported in Figure 1 in the Introduction (cf. Appendix Section B.3), naturally without the payment-bin-level controls.

[29]That is, averaging across different CCIs. The average reported in Table 1 is a simple average across single payment-bins.

To illustrate the relationship between the fraction of low skilled workers and the fraction of investment in TD&I graphically, Appendix Section B.3 repeats these analyses by aggregating data at the regional level, separately by each type of managing authority. This aggregate analysis is at the basis of Figure 1 in the Introduction. Appendix Figure B.1 replicates the exercise in Figure 1 by just plotting the raw correlation in the data between investment in TD&I and the fraction of low skilled workers (Panel A), and by plotting it residualized only on local initial GDP p.c. (Panel B). Even in the raw data, the negative relationship between investment in TD&I and low skilled workers is stronger for local investment programs managed by local governments (the coefficient β is $-.73$, with a t-stat of -4.13) than for local investment programs managed by nationally appointed authorities ($\beta = -.59$, t-stat of -2.96). By just adding the log of regional GDP p.c. in 2007 as a control, the relationship vanishes for local investment programs managed by nationally appointed authorities but remains negative and significant for local governments.

Towards which category of spending are local governments of low skilled intensive regions substituting to? And is investment in TD&I the only category on which they are spending less? To answer these questions, I group all the 86 priority codes contained in the data in 11 categories and repeat regression (12) with each possible investment category as a dependent variable.[30] Appendix Figure B.5 reports the relevant coefficients and their associated 95% confidence interval for the three types of programs and MAs and for all possible categories, using the specification in Column (5) of Table 1.

TD&I is the category for which the regression coefficient for local governments is most negative. The only other category for which the coefficient is negative and statistically significant is large transport infrastructure, which is not surprising if low skilled political majorities are more likely to be employed in non-tradable sectors or small firms with low export ability. Appendix Figure B.5 also shows that local governments of regions with many low skilled workers invest more in other subsidies to firms excluding those for technological development and innovation. This reinforces the interpretation that they move away from technologically-intensive investments and instead subsidize low-knowledge intensive projects. Also in this case, the effect is present only for local governments and not for the central government, suggestive of local political incentives.

4.1.1 Interpretation and Alternative Mechanisms

Summing up, the analysis shows that, conditional on regional characteristics, country fixed effects, and payment-level controls, EU funds are less likely to be spent in TD&I in regions with many

[30] The categories are: TD&I subsidies to firms and TD&I investments; Support to firms, excluding TD&I subsidies; Technological infrastructure; Large transport infrastructure; Local infrastructure; Energy; Environmental protection; Tourism; Culture; Labor market policies; Other. All priority codes referring to each category, as well as total amounts invested, are reported in Online Appendix Table O.A.2.

low skilled workers, and more likely to be spent in other subsidies to firms. Furthermore, these correlations vanish if funds are managed by the central government and, instead, are strong for funds managed by local governments. This confirms the first prediction of the model: since local workers benefit less, relatively to high skilled workers, from investments in technological development and innovation, they demand a lower fraction of all projects to be invested there. Two main concerns, however, might challenge this interpretation.

First, investment in TD&I may be a poor proxy for projects that benefit the high skilled workers more than the low skilled ones, as a better one would be investment in firms that employ more high skilled workers than low skilled ones. Appendix Section B.4 focuses on a case study for Italy where I have access to firm-level payment data that allows me to study the probability that funds go to firms that are more likely to employ high skilled workers. The results mirror those presented above and show that local governments seem more likely to subsidize low-knowledge intensive firms in regions with many low skilled workers, while the national government does not.

Second, another possible explanation of the results is that local governments are actually implementing the economically optimal investment, which happens to favor the local political majority, and that, on the contrary, national authorities are implementing a "one-size-fits-all" solution. That is, the correlation is the artifact of the higher scope for investments in TD&I in regions with high skilled workers, and local governments are the only type of authority with enough information to understand this and/or enough freedom to customize investment programs.

Four arguments independently counter this alternative interpretation. First, it is unclear why nationally appointed managing authorities that are locally based (e.g. prefects in France or "growth delivery teams" in England), should have less information or be constrained by "one-size-fits-all' policies. These authorities also have local information and manage programs customized for their specific regions.

Second, a "one-size-fits-all" approach by centrally appointed authorities should encompass low variability in the dependent variable across regions, conditional on country fixed effects, when funds are managed by such authorities. However, comparing the distributions across regions of the fraction of funds invested in TD&I shows comparable degrees of variability between local government and local authorities appointed by the central governments, as illustrated in the left and central panels of Figure O.A.2 in the Online Appendix.[31]

Third, an economic rationale for such types of investments should be captured, at least in part, by flexible enough controls for local economic characteristics of the region, such as local GDP, the sectoral composition of employment, and population. However, when I condition on such variables, the negative relationship between the fraction of low skilled workers and the likelihood of investing in innovation becomes stronger for local governments vs. other managing authorities,

[31] National programs managed directly by the central government show indeed much lower regional variation.

rather than weaker.[32] Similarly, the relationship survives even when employing regional fixed effects, which allows me to control for observable and unobservable regional characteristics by comparing allocations by national and local authorities within each region.

Finally, if local authorities were pursuing the economically optimal investment, one would expect growth as a result of such investments. In the next Section, I turn to showing that it is hard to find evidence in this direction. To do so, I analyze the data on jobs created by the programs in my data, and also review the extant literature on the causal effects of regional policies, especially with regards of their heterogeneity across poorer and richer regions.

4.2 Political Incentives and Growth

I start this Section by using the EC's survey on jobs created by each investment program, and show that investment programs create fewer jobs in regions with many low skilled workers, but only if the funds are managed by local governments.

As anticipated in Section 3.3, there are two main limitations to this analysis. First, the data is available only for two of the three main funds, the ERDF and the CF. This brings the total number of programs analyzed from 299 to 190. Second, the data on jobs created is at the program level and does not indicate, for programs active in multiple regions, where were jobs created. I thus focus on programs active only in one region, so to have a one-to-one mapping between regions and programs. This further reduces the sample from 190 to 138 programs and, differently from previous Sections, in this smaller sample each region corresponds to only one program and vice versa. In Appendix Section B.5, I show that the results are robust to extending the analysis to all programs by weighting regional characteristics for each program according to the share invested in each region.

In this sample where one region corresponds to one program, and vice versa, I estimate the following specification:

$$\begin{aligned} Y_p = \alpha + \beta_R \text{LS}_{j(p)} + (\gamma_{RR} + \beta_{RR}\text{LS}_{j(p)}) \times \mathbb{1}(\text{Managed by Local Government}_p) \\ + \delta \mathbf{X}_p + \tau \mathbf{R}_{j(p)} + \varepsilon_p \end{aligned} \tag{13}$$

where Y_p is the log of jobs created by program p per €1mil. invested and $j(p)$ is the region targeted by the program. All variables mirror specification (12) of Table 1, with the difference that, since I am restricting to programs that are active in only one region, the sample is made exclusively of regional programs, so that there is no separate dummy to distinguish between national and regional

[32] Panel B of Appendix Figure B.1 shows that it is enough to condition linearly only on initial GDP p.c. to find no relationship between investment in innovation and the local fraction of low skilled workers for centrally-appointed authorities, but still a negative and strongly significant one for local governments.

TABLE 2: JOBS CREATED AND FRACTION OF LOW SKILLED WORKERS

	Dependent variable:						
	log(jobs created per €1mil.)						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Fraction Low Skilled Workers	−3.659***	−2.060	0.416	0.739	−0.082	−0.534	−1.050
	(1.364)	(1.930)	(2.021)	(1.935)	(1.720)	(1.674)	(1.740)
Managed by Local Govt.		3.265	4.565**	4.266**	4.347**	4.033**	3.117
		(2.008)	(2.069)	(2.069)	(1.985)	(1.670)	(1.990)
Low Sk. × Local Govt.		−4.116	−5.825**	−5.478**	−5.977**	−5.698***	−4.381*
		(2.610)	(2.679)	(2.678)	(2.525)	(2.169)	(2.592)
Objective FE			✓	✓	✓	✓	✓
Regional Initial GDP and Pop.				✓	✓	✓	✓
Regional Initial Sectoral Comp.					✓	✓	✓
Program-Level Controls						✓	✓
Sectors Targeted by Program							✓
$\mathbb{E}(Y)$	1.95	1.95	1.95	1.95	1.95	1.95	1.95
$\mathbb{E}$(frac. Low Skill)	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Observations	138	138	138	138	138	138	138
R^2	0.059	0.077	0.174	0.196	0.441	0.602	0.625

Note: The table reports OLS results from a regression of log(jobs created per €) by a regional investment program against the fraction of low skilled workers in that region, allowing for heterogeneous effects across types of authorities managing the program. Regional controls are constructed and included following the discussion in Section 4.2. Parentheses report heteroskedasticity-robust standard errors. The sample is made by regional programs concentrated in only one region.

programs. The regional controls $\mathbf{R}_{j(p)}$ are the log of 2007 GDP p.c. and of 2007 population, and shares of employment across six broad sectors. The program level controls, $\mathbf{X}_p$, are fixed effects for the objective pursued by the program (whether "Objective 1" or not), the share of investments in each program made through a specific form of financing (e.g. the share of investment in the form of loans, non-repayable aid, etc..), the share of investments to a given type of territory (e.g. the share of investment in urban areas, rural areas, etc..), and the share of the program invested in each of the six broad sectoral aggregates. Standard errors are robust to heteroskedasticity.[33]

Table 2 reports the results. Column (1) shows the unconditional correlation across regional programs between jobs created and the fraction of low skilled workers, showing a negative relation-

[33]The specification here thus mirrors as closely as possible Equation (12) of Table 1, with four main differences that are due to the coarser level of aggregation available and the smaller sample. First, I do not weigh observations since the analysis is already at the program (region) level. Second, results do not survive when including country fixed effects. The main obstacle is that I cannot use variation on jobs created by a program across different regions, as the data is only at the program level. Indeed, the variation for funds not managed by local governments only comes from eight countries (as opposed to 16 in the full sample) and, for half of these eight countries, I have data only for less than five regions within the country, which makes within-country comparisons very difficult. Third, given the smaller sample, I also do not add the non-linear controls on regional characteristics, but this does not affect the qualitative results. Finally, the controls on the type of financing, territory, and sectors targeted here are aggregated at the level at which the data is available (the program), while in Table 1 I could employ fixed effects for all of these characteristics since the data was at the payment-bin-region level.

ship. Column (2) adds the interaction for whether the program is managed by a local government, which shows that this negative relationship between jobs created and the fraction of low skilled workers is more negative for programs managed by local governments.

Column (3) adds the program "objective" fixed effect, which, as discussed, is a rough proxy for local economic conditions since "Objective 1" status is based on regional economic conditions. Even when adding only this control, the data shows that the negative relationship between jobs created per euro and the local share of low skilled workers is present only if programs are managed by local governments, not if they are regional programs managed by local authorities who are nationally appointed.

The successive columns progressively add controls, showing that the relationship is robust (and actually becomes stronger), when adding controls for local economic characteristics and other program-level controls. In particular, Column (7) adds controls for the sectors targeted by the program. As in Table 1, the coefficient of interest decreases in magnitude but remains negative and significant—showing that the negative relationship between jobs created and the fraction of low skilled workers is not only driven by which broad sectors are being targeted by the program, but also from variation within broad sectoral aggregates. In general, the pattern of the coefficients across columns is very similar to the one shown in Table 1.

Choosing Column (6) as my preferred specification, which still exploits cross-sectoral variation while adding all other controls, implies that a one standard deviation increase in the fraction of low skilled workers (8.6 p.p.) corresponds to a 41.5% decline in jobs created per euro. At the average cost per job in this subsample (€142,000), this corresponds to an increase in the cost per job created of €100,000. To put this regional heterogeneity in perspective, Cingano et al. (2025) estimate the difference between the North-Center and the South of Italy in the cost per job created through a regional subsidy to be between €130,000 and €173,000.

4.2.1 Examples from the Literature

The model's predictions on growth are also corroborated by several pieces of evidence found by the literature that studies the effects of place-based transfers on economic development, which the model can rationalize.

For instance, Becker et al. (2013) find that the positive effects of EU investments are only concentrated in regions with high human capital and good local institutions. The model explains why this by providing a direct link between the fraction of low skilled workers and growth outcomes. As anticipated above, recent work by Cingano et al. (2025) estimates the effects of a place based firm subsidy active in Italy, partially financed by the Cohesion Policy, and finds that the ability of politicians to influence the allocation of resources to different firms is economically costly, but

especially so in the South. They find that, if allocations were to be decided relying only on political discretion, as opposed to no political discretion at all, it would cost €112,000 more to create one job in the South, while only €39,000 more in the Center-North.

Other examples of failures of the Cohesion Policy can be explained through the political incentives of the managers of the funds. Albanese et al. (2021) find no effects of the European Regional Development Funds (one of the Cohesion policy's funds) on firms' productivity in the South of Italy. Similarly, Ciani and de Blasio (2015) find that the European Structural Funds (another Cohesion fund) had a very small impact on employment, population, and house prices. Barone et al. (2016) use evidence from the Abruzzi region and argue that the Cohesion Policy fails at moving regions to higher GDP growth paths. In all these interventions, regional governments were among the key managers of the funds and the recipient regions are relatively abundant in unskilled workers. Relatedly, Brès et al. (2024) exploit a 2000 policy change that granted more political discretion on how to allocate regional funds in France's poorer regions. They find that higher political discretion caused funds to be diverted from investment in R&D mainly towards low skilled sectors, with negative effects on value added per worker, in line with the predictions developed here.[34]

Outside of the Cohesion Policy, Felice and Lepore (2017) study the "Cassa del Mezzogiorno" (CasMez), a large place based policy active in the South of Italy between 1951 and 1992, and show that the policy seemed to have had an effect on convergence only until the the early 1970s—the "golden period" of convergence. From 1973 onward, however, convergence completely stopped because, they argue, the policy started following political considerations. What allowed this to happen was a change in the governance model, which, through two reforms in 1971 and 1976, transferred the governance of the CasMez from the central government to regional governments. As the authors put it, "such changes only increased political pressure and nepotism, and resulted in a further dispersion of resources towards unproductive expenditures."[35] The model transparently predicts this failure of the policy in generating convergence without necessarily resorting to myopia or opportunistic politicians, but simply as an artifact of the political conflict across heterogeneous workers.

[34] They do, however, find an increase in employment, albeit in conjunction with a decrease in hours worked. Depending on the parameters, this is also coherent with the model and with an overall negative effect on productivity.

[35] In line with this, Buscemi and Romani (2022) find that municipalities politically aligned with the regional government received more funds after the reform, that this is driven by subsidies to local firms, and that it did not produce any positive impacts on long-run outcomes. Relatedly, Albanese et al. (2024) use a border discontinuity design across historical CasMez borders to show that the policy had almost no effect on growth, but long-lasting effects on raising voters' demand for government transfers and welfare policies.

Conclusion

This paper discusses political constraints to the implementation of place based policies and shows that policies that try to spur growth in poorer areas may be counterproductive when local voters control how to spend regional transfers. To be effective, regional transfers need to incentivize transformation in poorer areas by keeping or attracting productive workers where they are scarce. However, this requires the policy to favor the minority class in poor regions, something that is politically hard. In that case, regional transfers get captured by local incumbent majorities and, due to spatial equilibrium forces, they can end up making recipient regions poorer.

This dynamic highlights a new type of "political resource curse" (Brollo et al., 2013), which does not stem from corruption or voters' myopia, but from the political conflict between heterogeneous workers. These findings reinforce the view that, for growth to happen in areas that are struggling, it is important to either put conditionality clauses on how regional transfers can be spent, or to design interventions that can directly improve the productivity of low skilled workers. For instance, with reskilling that helps them transition out of low skilled industries (Katz et al., 2022).

More generally, this paper offers a tractable way to take into account political economy incentives in modern spatial models, which shows that political incentives can substantially constrain the set of feasible welfare-improving spatial policies. While my main application is the case of place based transfers to poor regions, future extensions could study political economy constraints to other types of spatial policies or in more quantitative applications.

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A Theoretical Appendix

This Section presents derivations and proofs for Section 1.

A.1 General Statement of Proposition 1 and Proof

I prove here a more general statement without requiring that spillovers are constant elasticity, which nests Proposition 1 in the main text.

Before proceeding to the Proof, I prove the following Lemma.

Lemma 1 (Migration Elasticities)**.** *For a small change to transfers to types $\theta = L, H$ in city j, migration elasticities satisfy:*

$$\begin{aligned}
\varepsilon^{\tau,j}_{L,L} &= \frac{\partial \log L^L_j}{\partial \log \tau^L_j} = \left(\sigma_H - \gamma^{A,j}_{H,H} - \gamma^{P,j}_{H,H}\right)\psi^j \quad & \varepsilon^{\tau,j}_{L,H} &= \frac{\partial \log L^H_j}{\partial \log \tau^L_j} = \left(\gamma^{A,j}_{L,H} + \gamma^{P,j}_{L,H}\right)\psi^j \\
\varepsilon^{\tau,j}_{H,L} &= \frac{\partial \log L^L_j}{\partial \log \tau^H_j} = \left(\gamma^{A,j}_{H,L} + \gamma^{P,j}_{H,L}\right)\psi^j & \varepsilon^{\tau,j}_{H,H} &= \frac{\partial \log L^H_j}{\partial \log \tau^H_j} = \left(\sigma_L - \gamma^{A,j}_{L,L} - \gamma^{P,j}_{L,L}\right)\psi^j \quad (14)
\end{aligned}$$

Proof. Denote city-specific amenities and productivities as functions:

$$\begin{aligned}
a^\theta_{jt} &= a_j\left(L^L_{jt}, L^H_{jt}\right) \\
z^\theta_{jt} &= z_j\left(L^L_{jt}, L^H_{jt}\right)
\end{aligned}$$

And spillovers as:

$$\frac{\partial \log a^\theta_j}{\partial \log L^{\theta'}_j} = \gamma^{A,j}_{\theta',\theta}; \qquad \frac{\partial \log z^\theta_j}{\partial \log L^{\theta'}_j} = \gamma^{P,j}_{\theta',\theta}$$

As in Equation (3), city sizes L^L_j, L^H_j satisfy, for all j:

$$\frac{L^\theta_{jt}}{L^\theta} = \frac{\left(G^\theta_j\left(L^L_{jt}, L^H_{jt}\right)\tau^\theta_{jt}\bar{\tau}_t\right)^{1/\sigma_\theta}}{\int\left(G^\theta_k\left(L^L_{kt}, L^H_{kt}\right)\tau^\theta_{kt}\bar{\tau}_t\right)^{1/\sigma_\theta}dk} = \frac{\left(G^\theta_j\left(L^L_{jt}, L^H_{jt}\right)\tau^\theta_{jt}\right)^{1/\sigma_\theta}}{\int\left(G^\theta_k\left(L^L_{kt}, L^H_{kt}\right)\tau^\theta_{kt}\right)^{1/\sigma_\theta}dk}$$

where $G^\theta_j\left(L^L_{jt}, L^H_{jt}\right) = a^\theta_j\left(L^L_{jt}, L^H_{jt}\right) z^\theta_j\left(L^L_{jt}, L^H_{jt}\right)$.

Dropping time subscripts and denoting $\ell^\theta_j = \log L^\theta_j$ and $g^\theta_j = \log G^\theta_j$, let:

$$\frac{\partial g^\theta_j}{\partial \ell^{\theta'}_j} = \gamma^j_{\theta',\theta} = \frac{\partial \log a^\theta_j}{\partial \ell^{\theta'}_j} + \frac{\partial \log z^\theta_j}{\partial \ell^{\theta'}_j} = \gamma^{A,j}_{\theta',\theta} + \gamma^{P,j}_{\theta',\theta}$$

From city sizes, one has:

$$\ell_j^L - \ell^L = \frac{1}{\sigma_L}\left(g_j^L + \log \tau_{jt}^L\right) - \log\left(\int \left(G_k^L\left(L_{kt}^L, L_{kt}^H\right)\tau_{kt}^L\right)^{1/\sigma_L} dk\right)$$
$$\ell_j^H - \ell^H = \frac{1}{\sigma_H}\left(g_j^H + \log \tau_{jt}^H\right) - \log\left(\int \left(G_k^H\left(L_{kt}^L, L_{kt}^H\right)\tau_{kt}^H\right)^{1/\sigma_H} dk\right)$$

I start by deriving the migration elasticities to transfers to low skilled workers. Using the implicit function theorem, one has:

$$\frac{\partial \ell_j^L}{\partial \log \tau_j^L} = \frac{1}{\sigma_L}\left(\frac{\partial \ell_j^L}{\partial \log \tau_j^L}\gamma_{L,L}^j + \frac{\partial \ell_j^H}{\partial \log \tau_j^L}\gamma_{H,L}^j + 1\right)$$
$$\frac{\partial \ell_j^L}{\partial \log \tau_j^L}\left(\sigma_L - \gamma_{L,L}^j\right) - \frac{\partial \ell_j^H}{\partial \log \tau_j^L}\gamma_{H,L}^j = 1$$

where note that $\log\left(\int \left(G_k^L\left(L_{kt}^L, L_{kt}^H\right)\tau_{kt}^L\right)^{1/\sigma_L} dk\right)$ does not change since each city is atomistic. Similarly, for the high skilled:

$$\frac{\partial \ell_j^H}{\partial \log \tau_j^L} = \frac{1}{\sigma_H}\left(\frac{\partial \ell_j^L}{\partial \log \tau_j^L}\gamma_{L,H}^j + \frac{\partial \ell_j^H}{\partial \log \tau_j^L}\gamma_{H,H}^j\right)$$
$$-\frac{\partial \ell_j^L}{\partial \log \tau_j^L}\gamma_{L,H}^j + \frac{\partial \ell_j^H}{\partial \log \tau_j^L}\left(\sigma_H - \gamma_{H,H}^j\right) = 0$$

which gives:

$$\begin{bmatrix} \sigma_L - \gamma_{L,L}^j & -\gamma_{H,L}^j \\ -\gamma_{L,H}^j & \sigma_H - \gamma_{H,H}^j \end{bmatrix} \begin{bmatrix} \frac{\partial \ell_j^L}{\partial \log \tau_j^L} \\ \frac{\partial \ell_j^H}{\partial \log \tau_j^L} \end{bmatrix} = \begin{bmatrix} 1 \\ 0 \end{bmatrix}$$
$$\begin{bmatrix} \frac{\partial \ell_j^L}{\partial \log \tau_j^L} \\ \frac{\partial \ell_j^H}{\partial \log \tau_j^L} \end{bmatrix} = \psi^j \begin{bmatrix} \sigma_H - \gamma_{H,H}^j \\ \gamma_{L,H}^j \end{bmatrix}$$

where $\psi^j = \left[\left(\sigma_L - \gamma_{L,L}^j\right)\left(\sigma_H - \gamma_{H,H}^j\right) - \gamma_{H,L}^j\gamma_{L,H}^j\right]^{-1}$.

Similarly, for a transfer to high skilled workers, one has:

$$\begin{bmatrix} \frac{\partial \ell_j^L}{\partial \log \tau_j^H} \\ \frac{\partial \ell_j^H}{\partial \log \tau_j^H} \end{bmatrix} = \psi^j \begin{bmatrix} \gamma_{H,L}^j \\ \sigma_L - \gamma_{L,L}^j \end{bmatrix}$$

Putting everything together yields (14). □

I turn now to the more general version of Proposition 1.

Proposition 4 (Voting Solution)**.** *Let $\hat{\tau}_{jt}^L$ and $\hat{\tau}_{jt}^H$ be the subsidy rates that exhaust the budget t_{jt} in region j at time t when allocating the transfer to low and high skilled workers, respectively. Let $\boldsymbol{\tau}_{jt}^L = \left(\log \hat{\tau}_{jt}^L, 0\right)$ and $\boldsymbol{\tau}_{jt}^H = \left(0, \log \hat{\tau}_{jt}^H\right)$ be the vectors of the logs of such subsidy rates. Then there exists an $\alpha \in [0,1]$ such that a voter of type θ will prefer to allocate the transfer to a worker of the other type (denoted as $\neg\theta$), rather than capturing it, if and only if:*

$$g^\theta = \frac{\partial \log u_{ijt}^\theta(\tilde{\boldsymbol{\tau}})}{\partial \log \tau_{jt}^\theta} \log \hat{\tau}_{jt}^\theta - \frac{\partial \log u_{ijt}^\theta(\tilde{\boldsymbol{\tau}})}{\partial \log \tau_{jt}^{\neg\theta}} \log \hat{\tau}_{jt}^{\neg\theta} \leq 0$$

where $\tilde{\boldsymbol{\tau}} = \alpha \boldsymbol{\tau}_{jt}^L + (1-\alpha)\boldsymbol{\tau}_{jt}^H$. If production by each type in each city is finite and strictly positive and migration and spillover elasticities in j are finite, the derivatives are:

$$\frac{\partial \log u_{ijt}^\theta}{\partial \log \tau_{jt}^\theta} = \underbrace{1}_{\substack{\Delta \text{ in} \\ \text{consumption}}} + \sum_{\theta'=L,H} \underbrace{\left(\gamma_{\theta',\theta}^{A,j,t} + \gamma_{\theta',\theta}^{P,j,t}\right) \cdot \varepsilon_{\theta,\theta'}^{\tau,j,t}}_{\substack{\text{Net spillover for } \theta \text{ from} \\ \text{migration response of } L_{jt}^{\theta'} \text{ to } \tau_{jt}^\theta}}; \qquad \frac{\partial \log u_{ijt}^\theta}{\partial \log \tau_{jt}^{\neg\theta}} = \sum_{\theta'=L,H} \underbrace{\left(\gamma_{\theta',\theta}^{A,j,t} + \gamma_{\theta',\theta}^{P,j,t}\right) \cdot \varepsilon_{\neg\theta,\theta'}^{\tau,j,t}}_{\substack{\text{Net spillover for } \theta \text{ from} \\ \text{migration response of } L_j^{\theta'} \text{ to } \log \tau_j^{\neg\theta}}} \tag{15}$$

where $\varepsilon_{\theta,\theta'}^{\tau,j,t} = \partial \log L_{jt}^{\theta'} / \partial \log \tau_{jt}^\theta$ is the migration elasticity of type θ', in city j, at time t, with respect to a subsidy to θ.

If spillovers are constant elasticity, and around a competitive equilibrium, g^θ is to the leading order:

$$\frac{Y_{j,0}^\theta}{t_j} \times g^\theta \approx \underbrace{1}_{\text{Direct effect}} + \underbrace{\sum_{\theta'=L,H} \left(\underbrace{\gamma_{\theta',\theta}^A + \gamma_{\theta',\theta}^P}_{\text{Spillovers}}\right) \cdot \left(\underbrace{\varepsilon_{\theta,\theta'}^\tau - \varepsilon_{\neg\theta,\theta'}^\tau \frac{Y_{j,0}^\theta}{Y_{j,0}^{\neg\theta}}}_{\text{Migration response}}\right)}_{\text{General equilibrium effects}} \tag{16}$$

where $Y_{j,0}^\theta$ is the GDP produced by type θ in region j in the competitive equilibrium, and the migration elasticities are functions of primitives only.

Proof. Recall the voting problem, which is:

$$\begin{aligned}\mathcal{P}_i^\theta := \max_{\theta^*=L,H} \quad & u_{ijt}^\theta(\tau_{jt}^L, \tau_{jt}^H, L_{jt}^L, L_{jt}^H) \\ s.t. \quad & \mathbf{L}_t \text{ satisfies (3)} \\ & L_{jt}^\theta z_{jt}^\theta (\tau_{jt}^\theta - 1) = t_{jt} \qquad \text{for } \theta = \theta^* \\ & \tau_{jt}^\theta = 1 \qquad \text{for } \theta \neq \theta^*\end{aligned}$$

From now on, I will omit the time subscripts for notational convenience. The voter simply compares utility in the two allocations $\boldsymbol{\tau}_j^L = \left(\log \hat{\tau}_j^L, 0\right); \quad \boldsymbol{\tau}_j^H = \left(0, \log \hat{\tau}_j^H\right)$, accounting for the fact that sizes will be a function of subsidies. Take the log of utility, which is:

$$\log u_{ij}^\theta(\boldsymbol{\tau}) = \log a_j^\theta \left(L_j^L(\boldsymbol{\tau}), L_j^H(\boldsymbol{\tau})\right) + \log \tau_j^\theta(\boldsymbol{\tau}) + \log \bar{\tau} + \log z_j^\theta \left(L_j^L(\boldsymbol{\tau}), L_j^H(\boldsymbol{\tau})\right) + \log \varepsilon_{ij}^\theta$$

where $\log \tau_j^\theta(\boldsymbol{\tau})$ can either be $\log \hat{\tau}_j^\theta$ or 0, and $\log \bar{\tau}$ is the aggregate tax rate, which, since the city is atomistic, does not depend on which type receives the allocated transfer of t_j in city j. By the mean value theorem, with $\tilde{\boldsymbol{\tau}} = \alpha \boldsymbol{\tau}_j^L + (1-\alpha)\boldsymbol{\tau}_j^H$, the difference in utilities can be expressed as:

$$\begin{aligned}\log u_{ij}^\theta \left(\boldsymbol{\tau}_j^L\right) - \log u_{ij}^\theta \left(\boldsymbol{\tau}_j^H\right) &= \nabla \log u_{ij}^\theta(\tilde{\boldsymbol{\tau}}) \cdot \left(\boldsymbol{\tau}_j^L - \boldsymbol{\tau}_j^H\right) \\ &= \frac{\partial \log u_{ij}^\theta(\tilde{\boldsymbol{\tau}})}{\partial \log \tau_j^\theta} \log \hat{\tau}_j^\theta - \frac{\partial \log u_{ij}^\theta(\tilde{\boldsymbol{\tau}})}{\partial \log \tau_j^{\neg\theta}} \log \hat{\tau}_j^{\neg\theta}\end{aligned}$$

Using the chain rule, derivatives are:

$$\begin{aligned}\frac{\partial \log u_{ij}^\theta(\tilde{\boldsymbol{\tau}})}{\partial \log \tau_j^\theta} &= 1 + \mathcal{G}_{j,\theta,\theta} \\ \frac{\partial \log u_{ij}^\theta(\tilde{\boldsymbol{\tau}})}{\partial \log \tau_j^{\neg\theta}} &= \mathcal{G}_{j,\neg\theta,\theta}\end{aligned}$$

Where $\mathcal{G}_{j,\hat{\theta},\theta}$ are the change in amenities and productivity for type θ given a transfer to $\hat{\theta} = \theta, \neg\theta$ due to the migration responses. One has:

$$\begin{aligned}\mathcal{G}_{j,\hat{\theta},\theta} = &\frac{\partial \log a_j^\theta}{\partial \log L_j^L} \frac{\partial \log L_j^L}{\partial \log \tau_j^{\hat{\theta}}} + \frac{\partial \log a_j^\theta}{\partial \log L_j^H} \frac{\partial \log L_j^H}{\partial \log \tau_j^{\hat{\theta}}} \\ &+ \frac{\partial \log z_j^\theta}{\partial \log L_j^L} \frac{\partial \log L_j^L}{\partial \log \tau_j^{\hat{\theta}}} + \frac{\partial \log z_j^\theta}{\partial \log L_j^H} \frac{\partial \log L_j^H}{\partial \log \tau_j^{\hat{\theta}}}\end{aligned}$$

$$= \sum_{\theta'=L,H} \left(\gamma^{A,j}_{\theta',\theta} + \gamma^{P,j}_{\theta',\theta} \right) \varepsilon^{\tau,L,j}_{\hat{\theta},\theta'}$$

Which gives $g^\theta = \frac{\partial \log u^\theta_{ij}(\tilde{\boldsymbol{\tau}})}{\partial \log \tau^\theta_j} \log \hat{\tau}^\theta_j - \frac{\partial \log u^\theta_{ij}(\tilde{\boldsymbol{\tau}})}{\partial \log \tau^{\neg\theta}_j} \log \hat{\tau}^{\neg\theta}_j = \left(1 + \mathcal{G}_{j,\theta,\theta}\right) \log \hat{\tau}^\theta_j - \mathcal{G}_{j,\neg\theta,\theta} \log \hat{\tau}^{\neg\theta}_j$ in the Proposition above.

To reach (16) and (7) in the main text, assume that amenities and productivities are constant elasticity, so that $\gamma^{x,j}_{\theta',\theta} = \gamma^x_{\theta',\theta}$ for all j, $x = A, P$, and θ, θ'. Which implies $\varepsilon^{\tau,j}_{\hat{\theta},\theta'} = \varepsilon^\tau_{\hat{\theta},\theta'}$ for all $j, \hat{\theta}, \theta'$. The equation becomes:

$$g^\theta = \log \hat{\tau}^\theta_j + \sum_{\theta'=L,H} \left(\gamma^A_{\theta',\theta} + \gamma^P_{\theta',\theta} \right) \left(\varepsilon^\tau_{\theta,\theta'} \log \hat{\tau}^\theta_j - \varepsilon^\tau_{\neg\theta,\theta'} \log \hat{\tau}^{\neg\theta}_j \right)$$

Around a competitive equilibrium ($t_j = 0$), this can be approximated as:

$$g^\theta(t_j) = g(0) + \left[\frac{\partial \log \hat{\tau}^\theta_j(0)}{\partial t_j} + \sum_{\theta'} \left(\gamma^A_{\theta',\theta} + \gamma^P_{\theta',\theta} \right) \left(\varepsilon^\tau_{\theta,\theta'} \frac{\partial \log \hat{\tau}^\theta_j(0)}{\partial t_j} - \varepsilon^\tau_{\neg\theta,\theta'} \frac{\partial \log \hat{\tau}^{\neg\theta}_j(0)}{\partial t_j} \right) \right] \cdot \left(t_j - 0 \right)$$

Note that, when $t_j = 0$, then $\hat{\tau}^\theta_j = \hat{\tau}^{\neg\theta}_j = 1$, which implies $g(0) = 0$.

The derivatives of corner subsidies with respect to the regional transfer are given by the local government's budget constraint, which is, for each θ:

$$\left(\hat{\tau}^\theta_j - 1 \right) z^\theta_j L^\theta_j = t_j$$

Differentiating with respect to t_j gives:

$$\frac{\partial \hat{\tau}^\theta_j}{\partial t_j} z^\theta_j L^\theta_j dt_j + \left(\hat{\tau}^\theta_j - 1 \right) \left(\left(\frac{z^\theta_j}{L^\theta_j} + \frac{\partial z^\theta_j}{\partial L^\theta_j} \right) \frac{\partial L^\theta_j}{\partial \hat{\tau}^\theta_j} + \frac{\partial z^\theta_j}{\partial L^{\theta'}_j} \frac{\partial L^{\theta'}_j}{\partial \hat{\tau}^\theta_j} \right) \frac{\partial \hat{\tau}^\theta_j}{\partial t_j} L^\theta_j dt_j = dt_j$$

Evaluating this at $t_j = 0$ yields $\hat{\tau}^\theta_j = 1$, which implies:

$$\frac{\partial \hat{\tau}^\theta_j}{\partial t_j} z^\theta_j L^\theta_j = 1 \implies \frac{\partial \hat{\tau}^\theta_j}{\partial t_j} = \frac{\partial \log \hat{\tau}^\theta_j}{\partial t_j} = \frac{1}{Y^\theta_{j,0}}$$

which yields:

$$g^\theta(t_j) = 0 + \left[\frac{1}{Y^\theta_{j,0}} + \sum_{\theta'} \left(\gamma^A_{\theta',\theta} + \gamma^P_{\theta',\theta} \right) \left(\varepsilon^\tau_{\theta,\theta'} \frac{1}{Y^\theta_{j,0}} - \varepsilon^\tau_{\neg\theta,\theta'} \frac{1}{Y^{\neg\theta}_{j,0}} \right) \right] t_j \tag{17}$$

$$\frac{g^{\theta}(t_j)}{t_j}\Upsilon^{\theta}_{j,0} = 1 + \sum_{\theta'}\left(\gamma^{A}_{\theta',\theta} + \gamma^{P}_{\theta',\theta}\right)\left(\varepsilon^{\tau}_{\theta,\theta'} - \varepsilon^{\tau}_{\neg\theta,\theta'}\frac{\Upsilon^{\theta}_{j,0}}{\Upsilon^{\neg\theta}_{j,0}}\right) \tag{18}$$

which is Equation (16). (7) follows trivially since $\frac{\Upsilon^{\theta}_{j,0}}{t_j} > 0$. □

A.2 Proof of Proposition 2

Voting Condition Use Proposition 1 and (14) for migration elasticities, one has:

$$\begin{aligned} g^L =& \log\hat{\tau}^L_j\left[1 + \gamma^A(\sigma - \gamma^A - \gamma^P)\psi + (\gamma^A + \gamma^P)\gamma^A\psi\right] \\ & - \log\hat{\tau}^H_j\left[\gamma^A(\gamma^A + \gamma^P)\psi + (\gamma^A + \gamma^P)(\sigma - \gamma^A)\psi\right] \\ =& \log\hat{\tau}^L_j\left(\frac{\sigma - \gamma^A - \gamma^P}{\sigma - 2\gamma^A - \gamma^P}\right) - \log\hat{\tau}^H_j\left(\frac{\gamma^A + \gamma^P}{\sigma - 2\gamma^A - \gamma^P}\right) \end{aligned}$$

Effects When $g^L > 0$, one has that the transfer goes to the low skilled workers. Sizes in the new equilibrium (indexed by 1 in the subscript), are:

$$L^H_{j,1} = \frac{\left(\tau^L_{j,1}\right)^{\gamma^A\psi}\left(\iota^H_j\right)^{(\sigma-\gamma^A)\psi}}{\left(\tau^L_{s,1}\right)^{\gamma^A\psi} + \iota^{(\sigma-\gamma^A)\psi}} \qquad L^L_{j,1} = \frac{\left(\tau^L_{j,1}\right)^{(\sigma-\gamma^A-\gamma^P)\psi}\left(\iota^H_j\right)^{(\gamma^A+\gamma^P)\psi}}{\left(\tau^L_{s,1}\right)^{(\sigma-\gamma^A-\gamma^P)\psi} + \iota^{(\gamma^A+\gamma^P)\psi}}$$

So that:

$$L^L_{s,1} > L^L_{s,0}; \qquad L^H_{s,1} < L^H_{s,0}$$

Note that:

$$\frac{\partial y_{j1}}{\partial L^H_{j1}} = \frac{\gamma^P}{L^H_{j1}}y_{j1} + \frac{(\phi-1)L^L_{j1}}{\left(L^L_{j1} + L^H_{j1}\right)^2}\left(L^H_{j1}\right)^{\gamma^P} > 0 \qquad \frac{\partial y_{j1}}{\partial L^L_{j1}} = -\frac{(\phi-1)\left(L^H_{j1}\right)^{1+\gamma^P}}{\left(L^L_{j1} + L^H_{j1}\right)^2} < 0$$

Thus, the South is becoming poorer and the North richer: $y_{s,1} < y_{s,0}$ and $y_{n,1} > y_{n,0}$. To decompose the effect, note that the elasticity of GDP per capita with respect to a transfer is:

$$\frac{\partial y_j}{\partial t_s} = \left[-\frac{(\phi-1)\left(L^H_j\right)^{1+\gamma^P}}{\left(L^L_j + L^H_j\right)^2}\frac{\partial L^L_j}{\partial t_s} + \frac{(\phi-1)L^L_j\left(L^H_j\right)^{\gamma^P} + \gamma^P\left(L^H_j\right)^{\gamma^P-1}L^L_j\left(L^L_j + L^H_j\right)}{\left(L^L_j + L^H_j\right)^2}\frac{\partial L^H_j}{\partial t_s}\right]$$

$$\propto \underbrace{(\phi-1)(\delta_H-\delta_L)\frac{L_j^L\left(L_j^H\right)^{1+\gamma^P}}{\left(L_j^L+L_j^H\right)}}_{\text{Composition effect}}+\underbrace{\gamma^P\delta_H\left(L_j^H\right)^{\gamma^P}L_j^L}_{\text{Loss of spillovers}}<0 \tag{19}$$

where $\delta_\theta=\frac{\partial L_j^\theta}{\partial t_s}\frac{t_s}{L_j^\theta}$ and, when $g<0$, $\delta_H<0$ and $\delta_L>0$. Wages are:

$$z_j^\theta=\phi^\theta\left(L_j^H\right)^{\gamma^P}$$

and are weakly increasing in the number of high skilled workers since $\gamma^P\geq 0$. Thus, $z_{s,1}^\theta<z_{s,0}^\theta$ for all $\theta=L,H$. □

A.3 Proof of Proposition 3

Recall that utility for worker i of type θ in city j is:

$$\log u_{ijt}^\theta=\log\iota_j^\theta\phi_j^\theta+\log\tau_{jt}^\theta+\log\bar{\tau}_t^\theta+\gamma_{L,\theta}\ell_{jt}^L+\gamma_{H,\theta}\ell_{jt}^H+\log\varepsilon_{ij}^\theta$$

where note that, differently from the main text, I here allow the place blind tax to be type-specific, so as to ignore cross-type place blind redistributive motives. $\gamma_{\theta',\theta}$ are the net spillovers from type θ' to θ, i.e. $\gamma_{\theta',\theta}=\gamma_{\theta',\theta}^A+\gamma_{\theta',\theta}^P$.

Dropping time subscripts for convenience, the change in the $j-$specific part of the utility following a transfer to type x in all cities in region j is:

$$\begin{aligned}\frac{d\log u_j^\theta}{d\log\tau_j^x}&=\frac{\partial\log\tau_j^\theta}{\partial\log\tau_j^x}+\frac{\partial\log\bar{\tau}^\theta}{\partial\log\tau_j^x}+\gamma_{L,\theta}\frac{\partial\ell_j^L}{\partial\log\tau_j^x}+\gamma_{H,\theta}\frac{\partial\ell_j^H}{\partial\log\tau_j^x}\\\frac{d\log u_k^\theta}{d\log\tau_j^x}&=\frac{\partial\log\bar{\tau}^\theta}{\partial\log\tau_j^x}+\gamma_{L,\theta}\frac{\partial\ell_k^L}{\partial\log\tau_j^x}+\gamma_{H,\theta}\frac{\partial\ell_k^H}{\partial\log\tau_j^x}\end{aligned}$$

where $\frac{d\log\tau_j^\theta}{d\log\tau_j^x}=1$ if $x=\theta$ and 0 otherwise, and the $\frac{d\log\bar{\tau}^\theta}{d\log\tau_j^x}$ is coming from the fiscal impact of the subsidy on the national governments' resources. As in (3), log sizes $\ell_{jt}^x=\log L_{jt}^x$ obey:

$$\begin{aligned}\ell_j^L&=\varepsilon_{LL}\log\tau_j^L+\varepsilon_{HL}\log\tau_j^H+\kappa_L-\log(\delta_L)\\\ell_j^H&=\varepsilon_{LH}\log\tau_j^L+\varepsilon_{HH}\log\tau_j^H+\kappa_H-\log(\delta_H)\end{aligned}$$

where $\delta_L=\int\left(\iota_k^L\phi_k^L\tau_k^L\right)^{\varepsilon_{LL}}\left(\iota_k^H\phi_k^H\tau_k^H\right)^{\varepsilon_{HL}}dk=\varsigma_s^L\left(\tau_s^L\right)^{\varepsilon_{LL}}\left(\tau_s^H\right)^{\varepsilon_{HL}}+\varsigma_n^L\left(\tau_n^L\right)^{\varepsilon_{LL}}\left(\tau_n^H\right)^{\varepsilon_{HL}}$ and $\delta_H=\int\left(\iota_k^L\phi_k^L\tau_k^L\right)^{\varepsilon_{LH}}\left(\iota_k^H\phi_k^H\tau_k^H\right)^{\varepsilon_{HH}}dk=\varsigma_s^L\left(\tau_s^L\right)^{\varepsilon_{LH}}\left(\tau_s^H\right)^{\varepsilon_{HH}}+\varsigma_n^L\left(\tau_n^L\right)^{\varepsilon_{LH}}\left(\tau_n^H\right)^{\varepsilon_{HH}}$, where the ςs col-

lect the city-specific fundamentals exponentiated. Migration responses are now:

$$\frac{\partial \log \ell_j^\theta}{\partial \log \tau_j^x} = \varepsilon_{x\theta} - \frac{1}{\delta_\theta}\frac{\partial \delta_\theta}{\partial \log \tau_j^x}$$
$$\frac{\partial \log \ell_h^\theta}{\partial \log \tau_j^x} = -\frac{1}{\delta_\theta}\frac{\partial \delta_\theta}{\partial \log \tau_j^x}$$

These are different from the migration responses perceived by an individual voter in an atomistic city j derived in (14), because the change in aggregate welfare takes into account that transfers are going to all cities in a given region. Now note:

$$\begin{aligned}\frac{\partial \delta_\theta}{\partial \log \tau_j^x} &= \frac{\partial}{\partial \log \tau_j^x}\left(\varsigma_s^\theta\left(e^{\varepsilon_{L,\theta}\log \tau_s^L}\right)\left(e^{\varepsilon_{H,\theta}\log \tau_s^H}\right) + \varsigma_n^\theta\left(e^{\varepsilon_{L,\theta}\log \tau_n^L}\right)\left(e^{\varepsilon_{H,\theta}\log \tau_n^H}\right)\right)\\ &= \varepsilon_{x,\theta}\left(\varsigma_j^\theta\left(\tau_j^L\right)^{\varepsilon_{L,\theta}}\left(\tau_j^H\right)^{\varepsilon_{H,\theta}}\right)\end{aligned}$$

Hence:

$$\frac{1}{\delta_\theta}\frac{\partial \delta_\theta}{\partial \log \tau_j^x} = \varepsilon_{x,\theta}\frac{\varsigma_j^\theta\left(\tau_j^L\right)^{\varepsilon_{L,\theta}}\left(\tau_j^H\right)^{\varepsilon_{H,\theta}}}{\varsigma_s^\theta\left(\tau_s^L\right)^{\varepsilon_{L\theta}}\left(\tau_s^H\right)^{\varepsilon_{H\theta}} + \varsigma_n^\theta\left(\tau_n^L\right)^{\varepsilon_{L\theta}}\left(\tau_n^H\right)^{\varepsilon_{H\theta}}} = \varepsilon_{x,\theta}L_j^\theta$$

Which implies:

$$\frac{\partial \ell_j^\theta}{\partial \log \tau_j^x} = \varepsilon_{x\theta}\left(1 - L_j^\theta\right)$$
$$\frac{\partial \ell_h^\theta}{\partial \log \tau_j^x} = -\varepsilon_{x,\theta}L_j^\theta$$

Tackling the fiscal terms, the national resource constraint is:

$$\sum_\theta\left(1-\bar{\tau}^\theta\right)\int L_k^\theta z_k^\theta \tau_k^\theta dk = \int \sum_\theta L_k^\theta z_k^\theta(\tau_k^\theta - 1)dk$$
$$\int \sum_\theta L_k^\theta z_k^\theta \tau_k^\theta dk - \sum_\theta \bar{\tau}^\theta \int L_k^\theta z_k^\theta \tau_k^\theta dk = \int \sum_\theta L_k^\theta z_k^\theta \tau_k^\theta dk - \int \sum_\theta L_k^\theta z_k^\theta dk$$
$$\bar{\tau}^L \int L_k^L z_k^L \tau_k^L dk + \bar{\tau}^H \int L_k^H z_k^H \tau_k^H dk = \int L_k^L z_k^L dk + \int L_k^H z_k^H dk$$

For the case where only type x is paying and type $\neg x$ is not paying, the resource constraint is:

$$\bar{\tau}^x \int L_k^x z_k^x \tau_k^x dk + \int L_k^{\neg x} z_k^{\neg x} \tau_k^{\neg x} dk = \int L_k^L z_k^L dk + \int L_k^H z_k^H dk$$

so that:

$$\bar{\tau}^x = \frac{Y - Y^{G,\neg x}}{Y^{G,x}}$$

where $Y^{G,\star} = \int L_k^\star z_k^\star \tau_k^\star dk$ is GDP of type $\star$, gross of fiscal transfers. Note that if type $\neg x$ does not pay and does not receive transfers, then $Y^{G,\neg x} = Y^{\neg x}$ and $Y - Y^{G,\neg x} = Y^x$, and the tax is simply $\bar{\tau}^x = \frac{Y^x}{Y^{G,x}}$. Taking logs, and for a small transfer to type x, one has:

$$\begin{aligned}
\log \bar{\tau}^x &= \log\left(Y - Y^{G,\neg x}\right) - \log Y^{G,x} \\
\frac{\partial \log \bar{\tau}^x}{\partial \log \tau_j^x} &= \frac{1}{Y - Y^{G,\neg x}} \left(\frac{\partial Y}{\partial \log \tau_j^x} - \frac{\partial Y^{G,\neg x}}{\partial \log \tau_j^x} \right) - \frac{1}{Y^{G,x}} \frac{\partial Y^{G,x}}{\partial \log \tau_j^x}
\end{aligned}$$

Around a competitive equilibrium, one has $Y - Y^{G,\neg x} = Y^{G,x} = Y^x$. If type $\neg x$ is not receiving a transfer, $\frac{\partial Y^{G,\neg x}}{\partial \log \tau_j^x} = \frac{\partial Y^{\neg x}}{\partial \log \tau_j^x}$ around a competitive equilibrium. Furthermore, $\frac{\partial Y^{G,x}}{\partial \log \tau_j^x} = \frac{\partial Y^x}{\partial \log \tau_j^x} + L_j^x z_j^x$. Because obviously $\frac{\partial Y}{\partial \log \tau_j^x} = \frac{\partial Y^{\neg x}}{\partial \log \tau_j^x} + \frac{\partial Y^x}{\partial \log \tau_j^x}$, one has:

$$\begin{aligned}
\frac{\partial \log \bar{\tau}^x}{\partial \log \tau_j^x} =& \frac{1}{Y^x} \left(\frac{\partial Y}{\partial \log \tau_j^x} - \frac{\partial Y^{\neg x}}{\partial \log \tau_j^x} - \frac{\partial Y^x}{\partial \log \tau_j^x} \right) - \frac{1}{Y^x} L_j^x z_j^x \\
=& 0 - \frac{L_j^x z_j^x}{Y^x} = -\frac{Y_j^x}{Y^x}
\end{aligned}$$

If the transfer to cities in region j is paid only by type x and goes to type x, the change in utility for type x in regions j and $k \neq j$ are:

$$\begin{aligned}
\frac{d \log u_{jt}^x}{d \log \tau_j^x} &= 1 - \frac{Y_j^x}{Y^x} + \left(1 - L_j^L\right) \varepsilon_{xL} \gamma_{L,x} + \left(1 - L_j^H\right) \varepsilon_{xH} \gamma_{H,x} \\
\frac{d \log u_{kt}^x}{d \log \tau_j^x} &= -\frac{Y_j^x}{Y^x} - L_j^L \varepsilon_{x,L} \gamma_{L,x} - L_j^H \varepsilon_{x,H} \gamma_{H,x}
\end{aligned}$$

The utility changes for the other type $\neg x$ are:

$$\begin{aligned}
\frac{d \log u_{jt}^{\neg x}}{d \log \tau_j^x} &= \frac{\partial \log \tau_j^{\neg x}}{\partial \log \tau_j^x} + \left(1 - L_j^L\right) \varepsilon_{xL} \gamma_{L,\neg x} + \left(1 - L_j^H\right) \varepsilon_{xH} \gamma_{H,\neg x} \\
\frac{d \log u_{kt}^{\neg x}}{d \log \tau_j^x} &= -L_j^L \varepsilon_{x,L} \gamma_{L,\neg x} - L_j^H \varepsilon_{x,H} \gamma_{H,\neg x}
\end{aligned}$$

Having derived the effects, I can compare the effects of a transfer to the low skilled in the South and those of one to the high skilled. Following a transfer to low skilled workers in the South, paid

by a place blind tax on low skilled workers, the changes in utilities in the South and North are:

$$\frac{d\log u_s^L}{d\log \tau_s^L} = 1 - \frac{Y_s^L}{Y^L} + \left(1 - L_s^L\right)\varepsilon_{LL}\gamma_{L,L} + \left(1 - L_s^H\right)\varepsilon_{LH}\gamma_{H,L}$$
$$\frac{d\log u_n^L}{d\log \tau_s^L} = -\frac{Y_s^L}{Y^L} - L_s^L\varepsilon_{L,L}\gamma_{LL} - L_s^H\varepsilon_{L,H}\gamma_{H,L}$$

The aggregate welfare change is:

$$\begin{aligned}
\frac{d\log \mathcal{W}^L}{d\log \tau_s^L} =& L_s^L\frac{d\log u_s^L}{d\log \tau_s^L} + L_n^L\frac{d\log u_n^L}{d\log \tau_s^L} \\
=& L_s^L\left(1 - \frac{Y_s^L}{Y^L} + \left(1 - L_s^L\right)\varepsilon_{LL}\gamma_{L,L} + \left(1 - L_s^H\right)\varepsilon_{LH}\gamma_{H,L}\right) \\
&+ \left(1 - L_s^L\right)\left(-\frac{Y_s^L}{Y^L} - L_s^L\varepsilon_{L,L}\gamma_{LL} - L_s^H\varepsilon_{L,H}\gamma_{H,L}\right) \\
=& L_s^L - \frac{Y_s^L}{Y^L} + \left(L_s^L\left(1 - L_s^H\right) - \left(1 - L_s^L\right)L_s^H\right)\varepsilon_{L,H}\gamma_{H,L} \\
=& L_s^L - \frac{Y_s^L}{Y^L} + \left(L_s^L - L_s^H\right)\varepsilon_{L,H}\gamma_{H,L} \\
=& \overbrace{L_s^L - \frac{Y_s^L}{Y^L}}^{\text{Redistributive Motive}} + \overbrace{\underbrace{\psi\gamma^A}_{<0,\text{LS Crowd out HS}}\underbrace{\left(\gamma^A + \gamma^P\right)}_{\text{Effect of HS on LS}}\underbrace{\left(1 - \frac{L_s^H}{L_s^L}\right)}_{>0,\text{Relative Scarcity of HS in South}}L_s^L}^{\Delta\mathcal{W}_{Alloc.}^L(\tau_{st}^L):=\text{Allocative Efficiency}}
\end{aligned}$$

When *i.* low skilled workers crowd out high skilled ones ($\varepsilon_{L,H} < 0$, because $\gamma^A < 0$), *ii.* the net effect of the high skilled workers is positive ($\gamma^A + \gamma^P$), *iii.* and the South is relatively abundant in low skilled workers $\left(\frac{L_s^H}{L_s^L} < 1\right)$, then a transfer to low skilled workers in the South can decrease low skilled workers' welfare because it concentrates high skilled workers in the North, whereas the planner would like to redistribute them in the South, where they are relatively scarce.[36]

Turning to a transfer to high skilled workers in the South, paid by a place blind tax on high skilled workers, the changes in utilities in the South and North are:

$$\frac{d\log u_{jt}^L}{d\log \tau_s^H} = \left(1 - L_s^L\right)\varepsilon_{HL}\gamma_{L,L} + \left(1 - L_s^H\right)\varepsilon_{HH}\gamma_{H,L}$$
$$\frac{d\log u_{kt}^L}{d\log \tau_s^H} = -L_s^L\varepsilon_{H,L}\gamma_{L,L} - L_s^H\varepsilon_{H,H}\gamma_{H,L}$$

[36]Note that, if the transfer was paid by all workers, then the redistributive motive would just be $L_s^L - Y_s^L/Y$. If the transfer was paid by only high skilled workers, it would be L_s^L

Welfare thus changes:

$$\begin{aligned}\frac{d\log \mathcal{W}^L}{d\log \tau_s^H} =& L_s^L \frac{d\log u_s^L}{d\log \tau_s^H} + L_n^L \frac{d\log u_n^L}{d\log \tau_s^H} \\ =& L_s^L \left(1 - L_s^L\right) \varepsilon_{HL}\gamma_{L,L} + L_s^L \left(1 - L_s^H\right) \varepsilon_{HH}\gamma_{H,L} \\ & - \left(1 - L_s^L\right) L_s^L \varepsilon_{H,L}\gamma_{L,L} - \left(1 - L_s^L\right) L_s^H \varepsilon_{H,H}\gamma_{H,L} \\ =& \overbrace{\psi \left(\sigma - \gamma^A\right) \left(\gamma^A + \gamma^P\right) \left(L_s^L - L_s^H\right)}^{\Delta \mathcal{W}^L_{Alloc.}(\tau_{st}^H) := \text{Allocative Efficiency}}\end{aligned}$$

The policy increases the welfare of the low skilled workers if $\gamma^A + \gamma^P > 0$, because it redistributes high skilled workers from where they are abundant to where they are scarce, and this benefits low skilled workers in the aggregate.

Allocative components The allocative components are hence:

$$\begin{aligned}\Delta \mathcal{W}^L_{Alloc.}(\tau_{st}^L) &= \psi \gamma^A \left(\gamma^A + \gamma^P\right) \left(L_s^L - L_s^H\right) \\ \Delta \mathcal{W}^L_{Alloc.}(\tau_{st}^H) &= \psi \left(\sigma - \gamma^A\right) \left(\gamma^A + \gamma^P\right) \left(L_s^L - L_s^H\right)\end{aligned}$$

Because $\gamma^A < 0$, $L_s^L - L_s^H > 0$ in the initial equilibrium, and $\psi > 0$ and $\sigma - \gamma^A > 0$ by the regularity conditions, one has:

$$\begin{aligned}\text{sign}\left(\Delta \mathcal{W}^L_{Alloc.}(\tau_{st}^L)\right) &= -\left(\gamma^A + \gamma^P\right) \\ \text{sign}\left(\Delta \mathcal{W}^L_{Alloc.}(\tau_{st}^H)\right) &= \gamma^A + \gamma^P\end{aligned}$$

The voting condition still follows condition (10) in Proposition 2. That is, the transfer to the high skilled in the South is politically feasible if and only if $\gamma^A + \gamma^P > \sigma \frac{Y_{s,0}^H}{Y_{s,0}^L + Y_{s,0}^H}$. Thus, letting $\bar{\gamma}(\sigma) = \sigma \frac{Y_{s,0}^H}{Y_{s,0}^L + Y_{s,0}^H}$, one reaches the result in Proposition 3. □

B Empirical Appendix

B.1 Additional Institutional Details

In PP 2007-13, the entirety of the EU regional policy was administered through five "European structural and investment funds". The funds, along with their description from the EC website, are the following. *i)* European Regional Development Fund (ERDF): "promotes balanced development in the different regions of the EU". *ii)* European Social Fund (ESF): "supports employment-related projects throughout Europe and invests in Europe's human capital – its workers, its young people and all those seeking a job". *iii)* Cohesion Fund (CF): "funds transport and environment projects in countries where the gross national income (GNI) per inhabitant is less than 90% of the EU average". *iv)* European Agricultural Fund for Rural Development (EAFRD): "focuses on resolving the particular challenges facing EU's rural areas". *v)* European Maritime and Fisheries Fund (EMFF or EFF): "helps fishermen to adopt sustainable fishing practices and coastal communities to diversify their economies, improving quality of life along European coasts". For the 2007-13 programming period the recipient countries of the Cohesion Fund were: Bulgaria, Cyprus, Czech Republic, Estonia, Spain (on a transitional basis), Greece, Hungary, Latvia, Lithuania, Malta, Poland, Portugal, Romania, Slovakia and Slovenia. The total budget for these funds was of €347B, 35.7 % of the total EU budget for that period.

My main dataset covers investments under the Cohesion Policy, which are made through the ERDF, ESF, and CF funds, and is missing investments made through the agricultural and maritime funds (EAFRD and EMFF).[37] Figure O.A.1 in the Online Appendix shows the total expenditure by fund. As the figure shows, among the €437B spent by the EU in its regional policy for the 2007-13 PP, €340B were spent through the ERDF, ESF, and CF fund (77.7%). More importantly, the funds not available in the dataset cover only investment that are within the realm of the EU agricultural policy. That is, my dataset covers the entirety of the EU regional policy investments in non-farm activities in PP 2007-13.

The dataset collected by the Commission as part of the ex-post evaluation of the effects of the Cohesion policy only covers the ERDF and CF.

TABLE B.1: SUMMARY OF DATA AVAILABILITY

Data	Amount (€B)	% of above	% of total
ERDF, ESF, and CF available in expenditure categorization data	368	–	–
– of which, at the regional level	283	76.9%	76.9%
– of which, excluding Cross-Border Cooperation programs and single-region states	265	94%	72.0%
– of which, with data available on jobs created	170	64.2%	46.2%
– of which, with data available on jobs created imputable to one region	86	50.5%	23.4%

Note: the table reports details on the available data for the analyses. The third line indicates the sample used for the analysis on types of expenditures across different regions and types of managing authorities (cf. Section 4.1). The last line indicates the sample used in the analysis on jobs created (cf. Section 4.2).

B.2 Details on Data

This Section reports further details on the data. Table B.1 reports details on data availability for the Cohesion Policy funds.

Conversion across NUTS2 Versions: Given various changes in borders and the renaming of regions, mapping across different versions of the NUTS categorization is difficult in practice. I use the NUTS converter designed by the Joint Research Center of the EC within the Urban Data Platform. The converter is based on a set of precalculated look-up matrices that establish relationships between regions of different NUTS versions by computing the extent of the geographical intersection between them.

Educational Brackets: The educational brackets available follow the ISCED classification and distinguish across: levels 0-2 (less than primary, primary and lower secondary education), levels 3-4 (upper secondary and post-secondary non-tertiary education), and levels 5-8 (tertiary education). In line with the literature, I define as high skilled all individuals with tertiary education and as low skilled all others.

B.3 Specification for Figure 1

Figure 1 shows the residual binned scatter plots from regressions of the fraction of funds invested in innovation at the NUTS2 level on the fraction of low skilled individuals, coming from the

[37]Note that the online description by the Commission of the dataset states that only payments made through the ERDF and CF funds are available. By analyzing the identifying codes of the programs (CCIs) however one can note that the dataset contains also payments made through the ESF fund.

following specification:

$$Y_{mj} = \alpha_m + \beta_m \text{LS}_j + \tau_m \mathbf{R}_j + \varepsilon_{mj} \tag{20}$$

where Y_{mj} indicates the fraction of funds invested in innovation in region j by managing authorities of type m, over all funds invested in region j by managing authorities of type m. The remaining elements are as in specification (12) of Table 1. That is, LS_j is the main regressor of interest, namely the fraction of low skilled workers in region j in 2007 (the first year in which funds have been disbursed). $\mathbf{R}_j$ is a set of NUTS2-level controls that flexibly control for local economic characteristic: country fixed effects, region objective fixed effects, and third-degree polynomials of the fractions of employment in the six different sectoral aggregates (see Fn. 27 for the description of the sectors), of log GDP per capita, and of log population. Standard errors, reported in the bottom-right corner of Figure 1 are robust to heteroskedasticity. In Panel A, the sample for the regression is composed only of funds invested through programs where the local government was amongst the managing authorities. Panel B instead considers only funds invested through regional programs managed by centrally-appointed authorities.

To illustrate the robustness of the relationships in Figure 1 across different choices of controls, Panel A in Figure B.1 plots the raw data, correlating the fraction of funds invested in TD&I in each region during my programming period, against the fraction of low skilled workers in 2007. Panel B plots the residualized data from regression (20), but only controlling linearly for initial GDP p.c. in 2007. Panels A.1 and B.1 plot the data for funds invested through programs where the local government was amongst the managing authorities. Panels A.2 and B.2 consider only funds invested through regional programs managed by centrally-appointed authorities. Panels A.3 and B.3 consider funds invested through national programs.[38]

[38]The equivalent of Panels A.3 and B.3 for Figure 1 in the Introduction, which plots the residuals from Equation (20) for national programs using all the controls, is not shown in the Introduction since the most important comparison is across local programs, only changing whether the authority in charge is voted locally or by the national government. Regression (20) for national programs also shows a flat relationship that is statistically indistinguishable from zero, with a $\beta = -.21$ and a standard error of .28.

FIGURE B.1: REGIONAL INVESTMENT IN TECHNOLOGICAL DEVELOPMENT AND INNOVATION VS. FRACTION OF LOW SKILLED INDIVIDUALS, BY TYPE OF PROGRAM AND MANAGING AUTHORITY (MA)

(A) RAW DATA

(A.1) REGIONAL PROGRAM, LOCAL GOVERNMENT

(A.2) REGIONAL PROGAM, NATIONALLY APPOINTED MA

(A.3) NATIONAL PROGRAM

(B) CONTROLLING FOR LOG(REGIONAL GDP P.C. IN 2007)

(B.1) REGIONAL PROGRAM, LOCAL GOVERNMENT

(B.2) REGIONAL PROGAM, NATIONALLY APPOINTED MA

(B.3) NATIONAL PROGRAM

Note: the figure reports the fraction of funds invested in technological development for firms, innovation, and research at the NUTS2 level in 2007–14 (on the y-axes) against the fraction of low skilled individuals at the NUTS2 level in 2007 (on the x-axes), across 236 EU regions. Panels (A.1) to (A.3) report the raw data. Panels (B.1) to (B.3) report the data residualized by the log of regional GDP p.c. in 2007. Panels (A.1) and (B.1) consider regional programs managed by local governments, Panels (A.2) and (B.2) consider regional programs managed by local authorities who are appointed by the central government, Panels (A.3) and (B.3) consider national program managed by the central government. Each circle represents a NUTS2 region, while solid points report binned means. The size of the circle is proportional to log GDP in 2007 at the NUTS2 level. Standard errors are robust to heteroskedasticity.

B.4 Case Study on Italy

I show here additional evidence for Italy that ties the model and the empirics more closely by focusing on a different dependent variable: the probability that funds go to firms that are more likely to employ high skilled workers.

In particular, I use data from the OpenCoesione project, a payment level database of all funds disbursed in Italy through the EU Cohesion Policy after 2007, which reports the beneficiary of each payment along with the 4-digit sector where it operates (if the beneficiary it is a firm). I focus again on the 2007-2013 tranche and study the probability that funds were invested in knowledge-intensive subsectors, defined by Eurostat as 2-digit sectors that occupy a high share of college-educated workers.[39]

While the data is available at a granular level, focusing on Italy means that my main variable of interest—the fraction of low skilled workers in each region—varies only across 20 regions. Additionally, unfortunately, national managing authorities manage a non-trivial fraction of funds only in 5 regions—thus effectively allowing me to compare national and regional authorities only for a very small subset of regions.[40] This impedes a formal statistical analysis, but only showing the raw data is instructive. In particular, Figure B.2 reports the fraction of funds invested in knowledge intensive-sectors vs. the fraction of low skilled workers, separately for programs managed by local governments (in panel A) and those managed by the national governments (in panel B). Univariate regression estimates are reported at the bottom of the Figure, along with heteroskedasticity-robust standard errors. This shows that local governments invest less, on average, on knowledge-intensive sectors, compared to the national government, but especially so in regions with many low skilled workers.

In addition to plotting the raw data, I can investigate patterns at the payment-level, under the caveat that my key variation occurs across very few data points. In particular, I run a specification identical to (12), up to four main differences. First, Y_{ij} is now a dummy indicating whether the investment is in a knowledge-intensive sector. Second, there are only two types of programs: national programs managed by the national government and regional ones managed by regional governments. Third, I cluster standard errors at the program level (42 operational programs), since there are only 20 regions. Finally, I can employ payment-level controls that are more granular,

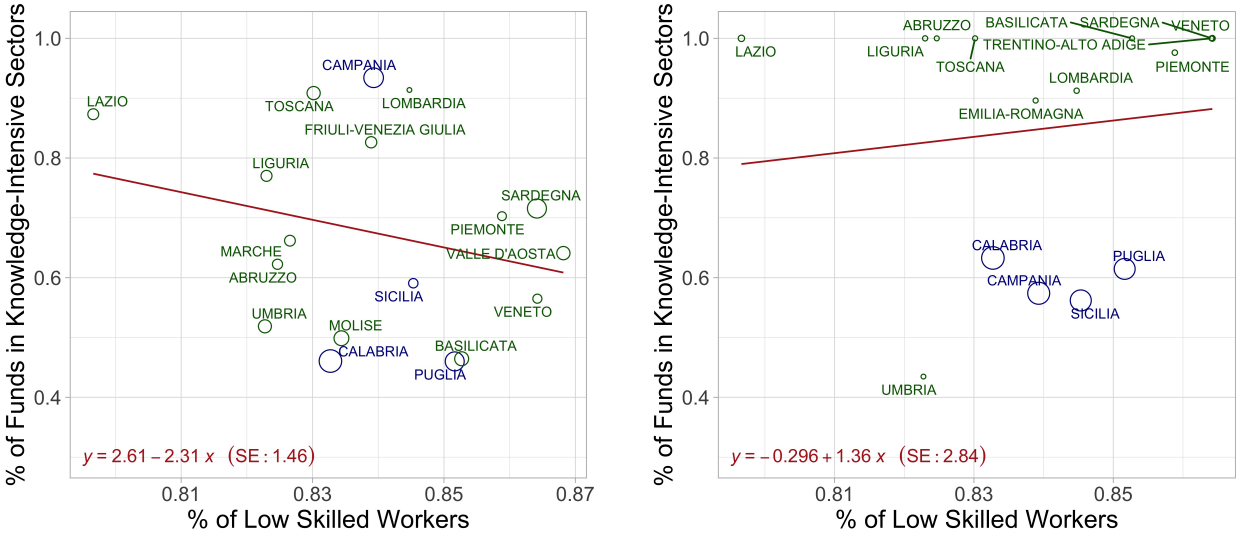
[39] An activity is classified as knowledge intensive if tertiary educated persons employed are more than one third of the total employees in that activity. The definition is built based on the average number of employed persons aged 15-64 at aggregated EU-27 level in 2008 and 2009 according to the NACE Rev. 2 at 2-digit, using the EU Labour Force Survey data.

[40] These are Lazio, Campania, Puglia, Calabria, and Sicilia. There, the national government manages around 40% of the funds in the last four, and 11.6% in Lazio. For all other regions, the national government manages less than 4% of funds. An exception is Trentino-Alto Adige and Emilia Romagna, for which data on regionally managed funds is almost always missing and I mostly have data from nationally managed funds.

FIGURE B.2: REGIONAL INVESTMENT IN TECHNOLOGICAL DEVELOPMENT AND INNOVATION VS. FRACTION OF LOW SKILLED INDIVIDUALS, BY TYPE OF PROGRAM

(A) PROGRAMS MANAGED BY LOCAL GOVERNMENTS

(B) PROGRAMS MANAGED BY THE CENTRAL GOVERNMENT



Note: the figures report the fraction of funds invested in knowledge intensive sectors at the regional level (on the y-axes) against the fraction of low skilled individuals at the regional level (on the x-axes), across all Italian regions. Each circle represents a NUTS2 region and the size of the circle is proportional to the amount invested per capita at the NUTS2 level. Blue circles represent Objective 1 regions, while green circles all other regions. Standard errors, reported in parentheses, are robust to heteroskedasticity.

and I control for fixed effects on whether the payment was made towards the purchase of goods, purchase of services, subsidies to productive activities, subsidies to other types of individuals or firms, realization of public works, or equity infusions in firms.

Table B.2 reports the results of the analysis, which suggests that local governments seem to favor low-knowledge intensive firms in regions with many low skilled workers, while the national government does not. However, the nature of the data makes it hard to quantify uncertainty around the estimates, which are noisy except when employing regional and sectoral fixed effects.

TABLE B.2: INVESTED IN KNOWLEDGE INTENSIVE SECTORS AND FRACTION OF LOW SKILLED WORKERS, DATA FOR ITALY

	Dependent variable:						
	Investment in Knowledge Intensive Sector (Dummy)						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Fraction Low Skilled	−0.975	1.082	7.379	4.050	0.642		
	(1.719)	(1.901)	(4.871)	(3.456)	(0.518)		
Managed by Local Government			5.649	2.510	−0.307	4.773	2.233***
			(4.562)	(3.084)	(0.477)	(4.136)	(0.728)
Low Skilled × Local Government			−6.868	−3.120	0.361	−5.636	−2.711***
			(5.397)	(3.675)	(0.567)	(4.924)	(0.883)
Regional Controls		✓	✓	✓	✓		
Project Type FE				✓	✓	✓	✓
1-Digit Sect. FE					✓		✓
Region FE						✓	✓
$\mathbb{E}(Y)$	0.84	0.84	0.84	0.84	0.84	0.84	0.84
$\mathbb{E}$(frac. Low Skill)	0.4	0.4	0.4	0.4	0.4	0.4	0.4
# of Clusters (Programs)	42	42	42	42	42	42	42
Observations	20,089	20,089	20,089	20,089	20,089	20,085	20,085
R^2	0.001	0.086	0.099	0.197	0.857	0.210	0.852

Note: the table reports results from a WLS regression of a dummy indicating whether a payment i to region j was targeted towards knowledge-intensive subsectors, allowing for heterogeneous effects across types of authorities managing the funds, and controlling for various covariates at the payment level and at the region level. Regional controls are constructed and included following the discussion in Section 4.1. Project type fixed effects are defined in Section B.4. Each observation is weighted by the ratio between the amount invested in region j through payment i over the total amount invested in region j. Parentheses report clustered standard errors at the operational program level.

B.5 Robustness for Section 4.2

TABLE B.3: JOBS CREATED AND FRACTION OF LOW SKILLED WORKERS, ALL PROGRAMS

	Dependent variable:						
	log(jobs created per €1mil.)						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Fraction Low Skilled Workers	−5.452***	14.853***	10.303***	10.656***	7.143	8.274	10.867**
	(1.183)	(3.512)	(3.546)	(3.666)	(4.941)	(5.237)	(5.307)
Regional Program		16.409***	9.102***	9.123***	7.281*	7.813*	10.328**
		(3.163)	(3.318)	(3.400)	(4.316)	(4.426)	(4.525)
Reg. Prog. × Managed by Local Govt.		2.671	4.332**	4.123**	3.856**	3.679**	3.727**
		(1.838)	(1.820)	(1.814)	(1.843)	(1.680)	(1.753)
Low Sk. × Reg. Prog.		−18.763***	−10.457**	−10.527**	−8.151	−9.052*	−12.144**
		(4.006)	(4.129)	(4.215)	(5.217)	(5.350)	(5.487)
Low Sk. × Reg. Prog. × Local Govt.		−3.241	−5.555**	−5.312**	−5.211**	−4.957**	−4.916**
		(2.406)	(2.387)	(2.379)	(2.363)	(2.176)	(2.306)
Objective FE			✓	✓	✓	✓	✓
Regional Initial GDP and Pop.				✓	✓	✓	✓
Regional Initial Sectoral Comp.					✓	✓	✓
Program-Level Controls						✓	✓
Sectors Targeted by Program							✓
𝔼(Y)	1.93	1.93	1.93	1.93	1.93	1.93	1.93
𝔼(frac. Low Skill)	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Observations	187	187	187	187	187	187	187
R^2	0.103	0.219	0.331	0.339	0.449	0.539	0.569

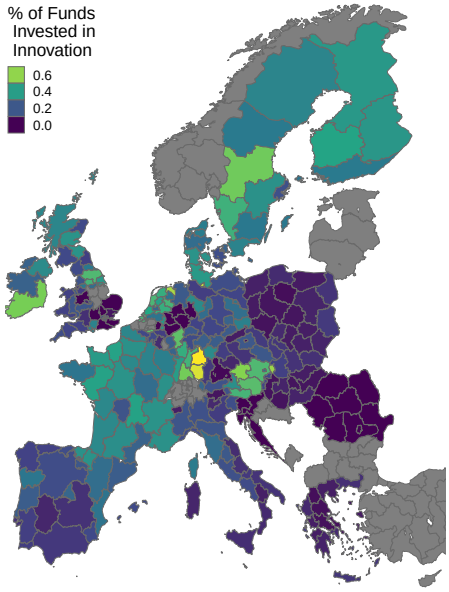
Note: The table reports OLS results from a regression of log(jobs created per €) by an investment program against the fraction of low skilled workers in the regions targeted by the program, allowing for heterogeneous effects across types of authorities managing the program. Regional controls are constructed and included following the discussion in Section B.5. For programs active across multiple regions, regional variables are aggregated at the program level by taking the weighted average across regions targeted by a given program, weighting each region according to the share of investment made in that region by a given program, over all investments made by that program. Parentheses report heteroskedasticity-robust standard errors.

Table B.3 reports results from the analysis on jobs created by each investment program, presented in Table 2 in Section 4.2, when extending the sample to multi-region programs. Because I do not observe where are jobs created, the analysis is still at the program level and follows specification (13). To construct region-level variables for each program p that is active in multiple regions, I apportion each region level variable to each program by averaging that given variable across all regions targeted, weighting each region by the share of funds invested by the program in that region. For instance, the share of low skilled workers for a program p that is active in multiple regions is given by the weighted average across regions of the regional share of low skilled workers, weighting each region by the share of funds that program p invested in that region over the total funds invested by program p. Results are very similar to Table 2.

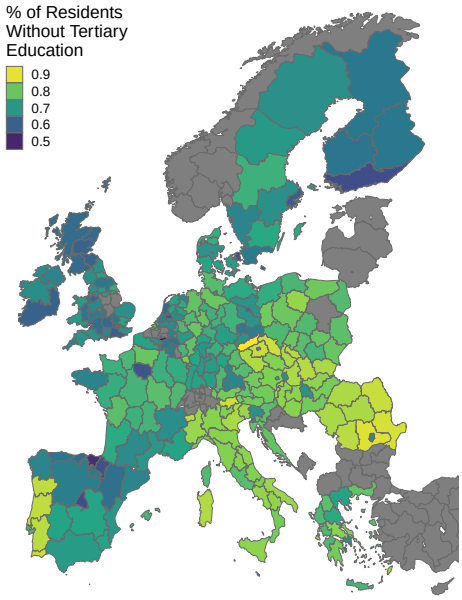
B.6 Extra Figures

FIGURE B.3: INVESTMENT IN TECH. DEV. & INNOV. AND % OF LOW SKILLED WORKERS

(A) % FUNDS INVESTED IN TD&I



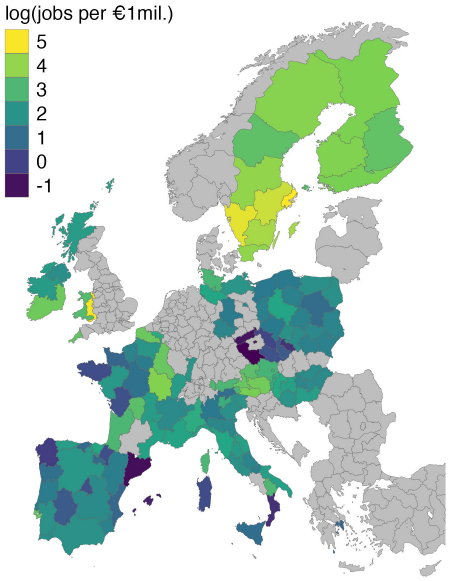
(B) % RESIDENTS W.O. TERTIARY ED.



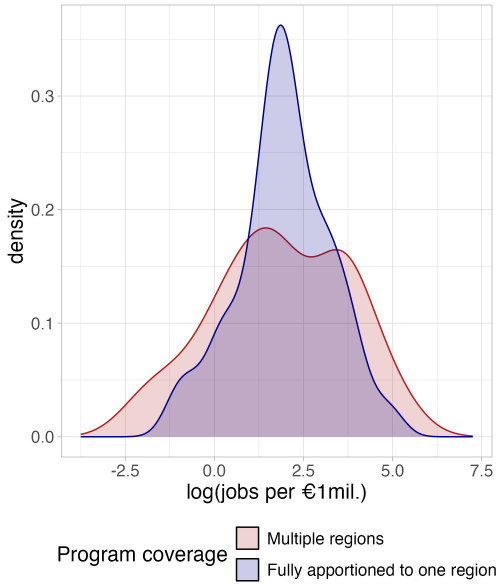
Note: Panel (A) reports the fraction of funds invested in technological development and innovation in each region. during 2007–13, as a share of total funds invested. Panel (B) reports the fraction of residents aged 25-64 without a tertiary education in 2007.

FIGURE B.4: JOBS CREATED PER €MILLION INVESTED

(A) MAP, REGION-SPECIFIC PROGRAMS



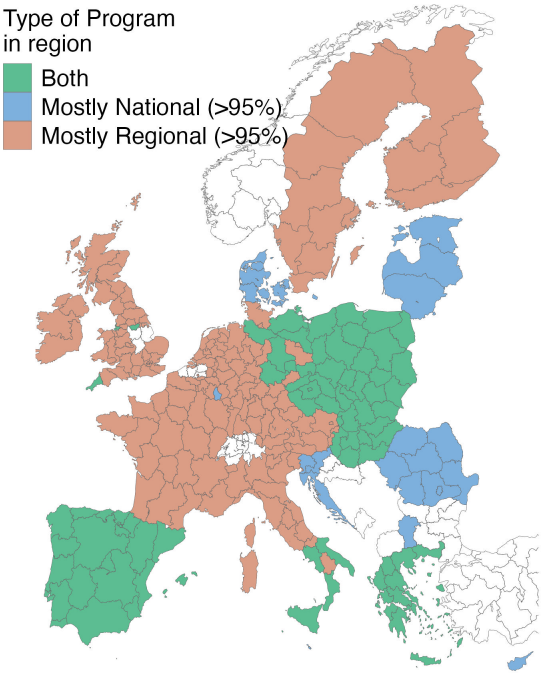
(B) DENSITY PLOT, ALL PROGRAMS



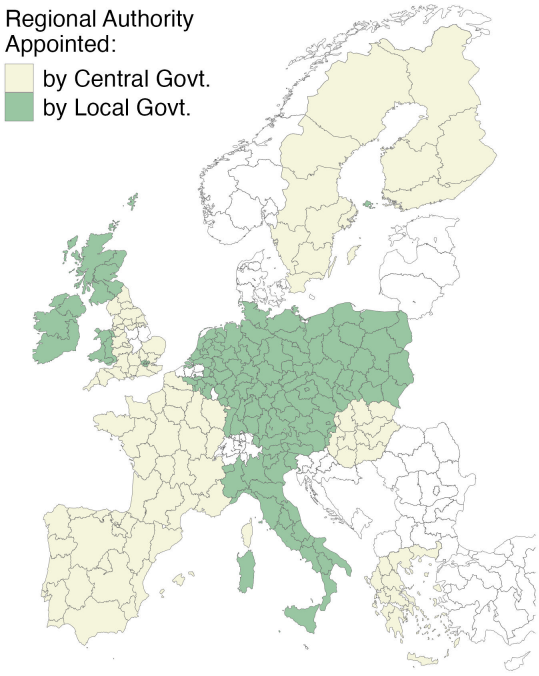
Note: the Figure plots the distribution of the log of jobs created per €million invested by each program, as reported by the European Commission. Panel (A) plots the map for programs that can be apportioned uniquely to one region. Panel (B) plots the distribution across all programs, distinguishing between those covering multiple regions (in red) and those apportioned to only one region (in blue).

FIGURE B.4: PROGRAM TYPES AND MANAGING AUTHORITIES

(A) TYPES OF PROGRAMS

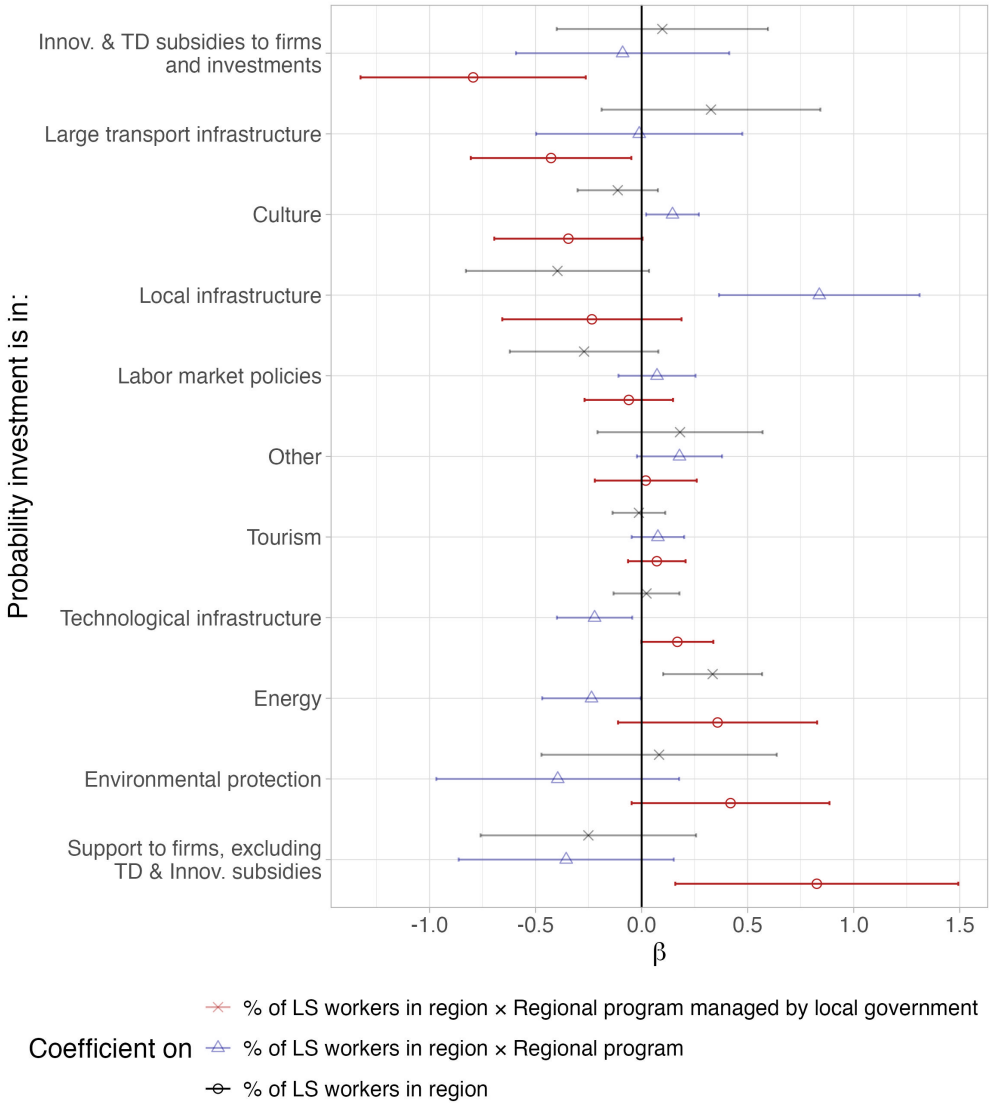


(B) TYPES OF REGIONAL MANAGING AUTHORITIES



Note: the figure reports information on the types of programs and authorities active in each region. Panel (A) colors regions based on whether the regional transfers were administered through regional, national programs, or both. Regions in blue receive more than 95% of their funding through national investment programmes. Regions in orange receive more than 95% of their funding through region-specific investment programmes. Regions in green receive funding from both types of programs. Panel (B) shows, for regions which receive investments through regional programs, whether regional authorities are appointed by local governments or by the national government.

FIGURE B.5: REGRESSION COEFFICIENTS OF PROBABILITY OF INVESTING IN y VS. THE FRACTION OF LOW SKILLED WORKERS, BY MANAGING AUTHORITY



Note: the figure reports β, β_R, and β_{RR} (on the $x-$axis) from regression (12) using different investment categories as dependent variables (on the $y-$axis). That is, for each category on the $y-$axis, it reports the coefficient of the probability that fund i in region j is invested in category y on the fraction of low skilled workers in region j, interacted with the type of program and managing authority of each fund i. The uninteracted coefficients (β) are in gray, the interacted coefficients with a dummy for whether the fund comes from a regional program (β_R) are in blue, while the interactions with a dummy for whether the fund comes from a regional program that is managed by local governments (β_{RR}) are in red. The specification is the one employed in Column (5) of Table 1, which controls for country fixed effects, payment controls as defined in Section 4 and third-degree polynomials in regional characteristics as defined in the same Section. Each observation is weighed by the ratio between the amount invested in region j through payment i over the total amount invested in region j. Horizontal bars report 95% confidence intervals, with clustered standard errors at the NUTS2 level.

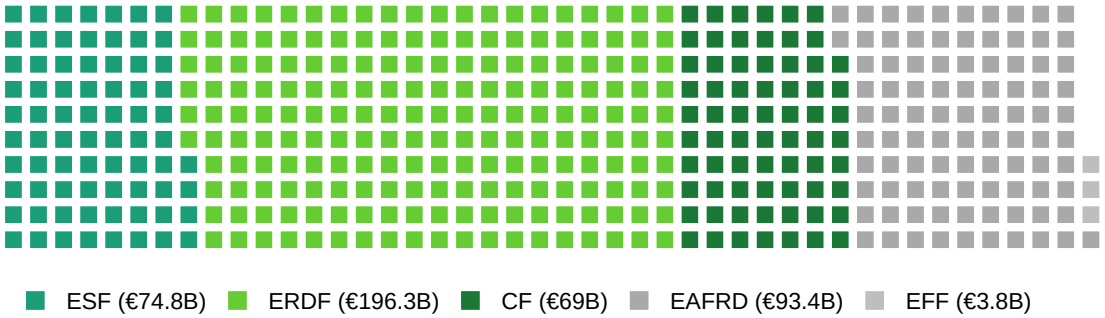
Online Appendix for "Place Based Policies with Local Voting. Lessons From the EU Cohesion Policy"

Leonardo D'Amico

December 2025

Figures

FIGURE O.A.1: AMOUNT INVESTED IN THE EU REGIONAL POLICY BETWEEN 2007 AND 2014, BY FUND

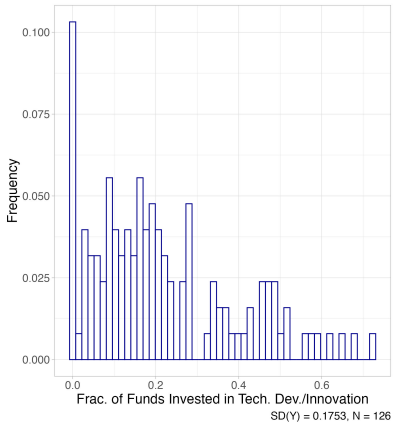


Note: Each box represents €1B invested. Funds in green are those available in the dataset .

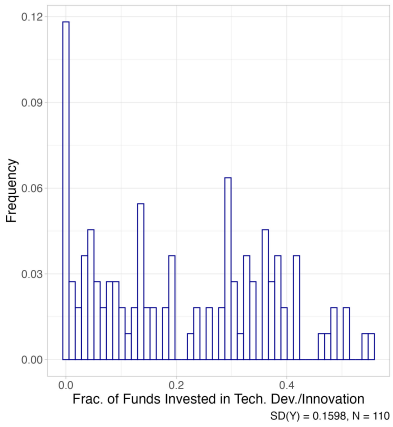
FIGURE O.A.2: DISTRIBUTION ACROSS REGIONS OF THE FRACTION OF FUNDS INVESTED IN TECHNOLOGICAL DEVELOPMENT FOR FIRMS, INNOVATION, AND RESEARCH; BY TYPE OF MANAGING AUTHORITY (MA)

(A) RAW DATA

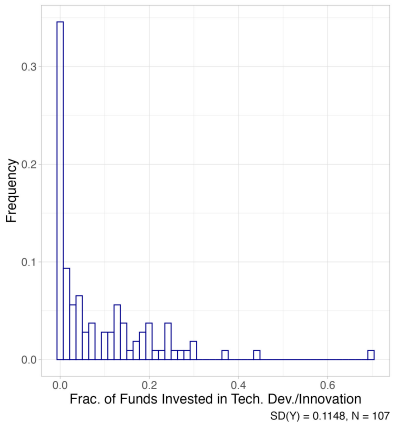
(A.1) REGIONAL PROGRAM, LOCAL GOVERNMENT



(A.2) REGIONAL PROGAM, NATIONALLY APPOINTED MA

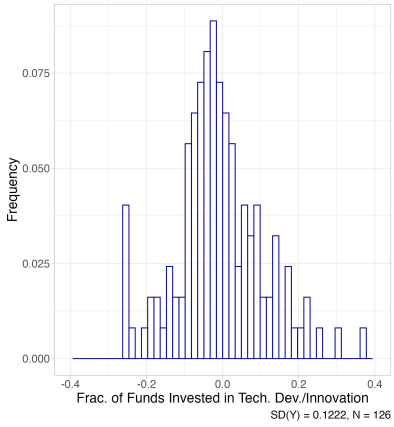


(A.3) NATIONAL PROGRAM

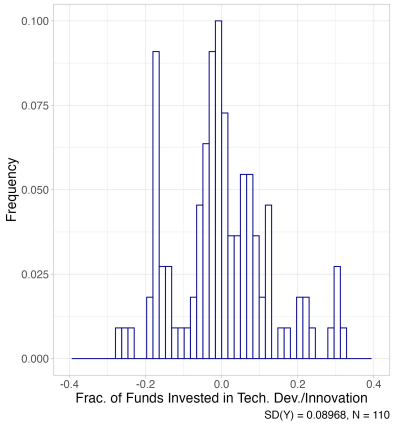


(B) DEMEANED BY COUNTRY

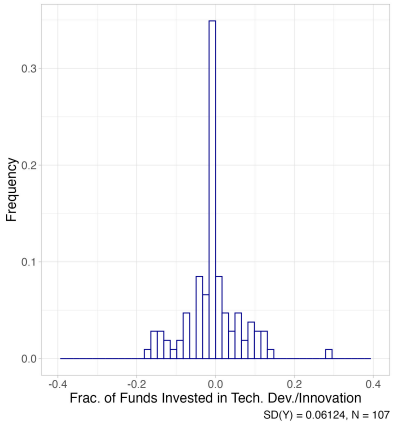
(B.1) REGIONAL PROGRAM, LOCAL GOVERNMENT



(B.2) REGIONAL PROGAM, NATIONALLY APPOINTED MA



(B.3) NATIONAL PROGRAM



Note: the figure reports the distribution, across regions, of the fraction of funds invested in technological development for firms, innovation, and research at the NUTS2 level in 2007–14. Panels (A.1) to (A.3) report the raw data. Panels (B.1) to (B.3) report the data demeaned by country. The sample in the Panels (A.1) and (B.1) is composed only by funds invested through regional programs managed by the local government. Panels (A.2) and (B.2) consider regional programs managed by local authorities who are appointed by the central government, Panels (A.3) and (B.3) consider national program managed by the central government. The respective standard deviations are annotated below each Panel.

Tables

TABLE O.A.1: OPERATIONAL PROGRAMS, BY COUNTRY AND TYPE

Country	Type	# of programs	Investment (Million €)	Country	Type	# of programs	Investment (Million €)
Austria	Regional Programs	10	690	Italy	National Programs	8	5851
	– man. by local govt.	10	690		Regional Programs	42	22681
Belgium	Regional Programs	6	944		– man. by local govt.	42	22681
	– man. by local govt.	6	944	Latvia	National Programs	3	4864
Bulgaria	National Programs	1	449	Lithuania	National Programs	4	6680
Croatia	National Programs	1	244	Luxembourg	National Programs	2	63
Cyprus	National Programs	2	612	Malta	National Programs	2	855
Czech Republic	National Programs	8	25780	Netherlands	Regional Programs	4	801
	Regional Programs	9	4869		– man. by local govt.	4	801
	– man. by local govt.	9	4869	Poland	National Programs	2	30618
Denmark	National Programs	2	442		Regional Programs	16	16592
Estonia	National Programs	3	3393		– man. by local govt.	16	16592
Finland	Regional Programs	6	1017	Portugal	National Programs	3	12828
	– man. by local govt.	2	7		Regional Programs	9	7357
France	Regional Programs	30	8540		– man. by local govt.	4	1618
	– man. by local govt.	1	74	Romania	National Programs	2	10268
Germany	National Programs	1	1511	Slovakia	National Programs	7	4452
	Regional Programs	27	17341		Regional Programs	2	1474
	– man. by local govt.	27	17341	Slovenia	National Programs	1	1426
Greece	National Programs	9	13862	Spain	National Programs	7	13323
	Regional Programs	5	8652		Regional Programs	38	23426
Hungary	National Programs	7	16179	Sweden	Regional Programs	8	883
	Regional Programs	7	5410	U.K.	National Programs	1	663
Ireland	Regional Programs	2	385		Regional Programs	19	6328
	– man. by local govt.	2	385		– man. by local govt.	11	3825

Note: the table reports the number of programs and millions of euros invested in each member state, distinguishing between regional and national programs and, for regional programs, noting how much of those funds where managed by the local government.

TABLE O.A.2: EXPENDITURE BY PRIORITY CODE

Priority Code	Categorization	EU Investment (Million €)	% of tot.
R&TD activities in research centres	TD&I subsidies to firms and TD&I investments	5918.42	1.64
R&TD infrastructure and centres of competence in a specific technology	TD&I subsidies to firms and TD&I investments	11142.78	3.09
Technology transfer and improvement of cooperation networks ...	TD&I subsidies to firms and TD&I investments	3739.33	1.04
Assistance to R&TD, particularly in SMEs (including access to R&TD services in research centres)	TD&I subsidies to firms and TD&I investments	5965.96	1.66
Advanced support services for firms and groups of firms	Support to firms, excluding TD&I subsidies	4820.88	1.34
Assistance to SMEs for the promotion of environmentally-friendly products and production processes (...)	Support to firms, excluding TD&I subsidies	2000.81	0.56
Investment in firms directly linked to research and innovation (...)	TD&I subsidies to firms and TD&I investments	9851.82	2.74
Other investment in firms	Support to firms, excluding TD&I subsidies	17857.97	4.96
Other measures to stimulate research and innovation and entrepreneurship in SMEs	TD&I subsidies to firms and TD&I investments	7691.17	2.14
Telephone infrastructures (including broadband networks)	Technological infrastructure	2080.48	0.58
Information and communication technologies (...)	Technological infrastructure	3029.03	0.84
Information and communication technologies (TEN-ICT)	Technological infrastructure	269.22	0.07
Services and applications for citizens (e-health, e-government, e-learning, e-inclusion, etc.)	Technological infrastructure	5692.43	1.58
Services and applications for SMEs (e-commerce, education and training, networking, etc.)	Support to firms, excluding TD&I subsidies	1644.24	0.46
Other measures for improving access to and efficient use of ICT by SMEs	Support to firms, excluding TD&I subsidies	1225.07	0.34
Railways	Large transport infrastruct.	5119.44	1.42
Railways (TEN-T)	Large transport infrastruct.	16313.10	4.53
Mobile rail assets	Large transport infrastruct.	1227.49	0.34
Mobile rail assets (TEN-T)	Large transport infrastruct.	440.90	0.12
Motorways	Large transport infrastruct.	4593.82	1.28
Motorways (TEN-T)	Large transport infrastruct.	21283.13	5.91
National roads	Large transport infrastruct.	7557.55	2.10

Regional/local roads	Local infrastructure	12701.38	3.53
Cycle tracks	Local infrastructure	470.76	0.13
Urban transport	Local infrastructure	2395.40	0.67
Multimodal transport	Large transport infrastruct.	1820.70	0.51
Multimodal transport (TEN-T)	Large transport infrastruct.	184.93	0.05
Intelligent transport systems	Large transport infrastruct.	548.39	0.15
Airports	Large transport infrastruct.	1658.17	0.46
Ports	Large transport infrastruct.	3143.19	0.87
Inland waterways (regional and local)	Large transport infrastruct.	147.78	0.04
Inland waterways (TEN-T)	Large transport infrastruct.	226.37	0.06
Electricity	Energy	187.99	0.05
Electricity (TEN-E)	Energy	257.84	0.07
Natural gas	Energy	458.71	0.13
Natural gas (TEN-E)	Energy	384.20	0.11
Petroleum products	Energy	0.18	0.00
Renewable energy: wind	Energy	624.67	0.17
Renewable energy: solar	Energy	1007.51	0.28
Renewable energy: biomass	Energy	812.46	0.23
Renewable energy: hydroelectric, geothermal and other	Energy	510.45	0.14
Energy efficiency, co-generation, energy management	Energy	7116.74	1.98
Management of household and industrial waste	Environmental protection	5293.83	1.47
Management and distribution of water (drink water)	Environmental protection	7016.46	1.95
Water treatment (waste water)	Environmental protection	17268.15	4.79
Air quality	Environmental protection	1419.07	0.39
Integrated prevention and pollution control	Environmental protection	239.31	0.07
Mitigation and adaption to climate change	Environmental protection	141.05	0.04
Rehabilitation of industrial sites and contaminated land	Environmental protection	2108.23	0.59
Promotion of biodiversity and nature protection (including Natura 2000)	Environmental protection	2362.92	0.66
Promotion of clean urban transport	Environmental protection	6129.06	1.70
Risk prevention (...)	Environmental protection	6415.12	1.78
Other measures to preserve the environment and prevent risks	Environmental protection	1247.51	0.35
Promotion of natural assets	Tourism	765.04	0.21
Protection and development of natural heritage	Tourism	607.51	0.17
Other assistance to improve tourist services	Tourism	4386.70	1.22
Protection and preservation of the cultural heritage	Culture	3795.72	1.05
Development of cultural infrastructure	Culture	2095.73	0.58

Other assistance to improve cultural services	Culture	228.51	0.06
Integrated projects for urban and rural regeneration	Local infrastructure	10249.07	2.85
Development of life-long learning systems and strategies in firms; training and services for employees ...	Support to firms, excluding TD&I subsidies	7941.46	2.21
Design and dissemination of innovative and more productive ways of organising work	Labor market policies	1088.81	0.30
Development of special services for employment, training and support in connection with restructuring of sectors ...	Labor market policies	2358.80	0.65
Modernisation and strengthening labour market institutions	Labor market policies	1577.42	0.44
Implementing active and preventive measures on the labour market	Labor market policies	19064.21	5.29
Measures encouraging active ageing and prolonging working lives	Labor market policies	480.42	0.13
Support for self-employment and business start-up	Support to firms, excluding TD&I subsidies	2772.76	0.77
Measures to improve access to employment and increase sustainable participation and progress of women ...	Labor market policies	3145.32	0.87
Specific action to increase migrants' participation in employment ...	Labor market policies	762.23	0.21
Pathways to integration and re-entry into employment for disadvantaged people ...	Labor market policies	11729.96	3.26
Design, introduction and implementing of reforms in education and training systems ...	Labor market policies	9457.09	2.63
Measures to increase participation in education and training throughut the life-cycle ...	Labor market policies	14329.86	3.98
Developing human potential in the field of research and innovation, in particular through post-graduate studies ...	Labor market policies	4046.01	1.12
Education infrastructure	Local infrastructure	9825.33	2.73
Health infrastructure	Local infrastructure	5783.47	1.61
Childcare infrastructure	Local infrastructure	612.21	0.17
Housing infrastructure	Local infrastructure	629.74	0.17
Other social infrastructure	Local infrastructure	2814.16	0.78
Promoting the partnerships, pacts and initiatives through the networking of relevant stakeholders	Other	648.48	0.18
Mechanisms for improving good policy and programme design, monitoring and evaluation ...	Other	3823.04	1.06

Compensation of any additional costs due to accessibility deficit and territorial fragmentation	Other	535.30	0.15
Specific action addressed to compensate additional costs due to size market factors	Other	45.89	0.01
Support to compensate additional costs due to climate conditions and relief difficulties	Other	37.35	0.01
Preparation, implementation, monitoring and inspection	Other	8898.73	2.47
Evaluation and studies; information and communication	Other	1837.48	0.51

Note: the table reports investment across each priority code through which the European Commission categorized investments, along with my grouping of priority codes (cf. Section 3).

TABLE O.A.3: EXPENDITURE BY TARGETED SECTOR

Targeted Sector	EU Investment (Million €)	% of tot.
Agriculture, hunting and forestry	767.83	0.21
Fishing	148.71	0.04
Manufacture of food products and beverages	1653.04	0.46
Manufacture of textiles and textile products	564.20	0.16
Manufacture of transport equipment	1515.69	0.42
Unspecified manufacturing industries	17612.76	4.89
Mining and quarrying of energy producing materials	78.00	0.02
Electricity, gas, steam and hot water supply	4472.33	1.24
Collection, purification and distribution of water	13015.56	3.61
Post and telecommunications	2171.71	0.60
Transport	73364.25	20.37
Construction	15725.43	4.37
Wholesale and retail trade	2053.03	0.57
Hotels and restaurants	3151.50	0.88
Financial intermediation	5581.38	1.55
Real estate, renting and business activities	6786.51	1.88
Public administration	36304.67	10.08
Education	31065.41	8.63
Human health activities	8301.55	2.31
Social work, community, social and personal services	8634.17	2.40
Activities linked to the environment	27504.10	7.64
Other unspecified services	34131.77	9.48
Not applicable	65533.80	18.20

Note: the table reports investment by targeted sector.