Giuseppe Albanese, Bank of Italy
Guglielmo Barone, University of Padua
Guido de Blasio, Bank of Italy

POPULIST VOTING AND LOSERS' DISCONTENT: DOES REDISTRIBUTION MATTER?

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Populist Voting and Losers' Discontent: Does Redistribution Matter?

Giuseppe Albanese, Guglielmo Barone, Guido de Blasio[*]

Abstract. Economic roots of populism in Western countries are quite well understood but much less is known about policy implications. We study a large redistribution program that conveyed, within the EU cohesion framework, a relevant amount of money to some Italian municipalities. Our identification strategy is based on a spatial regression discontinuity design, which exploits the allocation rule of funds. We focus on the 2013 general elections and show that municipalities favored by redistribution exhibit a drop in populism of about 5% of the mean of the dependent variable.

Keyword: populism, voting, redistribution.
JEL Classification: D72, R58.

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1. Introduction

Voters' discontent and their preference for populist parties are on the rise in many Western societies, creating a growing concern about the effects on the quality of liberal democracy and on the economy. As to the latter, for example, the resulting potential increase in the uncertainty about political choices and economic policies can lower corporate investments and employment (Julio and Yook, 2012; Baker et al., 2016). Looking for populism's causes, a very recent but well established literature points to explanations related to economic factors. Following Autor et al. (2016), some scholars look at the increased import competition from China (Colantone and Stanig, 2019) or, more generally, at globalization (Rodrik, 2017). Algan et al. (2017) find a link between the rise in unemployment and the vote for populist parties across European regions during the Great Recession. Guiso et al. (2017) account for perceived individual economic insecurity and show that this is the main driver of self-reported preference for populism in Europe while Guiso et al. (2019) argue that the Euro area rules, without a full fiscal and political Union, has an effect on frustration of citizens, which, in turn, pushed voters to support populist parties.[1] Guriev (2018) points to unemployment, stagnating incomes, and personal as well as regional inequalities as economic roots of populism. Overall, the economic underpinning of why populism has gained support is well supported. The main policy implication of this literature is that medium/long term social sustainability calls for appropriate redistributive policies aimed at compensating the losers. Nevertheless, nearly nothing is known the effectiveness of such policies in reducing populism.

This paper tries to fill this gap by analyzing the link between a large spatial redistributive policy and populist voting. Namely, we focus on Italy, one of the frontline countries facing the current populist backlash, and exploit the EU regional policy to study whether it shaped results in the 2013 general elections. This policy is aimed at improving economic conditions in European regions that are lagging, defined as those whose GDP per capita in purchasing power parity terms is less than 75% of the EU average. We leverage this allocation rule by using a spatial regression discontinuity design (RDD) to establish causality between funds and populism. More in details, we compare municipalities that are

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[1] Dal Bò et al (2018) show that increased labor market insecurity led to the rise of the far-right Sweden Democrats.

very similar in terms of many socio-economic characteristics and yet are very differently exposed to the EU funding, owing to their locations on the two opposite sides of the border that discriminates between the two regimes. Populism is measured by attaching to each political party Inglehart and Norris's (2018) populism scores and then mapping them into municipalities by using voting shares. Exposure to regional redistribution is measured either as a binary treatment or as per capita disbursement averaged over the five-year period that preceded 2013 elections; in the latter case, the key independent variable is instrumented with the binary treatment.

First, we show that the policy under scrutiny conveys a relevant amount of money in the treated areas: 125 euros per capita in the preferred specification, about 0.7% of the recipients' average GDP per capita. Second, the identification approach ensures that competing explanations for the observed differences in populist voting are differentiated away: for instance, the areas we compare are very similar, not only in terms of geography, demography and the structure of the local economy, but also with respect to the strength of the pre-treatment protest vote, and the degree to which voters are exposed to the shocks that the previous literature identifies as drivers of populist preferences, such as immigration, trade, fiscal austerity.

When it comes to our research question, we highlight a negative causal effect of funds on populism. According to our estimates, the treatment implies a drop in populism of about 5% of the mean of the dependent variable (94% of its standard deviation). Our findings are robust to a number of checks, and, in particular, when we change the estimation bandwidth, take into account potential spillovers across the border, and adopt a non-parametric estimator. Further findings indicate that among the two components of populism, antiestablishment and authoritarianism (Inglehart and Norris, 2018), only the former reflects redistribution. We also highlight that regional transfers have a negative impact on populist votes but no effect on non-populist votes, and that money matters irrespective of the specific channels (public works, subsidies to households and firms, current expenditures of local administrations) through which it is delivered to local communities. Finally, we show that the effect we estimate at the border is quite stable within the bandwidth, for which the Angrist and Rokkanen (2015) assumption allows us to provide some far-from-the-threshold inference.

To the best of our knowledge there is no other work that tests the effect of regional redistribution on the populist vote at general elections in Western countries.[2] The nearest paper is Becker et al. (2017), which deals with Brexit and finds that EU Structural funds have no correlation with the Leave share; the authors speculate that "EU funding may be perceived by voters as a handout and a symbol of foreign dependence." Another paper related to ours is an unpublished manuscript: Crescenzi et al. (2019) use a spatial regression discontinuity identification strategy (on the border between East Wales and West Wales) and confirm that EU money had no impact on Brexit. Our results are different and only partially comparable to the Brexit-related ones: apart from referring to a different country, they are based on general elections instead of the unique Brexit referendum, so that, in this perspective, the insight we offer is more informative for different contexts.[3]

More generally, our paper is related to the booming literature on the economic determinants of populism in Western countries (Dustmann et al., 2017; Guiso et al. 2017; Guriev, 2018) – trade exposure, immigration, Great Recession, and fiscal austerity are all the economic drivers that scholars put in evidence.[4] While highlighting very relevant forces at work, these studies do not explicitly point to clear-cut policy implications. Our study, on the contrary, both confirms the role that economic insecurity plays and points to a well-identified tool, already in place, that, in principle, could be easily boosted. We also speak to the stream of this literature that explicitly adopts a regional perspective, as recent socio-economic shocks are unevenly distributed across territories (Becker et al., 2017;

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[2] In the context of Europe, some cursory evidence suggests that the political trend in favor of anti-establishment instances is taking place notwithstanding the financial efforts made through the EU cohesion policy. On August 8 2018, the WSJ highlighted that some of the biggest recipients of EU regional aid were the "hotbeds of the very discontent that's driving the bloc apart." In her April 16, 2019 TED talk that quickly went viral, Carole Cadwalladr, a British investigative journalist, mentioned the voting behavior of the residents of Ebbw Vale, South Wales (her home town), who voted for Leave notwithstanding the infrastructure and public buildings brought there by the EU cohesion funds.

[3] Another unpublished paper (Borin et al., 2018) addresses the question of whether the EU redistributive policy (negatively) affects Euroscepticism (as measured by the European social survey) in European regions and finds that it is, in fact, the case. However, we study effective voting behavior instead of perceptions, which is more relevant from a policy point of view.

[4] E.g., Colantone and Stanig (2018), Colantone and Stanig (2019), Barone and Kreuter (2019), Caselli et al. (2018), Malgouyres (2017), Dippel et al. (2017), Rodrik (2017) on trade exposure; Barone et al. (2016), Halla et al. (2017) on immigration; Algan et al. (2017) on the Great Recession; Fetzer (2018) on fiscal austerity. On a theoretical ground, Altomonte et al. (2019) present a model in which individuals develop a feeling of resentment when losing relative income and such anger translates to protest votes.

Rodríguez-Pose, 2018). Non-urban communities are those that suffered most, in a context where market-based convergence mechanisms, such as the flow of people to high-income regions and capital toward poorer areas, work only imperfectly (Austin et al., 2018). Rajan (2019) cautions that in order to limit populist voters' reaction, place-based policy is needed: regional interventions should not be considered as something to be, at most, tolerated, as it limits reallocation to more promising places; rather, regional interventions represent a powerful tool to support local communities as relevant elements of a healthy market economy. Our findings support this view.

The remainder of the paper is structured as follows. Section 2 describes the institutional details and the data. Section 3 illustrates our RDD identification framework. Section 4 provides the results, which include a full-fledged robustness and placebo supplementary analyses. Section 5 concludes.

2. Institutional details and data

In this section, we first provide some details on the EU regional policy and then focus on and explain how we measure populism.

2.1 The 2007-2013 EU regional policy

The EU regional policy pursues the goal of economic, social and territorial cohesion by narrowing the development disparities among regions and member states. Its main instruments are the programs financed by the Structural funds, and in particular: the European Regional Development Fund (ERDF), set up in 1975, providing support for the creation of infrastructures and productive job-creating investment, mainly for businesses; the European Social Fund (ESF), set up in 1958, which contributes to the integration of the unemployed and disadvantaged segments of the population into working life, mainly by funding training measures.[5] For Italy in the 2007–2013 period, the 2007–2013 EU regional policy accounted for about € 46 billion. The distribution of funds follows the EU eligibility rules, which attribute the status of the Convergence Objective (formerly Objective 1), which is our

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[5] We do not consider the Cohesion Fund (CF), which is designed for countries whose per capita GDP is below 90% of the average, because Italy is not eligible to receive it.

treatment of interest, to all regions with per capita GDP under the threshold of 75% of the EU average. In Italy 5 out of 20 regions (Basilicata, Calabria, Campania, Puglia and Sicily) belonged to the Convergence Objective in the 2007–2013 period (Figure 1) while others receive much less money (within the Competitiveness and Employment Objective). Hence in what follows we estimate the effect of the Convergence Objective status relative to the Competitiveness and Employment Objective one.

Information on spending is taken from the OpenCoesione database, which provides very detailed geo-referenced information at the project level of all projects targeted by the 2007–2013 EU regional policy. We collapsed data on disbursements at the municipality level. Figure 2 (Panel A) shows the geographical pattern around the border of the average per capita spending over the 2008–2012 period, which precedes the 2013 elections of our focus. As expected, Convergence Objective regions received a substantial amount of funding, while the other areas are less covered by transfers.

Finally, it is worth noting that, over the same period, there were also some projects only funded by national sources (in particular the "*Fondo per lo Sviluppo e la Coesione*"). However, their role seems to be limited, as the spending in the 2007–2013 period relative to national programs amounted to about one-seventh of those funded by EU programs. We decided to exclude from our main regressions those expenditures that were financed only by national sources, but we checked the robustness of our findings to their inclusion.

2.2 Defining populism

Our dependent variable is the populist intensity of political preferences at the 2013 Italian general parliamentary election. We focus on elections for the lower house of the legislature (Chamber of Deputies), in light of its broader political involvement (i.e., all Italian citizens over the age of 18 have the right to vote). Data on election outcomes at the municipality level come from the Ministry of Interior. Available information includes number of votes for each party, invalid ballot papers, and total eligible population.

We identify the degree of populism for each party by relying on the scores developed by Inglehart and Norris (2018). That study exploits the 2014 Chapel Hill Expert Survey (CHES), in which 337 political scientists rate the positioning of 268 parties (those with seats in parliaments) on 13 policy areas. With respect to Italy, 13 parties were analyzed. Experts' answers are mapped into a score (0–100 scale) for each party, related to two dimensions of populism: (i) anti-establishment ideology that considers society to be ultimately separated into two homogenous and antagonistic groups – the "pure people" and the "corrupt elite" – and argues that politics should be an expression of the will of the people ($Antielite_p$); (ii) authoritarian belief in a strictly ordered society in which infringements of authority are to be punished severely ($Authorit_p$). First, we define $Populism_p$ at the party level as the simple average between the two scores:

$$Populism_p = (Antielite_p + Authorit_p)/2.$$

Figure 3 shows these three variables at the party level. Lega Nord (Northern League) is the most populist party, which ranks very high in both components. It is followed by Fratelli d'Italia (Brothers of Italy), the post-fascist party that is characterized by the highest authoritarian score. Movimento Cinque Stelle (Five Star Movement) ranks third, and its populism score, in contrast to Fratelli d'Italia (Brothers of Italy), relies heavily on the anti-elite component.

Then we map parties' populism intensity into municipalities using the shares of votes that party p received in municipality i at the 2013 general election:

$$Populism_i = \sum_p share_{ip} * Populism_p.$$

Figure 2 (Panel B) shows the variability in populism across municipalities.

In a robustness exercise, we also used the 0-1 classification by Inglehart and Norris (2016), according to which a party is labelled as populist if its overall score is above a given threshold.[6] Accordingly, we consider $\overline{Populism_i} = \sum_p share_{ip} * \overline{Populism_p}$, where $\overline{Populism_p}$ is a dummy equal to one if the party p is populist. Table 1 shows the main descriptive statistics on the outcome variable and on the key regressors.

3. Identification strategy

Throughout the paper we mainly adopt a parametric spatial regression discontinuity design at the municipality level. We focus on the border separating Molise and Lazio on the Northern side to Puglia and Campania on the Southern side (see Figure 1). Populism is regressed on the treatment status, a second-degree polynomial in latitude and longitude and border fixed effect (see Dell, 2010):

$$Populism_i = \alpha_0 + \alpha_1 T_i + f(latitude_i, longitude_i) + \varphi_b + \varepsilon_i \qquad (1)$$

where $Populism_i$ is defined above, T_i is a dummy variable equal to one if municipality i belongs to a Convergence Objective region and zero otherwise, $f(latitude_i, longitude_i)$ is a second-order degree polynomial in latitude and longitude, and φ_b are border fixed effects. As robustness checks we estimate equation (1) after substituting $f(latitude_i, longitude_i)$ with a second degree polynomial in (Euclidean) distance from the border, allowing for varying slopes on the two sides. We also show that our results are confirmed using a nonparametric approach.

We also consider a variation on equation (1) in which the regressor of interest is the continuous and endogenous treatment given by disbursements that, in turn, is regressed on the Convergence Objective status in a 2SLS framework. Namely, we estimate:

$$Populism_i = \beta_0 + \beta_1 ln(disbursements_i) + f(latitude_i, longitude_i) + \varphi_b + \mu_i \qquad (2)$$

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[6] In 2013, Italian parties coded as populist are the Lega Nord (Northern League), Movimento Cinque Stelle (Five Stars Movement) and the Fratelli d'Italia (Brothers of Italy).

$$ln(disbursements_i) = \gamma_0 + \gamma_1 T_i + f(latitude_i, longitude_i) + \varphi_b + \sigma_i \qquad (3)$$

where $disbursements_i$ is average disbursements per capita over the five-year period before elections. The model in equations (2)–(3) takes into account that: (i) all municipalities receive some treatment, even if it relies on very different endowments, and (ii) the intensity of treatment also differs within treated regions. Equations (1) and (2)–(3) are estimated on different samples: within 75/50/25 km of the border (Figure 4), and within 50 km of the border, but excluding municipalities whose distance is less than 10 km, to check that potential spatial spillovers do not drive our results.

The idea behind our spatial RDD approach is that, through the border, only the treatment status changes with this discontinuous jump, while all the other characteristics are evenly distributed. Under this condition, it is possible to separate the effect of the policy from everything else (Black, 1999). It is well known that the RDD is deemed preferable to other non-experimental methods because if the units of the analysis (in our case the Italian municipalities) are unable to precisely manipulate the forcing variable, the variation of the treatment around the border is randomized as though the municipalities had been randomly drawn on just one or the other side of the boundary (Lee, 2008).

4. Results

This section starts by illustrating some preliminary evidence that motivates the RDD approach (Section 4.1). Then, it provides the baseline results (Section 4.2) and substantiates them with full-fledged robustness and placebo analyses (Section 4.3). We also explore some mechanisms through which the effect of funding percolates on political preferences, looking at the winners and losers of the political competition, the dimensions of populism (anti-establishment and authoritarianism), and the specific modalities through which EU money reaches the local communities (Section 4.4). Finally, we provide some far-from-the-threshold calculations intended to corroborate the external validity of our local estimates (Section 4.5).

4.1 Preliminary tests

We start by testing whether the spatial RDD may be a credible identification strategy in our setting. First, we run an RDD regression at the municipality level using disbursements from EU regional policy as a dependent variable. In particular, we consider average per capita spending in the five years before the 2013 general election (2008–2012). These "first-stage" results always confirm the relevance of the discontinuity (Table 2): crossing the border implies around a 120% jump in EU transfers (about € 125 per capita) when focusing on a sample of municipalities whose distance from the border is less than 50 km. Second, an implication of the local randomized result is that the empirical validity of the RDD can be tested. If the variation in the Convergence Objective status near the edge is approximately randomized, it follows that all "baseline covariates" – those variables determined prior to the start of the policy – should take the same values on the two sides of the border.

Table 3 presents a test for the absence of discontinuity in baseline characteristics around the threshold that substantiates the empirical strategy. If no effect is detected, then that variable can be considered as controlled-for in the exercise. We focus on a large number of variables that should capture most of the heterogeneity at the municipality level. Overall, no jump occurs at the threshold for a number of geographic features (columns 1–3) and demographics (columns 4–5). At the same time, human and social capital, which are potentially correlated both with EU disbursements and populism, are balanced (columns 6–7). Column 8 shows that the broadband diffusion, another potential confounder (Schaub and Morisi, 2019), is the same at the cutoff; the same holds for institutional quality (column 9).[7] We also check that lagged political preferences are the same on the two sides of the threshold. Ideally one would like to see that lagged *Populism* is balanced; unfortunately, the 2013 CHES-based score cannot be straightforwardly applied to previous elections because the political landscape was very different. For example, the populism issue was basically very low in the public debate in the 2008 general elections. Hence, we use the lagged share of right-wing votes in the general election as the dependent variable, which should capture at least the

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[7] De Angelis et al. (2018) measure institutional quality in Italian municipalities by the number of days between the Central state's deadline for the approval of a local tax (TASI) and the date of adoption that changes at the municipality level. The underlying idea is that the earlier a local administration is able to update the rules on local taxation, the more it is efficient.

authoritarian component of populism. Again, the balancing RDD assumption is met (column 10).[8] The next four columns reassure that neither sectoral composition nor difference in firm size drive the results (columns 11–14), while the next four columns are devoted to showing that exposure to concurrent economic shocks potentially related to the populist vote are balanced around the threshold. Namely, we focus on (i) Immigration (Barone et al., 2016), measured as the ratio between immigrants and total population in 2001; (ii) exposure to the China shock (Barone and Kreuter, 2019), measured as $\sum_k \frac{L_{ik}}{L_i} \frac{\Delta M_k^{ITA}}{L_k}$, where ΔM_k^{ITA} is the yearly average change in imports from China to Italy observed in sector k over the 2008–2013 period, L_k is Italian employment in sector k in 2001, L_{ik} is the employment in municipality i and sector k in 2001, and L_i is the total employment in municipality i in 2001; (iii) exposure to the euro shock, consistent with the idea – widely spread in the public debate – that losing the flexible exchange rate with respect to many euro countries hurt the Italian economy. Exposure to the euro shock is proxied by $\sum_k \frac{L_{ik}}{L_i} (1 - \vartheta_k) \Delta REER$, where ϑ_k is the sectoral skill intensity in manufacturing sector k taken from Bugamelli et al. (2010) (lower sectoral skill content implies higher sensitivity to price competition); $\Delta REER$ is the annual change of the real effective exchange rate of the Italian currency in the 2008–2013 period, whose positive values indicate appreciation and, thus, loss of competitiveness; and (iv) exposure to the fiscal discipline. The Italian sovereign debt crisis peaked between the end of 2011 and the second half of 2012; the following fiscal contraction has been stronger for local economies more dependent on public spending. Exposure to fiscal discipline is proxied by $\sum_k \frac{L_{ik}}{L_i} \rho_k$, where ρ_k is the sectoral dependence on public spending computed as the share of the final demand that is acquired by the public sector according to the 2005 Input-Output accounts. In all cases, exposure to concurrent economic shocks is well-balanced around the threshold (columns 15–18).

Nevertheless, one might argue that some unobserved variables, which are simultaneously correlated with populism and exposure to the EU program but not with all variables shown above, might jump at the regional borders, thereby biasing our results. Examples of potentially omitted variables refer to

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[8] Right-wing parties in 2001 are: Alleanza Nazionale, Centro Cristiano Democratico, Forza Italia, Forza Nuova, Lega Nord, Liga Fronte Veneto, Nuovo Psi and Fiamma Tricolore.

variables related to the working of regional administrations, since the EU-status border corresponds to that which separates Italy's regional jurisdictions. We provide an indirect test that shows this is not the case: changing administrative region does not imply, per se, a change in populism. We demonstrate this by examining whether populism jumps at borders separating regions *sharing the same status*. If our findings are the result of unobservable variables, rather than EU financing, we should find an effect on the outcome variable. To keep the sample as similar as possible to that used so far, we focus on the border between Lazio and Molise (neither of which are in the Convergence Objective) and the one between Campania and Puglia (both in the Convergence Objective). After stacking the two samples, we assume that the (fake) treatment is administered to municipalities located in Molise and in Puglia, whose municipalities are compared with those in Lazio and Campania, respectively. Table 4 shows that in the absence of a discontinuity in transfers, crossing the regional border does not carry with it any change in local political preferences toward populism. This result holds for various distances from the borders (columns 1–3), and when we restrict the sample to those municipalities that also belong to the sample used in our baseline regressions (columns 4–6).

4.2 Main results

Table 5 provides our baseline results. They refer to three different parametric models and for each of them we use bandwidths of varying size (75 km, 50 km and 25 km, respectively). Our dependent variable is *Populism*. In columns 1 to 3, we report results from equation (1). Our findings suggest that the impact of the transfers on populism is sizable. For the 50 km bandwidth, which we will consider as our benchmark, crossing the Convergence Objective border implies a reduction of 2.9 p.p. in *Populism*. This effect corresponds to about 5% of the mean of *Populism* (94% of its standard deviation). The impact is highly significant and robust across the various bandwidths. The second model, in columns 4 to 6, makes use of the actual (log) per capita disbursements received by the municipality and instruments them using the Convergence Objective status (see equations (2)–(3)). The first stage F-statistics is always largely reassuring, and the second stage effect is estimated to be of a magnitude similar to those of the previous experiments: if we increase our key dependent variable of one standard deviation, *Populism* decreases by four-fifths of its standard deviation. The third model, columns from 7 to 9, presents the impact estimated by replacing the latitude and

longitude polynomial with a second-degree polynomial in the (Euclidean) distance to the Convergence Objective border. We allow the slopes of the polynomial to be different across the cutoff. These results, which largely confirm the previous ones, are useful because they can be compared with those obtained with nonparametric methods (see below).[9]

Table 6 provides the nonparametric analogues of the specifications that use distance from the border. The estimator for the Convergence Objective status effect is computed using the procedure developed in Calonico et al. (2014) and Calonico et al. (2017). The choice of the bandwidth is based on the optimal bandwidth choice proposed by Imbens and Kalyanaraman (2012). Reassuringly, the estimated impacts are almost indistinguishable from the ones derived with parametric specifications. Figure 6 depicts the canonical RDD graph that confirms the downward jump of *Populism* for treated units.

4.3 Robustness checks

Next we probe the robustness of our results. We start by using the specification of Table 5, column 2, as the benchmark. In Table 7, column 1, we change our measure of populism. Here, we use the share of votes for populist parties according to the 0–1 definition of Inglehart and Norris (2016): the populist parties are the Northern League (Lega Nord), the Five Star Movement (Movimento Cinque Stelle) and the Brothers of Italy (Fratelli d'Italia), while other parties are non-populist. We find that transfers still impact negatively on the outcome, and the effect is highly significant. In column 2, we drop the observations close (10 km) to the two sides of the border. This exercise ensures that our findings are not driven by the relocation or commuting of people across the Convergence Objective boundary. Results are nicely confirmed, thus validating the identification strategy. As discussed by Lee and Lemieux (2010), because of its local-randomized nature, it is not necessary to include additional controls in an RDD setting to obtain consistent estimates. However, doing so might improve the precision of the estimates in small samples (Imbens and Lemieux, 2008). In column 3 we add as controls all the variables used as dependent variables in Table 3. The results show that including

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[9] Unreported evidence (available upon request) shows that the results with the univariate forcing variable are very stable if we replace Euclidean distance with travel distance.

additional controls has few consequences on the core point estimate. Next, we worry that we might erroneously attribute some underlying spatial trends in populist voting to the crossing of the Convergence Objective status border. To lessen this concern, we replicate our baseline specifications by using fake borders. To be sure, in column 4 we consider a false border (50 km north of the true border) within non-Convergence Objective areas, while in column 5 we consider a false border (50 km south of the true border) within Convergence Objective territories. The results clearly suggest that we are not mistakenly capturing something different from the impact of the EU programs. Finally, column 6 confirms our results using a different statistical unit of analysis (local labor market) that might better accommodate measurement errors stemming from spending spillovers across municipalities.

Then, we move to the 2SLS specification (Table 8). Yet again, we change the measure of our outcome variable (column 1), drop the observations in the 10 km safety belt (column 2), and add the baseline covariates (column 3). In the next columns, we vary the way we measure expenditure intensity to make sure that the results do not rely on a single proxy. In columns 4 and 5 we average disbursement by EU programs over a period, respectively, of four and three years (in the baseline, this measure refers to a five-year average). In column 6, we add the nationally-funded cohesion policy. Finally, column 7 reports results using a different statistical unit of analysis (local labor market). The results of these robustness checks do not alter our main findings.

4.4 Further results

Populism is the share of votes to populist parties, where populism intensity is measured on a [0–100] scale. It is interesting to see whether the detected negative effect comes from an effect on the numerator, the denominator or a combination of both. Table 9 provides the breakdown. After controlling for the voting-eligible population, EU transfers have a negative discernable impact on the log of the absolute number of populist votes: in the treated municipalities they go down by nearly 15% (column 1; see also column 4). However, non-populist votes (defined for each party as the complement to 100 of *Populism*) do not benefit from such a drop (columns 2 and 5). On the other hand, EU aid slows down (log) the number of total valid votes (columns 3 and 6), thereby decreasing voter turnout.

We now consider different dimensions of the populist milieu. As noted above, according to Inglehart and Norris (2018), there are at least two traceable components. The first one refers to the gap between "common citizens" and the "elite," where the former is seen as virtuous and the latter as fraudulent. The second component refers to a taste for authoritarianism: respecting the popular sovereignty is seen as a priority and an instrument of liberal democracy checks and balances; in particular, those referring to non-elected autonomous bodies are considered an obstacle to the realization of people's will (Kaltwasser, 2018). In our data, $Antielite_p$ and $Authorit_p$ capture these two components; we then map them into municipalities by means of party-level vote shares and use them as dependent variables. Table 10 provides the results, according to which the first component is the one that matters. This is not surprising: the transfers are received from a body considered part of the establishment (the popular narrative uses the term "troika" to indicate EU authorities jointly with ECB and IMF). Therefore, receiving a gift from this body might change the negative feeling toward the elite. At the same time, our estimates are probably less interesting for countries in which the prevailing feature of local anti-establishment parties is authoritarian.

Finally, we provide a breakdown of the impact according to the types of transfers. We can distinguish between incentives to households and firms, public works and current expenditures of local administrations (Table 11). All of them seem to contribute to the slowdown of populist instances.

4.5 Inference far from the threshold

As it is well known, the regression discontinuity design allows unbiased estimates of the treatment effect only at the threshold, while the impact of the treatment on infra-marginal municipalities may also be of interest. In what follows we make use of Angrist and Rokkanen's (2015) conditional independence assumption (CIA) to see whether our estimated treatment effect is stable for away-from-the-cutoff municipalities. The idea of the CIA is to break the relationship between treatment status (Convergence Objective) and outcomes by means of a number of covariates such that, conditional on them, outcome is independent of the running variable (distance). The vector of covariates is then used to identify counterfactual values for the outcome variables of interest.

Choosing such covariates is equivalent to identifying the omitted variables in a regression of populism on distance. We do that by means of a double selection procedure based on LASSO (Belloni et al., 2014): starting with 177 potential controls,[10] we finally select eight variables. CIA tests are reported in Table 12, which shows the results from five estimation windows of various widths: 10 km, 20 km, 30, km, 50 km (that covers the whole baseline sample). The 20 km bandwidth is the largest one for which the CIA is satisfied, while in the 30 km bandwidth there is evidence of CIA violations on the right side. We are not able to provide a far-from-the-threshold inference for distances further than 30 km. With these results in hand, Table 13 shows the regression of *Populism* on the Convergence Objective treatment dummy and the selected covariates. In column 1, we show the benchmark estimate obtained by estimating equation (1) in which $f(latitude_i, longitude_i)$ is substituted by the forcing variable (distance measured in km). Note that such benchmark estimates differ from that shown in Table 5, column 8, which is obtained by controlling for a second-degree polynomial in distance (measured in km) with varying slopes. Overall, estimates suggest that the estimated treatment effect is rather stable within 30 km, ranging from 3.1 to 3.8 percentage points, compared to 3.5 estimated at the cutoff.

5. Concluding remarks

In recent years, a number of economic shocks such as globalization and the Great Recession have hampered economic well-being in Western countries and the distribution of the resulting costs has been uneven, especially across regions. Losers complained by embracing populism as reaction to their rising economic insecurity. A pertinent question then is to what extent redistribution is able to counteract the appeal of populist views. We have studied the case of EU cohesion policy in a spatial regression discontinuity framework applied to Italian municipalities. Some previous evidence – based on the case of Brexit – suggests that regional aid has little role, implicitly inferring that cultural causes might be the source of discontent insofar as alleviating economic insecurity through aid does not

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[10] We use the 17 variables employed in Table 3 as dependent variables (excluding quality of institutions to avoid sample drop), their squared values and two-way interaction, together with seven border fixed effects.

seem to matter. This paper shows that that the previous conclusion drawn from the example of Brexit has no general validity.

We have shown that financial transfers injected by the EU regional policy toward Italian lagging areas have had the ability to change local political preferences. Compared to regions in other EU Objectives, the status of Convergence Objective implies a significant drop in populism. Our findings also highlight that money matters per se, irrespective of the specific channels – investment or consumption-oriented – through which it is injected toward local communities. This aspect seems to be consistent with the idea that the potential protest voter is in need of short-term support, and the long-term consequences of the transfers are considered as second-order issues.

We believe that our findings are very interesting for the current debate on the political consequences of economic difficulties in Western countries. Populist forces tend to maximize their short-term political dividend by suggesting a number of recipes pointing to de-globalization; however, the consequences of such policies might be even more unequally distributed. On the contrary, we argue that redistribution policies should be reinforced as a necessary complementary pillar of the traditional liberal package that neatly separates production and distribution of income.

Tables and figures

Table 1: Descriptive statistics

Panel A: Whole country – treated and untreated municipalities						
VARIABLES	Units	Observations	Mean	Standard dev.	Min	Max
Populism	Percentage points	7,883	55.378	3.668	30.613	69.587
Convergence Obj.	0-1	7,883	0.268	0.443	0	1
Disbursements	Average euros per capita 2008-2012	7,883	56.046	100.238	0.000	3,399.317

Panel B: Whole country – treated municipalities						
VARIABLES	Units	Observations	Mean	Standard dev.	Min	Max
Populism	Percentage points	2,113	52.456	3.239	30.613	61.774
Convergence Obj.	0-1	2,113	1	0	1	1
Disbursements	Average euros per capita 2008-2012	2,113	143.064	139.980	8.648	3,399.317

Panel C: Whole country – untreated municipalities						
VARIABLES	Units	Observations	Mean	Standard dev.	Min	Max
Populism	Percentage points	5,770	56.448	3.204	30.931	69.587
Convergence Obj.	0-1	5,770	0	0	0	0
Disbursements	Average euros per capita 2008-2012	5,770	24.179	52.586	0.000	1,216.906

Panel D: 50km sample – treated and untreated municipalities						
VARIABLES	Units	Observations	Mean	Standard dev.	Min	Max
Populism	Percentage points	560	53.523	3.092	31.783	63.271
Convergence Obj.	0-1	560	0.532	0.499	0	1
Disbursements	Average euros per capita 2008-2012	560	103.448	187.104	6.303	3,399.317

Panel E: 50km sample – treated municipalities						
VARIABLES	Units	Observations	Mean	Standard dev.	Min	Max
Populism	Percentage points	298	51.910	2.962	31.783	58.306
Convergence Obj.	0-1	298	1	0	1	1
Disbursements	Average euros per capita 2008-2012	298	146.490	234.337	28.326	3,399.317

Panel F: 50km sample – untreated municipalities						
VARIABLES	Units	Observations	Mean	Standard dev.	Min	Max
Populism	Percentage points	262	55.357	2.034	49.484	63.271
Convergence Obj.	0-1	262	0	0	0	0
Disbursements	Average euros per capita 2008-2012	262	54.492	89.273	6.303	975.389

Table 2: First stage

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
Convergence Obj	1.286***	1.234***	1.139***	123.4***	124.5***	83.01**
	(0.110)	(0.131)	(0.180)	(25.22)	(26.70)	(38.22)
Bandwidth	75 km	50 km	25 km	75 km	50 km	25 km
Observations	834	560	269	834	560	269

The dependent variables are ln (disbursements) and disbursements in columns 1-3 and columns 4-6, respectively. The estimation method is OLS. All specifications include a second-degree polynomial in latitude and longitude and 7 border fixed effects. Robust standard errors are in parentheses; *** p<0.01, ** p<0.05, * p<0.1.

Table 3: Balance checks

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		Geography			Demography		Human & social capital		Dig. div., Qual. of inst. & lagged politics	
Conv. Obj	-0.0156	-35.45	13.78	549.5	5.669	-0.259	0.0206	-0.0913	-9.591	1.700
	(0.0395)	(39.93)	(55.44)	(1175)	(21.20)	(0.327)	(0.0303)	(0.0806)	(7.774)	(1.770)
Dep. Var.	Seaside	Altitude	Slope	Popul.	Aging index	Share of graduates	Social Capital	Digital divide	Quality of instit.	% right-wing votes
Obs	560	560	560	560	560	560	560	560	397	560

The dependent variables are: seaside municipality (col. 1), altitude (col. 2), max altitude - min altitude (col. 3), population (col. 4), aging index (col. 5), share of graduates (col. 6), social capital (proxied by the of existence of an organ donation organization, col. 7), a dummy variable equal to one if there no full broadband access (col. 8), quality of institutions (proxied by the indicator in De Angelis et al. (2018), col. 9), percentage of votes for right-wing parties in 2001 general elections (col. 10). All these dependent variables are measured in 2001 except for digital divide and quality of institutions that refer to 2013 and 2012, respectively. The estimation method is OLS. All specifications include a second-degree polynomial in latitude and longitude and 7 border fixed effects. The bandwidth is 50 km. Robust standard errors are in parentheses; *** p<0.01, ** p<0.05, * p<0.1.

Table 3: Balance checks (continued)

VARIABLES	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
		Sectoral composition & firm size				Competing shocks		
Conv. Obj	-2.253	-0.440	2.196	0.339	0.00472	-0.00157	-1.548	0.00212
	(2.551)	(1.485)	(2.520)	(0.361)	(0.00314)	(0.00204)	(2.323)	(0.00507)
Dep. Var.	Share industry	Share construction	Share services	Share small firms	Immigrant share	Exposure to China	Exposure to Euro shock	Exposure to fiscal discipline
Obs	560	560	560	560	560	560	560	560

The dependent variables are: share of employees industry (col. 11), share of employees in construction (col. 12), share of employees in services (col. 13), share of employees in firm with less than 20 employees (col. 14), share of immigrants over population (col. 15), exposure to China import competition (col. 16), exposure to euro (col. 17), exposure to fiscal discipline (col. 18). All these dependent variables are measured in 2001 except for exposure to fiscal discipline that refers to 2001-2005. The estimation method is OLS. All specifications include a second-degree polynomial in latitude and longitude and 7 border fixed effects. The bandwidth is 50 km. Robust standard errors are in parentheses; *** p<0.01, ** p<0.05, * p<0.1.

Table 4: Continuity at other regional borders

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
Fake treatment	0.974	0.702	0.170	0.156	-0.144	-0.384
	(0.645)	(0.864)	(1.532)	(0.717)	(0.909)	(1.576)
Bandwidth	75km	50km	25km	75km	50km	25km
Obs included in the baseline	N	N	N	Y	Y	Y
Observations	663	378	161	441	296	138

The dependent variable is Populism. Fake treatment is a dummy variable equal to 1 if the municipality is located in Molise or Puglia and 0 if is located in Lazio or Campania. The estimation method is OLS. All specifications include a second-degree polynomial in latitude and longitude, and border fixed effects. Robust standard errors are in parentheses; *** p<0.01, ** p<0.05, * p<0.1.

Table 5: Baseline results

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Convergence Obj	-3.639***	-2.916***	-2.466***				-2.626***	-2.763***	-2.871***
	(0.363)	(0.396)	(0.518)				(0.525)	(0.646)	(0.983)
Ln(disb.)				-2.516***	-2.458***	-2.221***			
				(0.361)	(0.446)	(0.616)			
Band.	75km	50km	25km	75km	50km	25km	75km	50km	25km
2° deg. pol.	Lat-lon	Lat-lon	Lat-lon	Lat-lon	Lat-lon	Lat-lon	Distance	Distance	Distance
Est. method	OLS	OLS	OLS	2SLS	2SLS	2SLS	OLS	OLS	OLS
F				124.665	83.632	42.017			
Observations	834	560	269	834	560	269	834	560	269

The dependent variable is Populism. The estimation method is OLS except for columns 4-6 in which ln (disbursements) is instrumented with the Convergence Obj. status (2SLS). All specifications include a second-degree polynomial in latitude and longitude, except for columns 7-9 in which that polynomial is substituted with a second-degree polynomial in distance (measured in km) with varying slopes, and 7 border fixed effects. Robust standard errors are in parentheses; *** p<0.01, ** p<0.05, * p<0.1.

Table 6: Nonparametric estimates

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
Convergence Obj	-3.876***	-3.912***	-3.912***	-2.928***	-2.767***	-2.767***
	(0.336)	(0.336)	(0.404)	(0.557)	(0.557)	(0.648)
Method	Conventional	Bias-corrected	Robust	Conventional	Bias-corrected	Robust
Observations	7,859	7,859	7,859	1,745	1,745	1,745
Optimal bandwidth	106.6 km	106.6 km	106.6 km	36.6 km	36.6 km	36.6 km
Effective observations	1,115	1,115	1,115	369	369	369

The dependent variable is Populism. The nonparametric estimator of the Convergence Obj. status effect is computed using the procedure developed in Calonico et al. (2014) and Calonico et al. (2017). The choice of the bandwidth is based on the optimal bandwidth choice proposed by Imbens and Kalyanaraman (2012). In columns 1 and 4, estimates do not account for the possibility of the linear fitting bias; in columns 2-3 and 5-6 estimates account for the presence of the linear fitting bias following the bias-correction procedures proposed by Calonico et al. (2014). In columns 1-3 the initial sample is made of all Italian mainland municipalities; in columns 4-6 the initial sample is made of all mainland Italian municipalities whose distance from the border is lower than 200 km. Triangular kernel. *** p<0.01, ** p<0.05, * p<0.1.

Table 7: Robustness checks on the reduced form

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
Convergence Obj	-6.395***	-3.048***	-2.940***			-2.180***
	(1.048)	(0.566)	(0.456)			(0.527)
Fake ob. 1 north				0.534		
				(0.390)		
Fake ob. 1 south					0.314	
					(0.446)	
Distance < 10 exc.	N	Y	N	N	N	N
Addition. controls	N	N	Y	N	N	N
Statistical units	Municipalities	Municipalities	Municipalities	Municipalities	Municipalities	LLMs
Observations	560	455	397	537	528	42

The dependent variable is Populism, except for columns 1 in which populism is measured according to the Inglehart and Norris (2016)'s classification. The estimation method is OLS. The bandwidth is 50 km; in columns 2 and 5 municipalities whose distance from the border is lower than 10 km are excluded. All specifications include a second-degree polynomial in latitude and longitude and 7 border fixed effects; in column 3 we also control for seaside, altitude, max altitude – min altitude, population density, aging index, share of graduates, share of employees in industry, share of employees in construction, share of employees in services, quality of institutions (proxied by the indicator in De Angelis et al., 2018). In column 4 (5) the fake threshold is obtained by adding (subtracting) 50 km to the original forcing variable. The statistical unit of analysis is municipality except for column 6 in which it is local labor market. Robust standard errors are in parentheses; *** p<0.01, ** p<0.05, * p<0.1.

Table 8: Robustness checks on the 2SLS estimation

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Ln(disb.)	-5.385***	-2.195***	-2.718***	-2.340***	-1.957***	-5.700***	-1.854***
	(1.156)	(0.482)	(0.567)	(0.412)	(0.315)	(1.710)	(0.689)
Dist. < 10 exc.	N	Y	N	N	N	N	N
Add. controls	N	N	Y	N	N	N	N
Statistical units	Municipalities	Municipalities	Municipalities	Municipalities	Municipalities	Municipalities	LLMs
F	83.632	64.649	53.637	99.233	135.450	13.254	9.838
Observations	560	455	397	560	560	560	42

The dependent variable is Populism, except for columns 1 in which populism is measured according to the Inglehart and Norris (2016)'s classification. The estimation method is 2SLS: ln (disbursements) is instrumented with the Convergence Obj. status. The bandwidth is 50 km; in column 2 municipalities whose distance from the border is lower than 10 km are excluded. All specifications include a second-degree polynomial in latitude and longitude and 7 border fixed effects; in column 3 we also control for seaside, altitude, max altitude – min altitude, population density, aging index, share of graduates, share of employees in industry, share of employees in construction, share of employees in services, quality of institutions (proxied by the indicator in De Angelis et al., 2010). In column 4 (5) disbursements are averaged over 4 (3) years before the election; in column 6 disbursements include the national cohesion policy. The statistical unit of analysis is municipality except for column 7 in which it is local labor market. Robust standard errors are in parentheses; *** p<0.01, ** p<0.05, * p<0.1.

Table 9: Adjustment mechanism

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
Convergence Obj	-0.146***	-0.025	-0.090***			
	(0.0151)	(0.0163)	(0.013)			
Ln(disb.)				-0.121***	-0.021	-0.075***
				(0.019)	(0.014)	(0.014)
Dep. var.	Ln (pop votes)	Ln (non pop. votes)	Ln (total votes)	Ln (pop votes)	Ln (non pop. votes)	Ln (total votes)
Est. method	OLS	OLS	OLS	2SLS	2SLS	2SLS
F				82.071	82.071	82.071
Observations	560	560	560	560	560	560

The dependent variable is ln (total number of populist votes) in columns 1 and 4, ln (total number of non-populist votes) in columns 2 and 5, ln (total number of valid votes) in columns 3 and 6. The estimation method is OLS in columns 1-3 and 2SLS in columns 4-6 in which ln (disbursements) is instrumented with the Convergence Obj. status. All specifications include a second-degree polynomial in latitude and longitude, ln (voting-eligible population) and 7 border fixed effects. The bandwidth is 50 km. Robust standard errors are in parentheses; *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table 10: Populism components

VARIABLES	(1)	(2)	(3)	(4)
Convergence Obj	-5.062***	-0.770		
	(0.723)	(0.664)		
Ln(disb.)			-4.206***	-0.644
			(0.762)	(0.550)
Dep. variable	Populism – antiestablishment	Populism – authoritarianism	Populism – antiestablishment	Populism – authoritarianism
Est. method	OLS	OLS	2SLS	2SLS
F			83.632	83.632
Observations	560	560	560	560

The dependent variable is the antiestablishment component of Populism in columns 1 and 3, and the authoritarianism component of Populism in columns 2 and 4. The estimation method is OLS in columns 1-2 and 2SLS in columns 3-4 in which ln (disbursements) is instrumented with the Convergence Obj. status. All specifications include a second-degree polynomial in latitude and longitude and 7 border fixed effects. The bandwidth is 50 km. Robust standard errors are in parentheses; *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table 11: Different types of expenditures

VARIABLES	(1)	(2)	(3)
Ln(disb.)	-0.573***	-0.996***	-1.838***
	(0.096)	(0.210)	(0.296)
Disbursements related to:	public works	transfers	public proc.
F	86.929	49.679	200.967
Observations	560	560	560

The dependent variable is Populism. The estimation method is 2SLS in which ln (disbursements) is instrumented with the Convergence Obj. status. The bandwidth is 50 km. All specifications include a second-degree polynomial in latitude and longitude and 7 border fixed effects. Robust standard errors are in parentheses; *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table 12: Conditional independence tests

WINDOW	(1) Convergence Obj = 0 (control municipalities)	(2) Convergence Obj = 1 (treated municipalities)
10 Km	0.132 (0.122) N = 56	-0.077 (0.128) N = 49
20 km	0.002 (0.039) N = 116	-0.074 (0.055) N = 98
30 km	0.006 (0.020) N = 169	-0.090*** (0.034) N = 147
40 km	0.020* (0.011) N = 218	-0.067*** (0.019) N = 205
50 km	0.031*** (0.009) N = 262	-0.063*** (0.013) N = 298

The dependent variable is Populism. The Table reports the coefficient of distance (measured in km) in different sample to the left (Convergence Obj = 0) and to the right (Convergence Obj = 1) of the cutoff. All specifications include slope, altitude*percentage of votes for right-wing parties in 2001, slope*digital divide, slope*immigrant share, population*exposure to fiscal discipline, aging index*percentage of votes for right-wing parties in 2001, aging index*share of employees in services, digital divide*percentage of votes for right-wing parties in 2001, and two border fixed effects; all these controls have been selected by means of a lasso double selection LASSO procedure. Robust standard errors are in parentheses; *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table 13: Treatment effect far from the cutoff

VARIABLES	(1)	(2)	(3)	(4)
Convergence Obj	-3.526*** (0.471)	-3.074*** (0.566)	-3.621*** (0.504)	-3.752*** (0.452)
The effect is measured at the following distance from the cutoff	0 km	10 km	20 km	30 km
Observations	560	105	214	316

The dependent variable is Populism. Robust standard errors are in parentheses; *** $p<0.01$, ** $p<0.05$, * $p<0.1$.
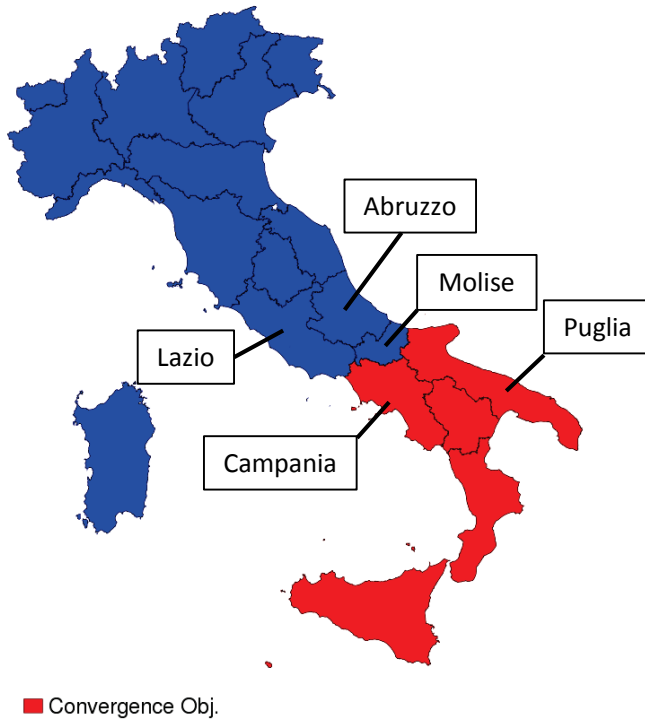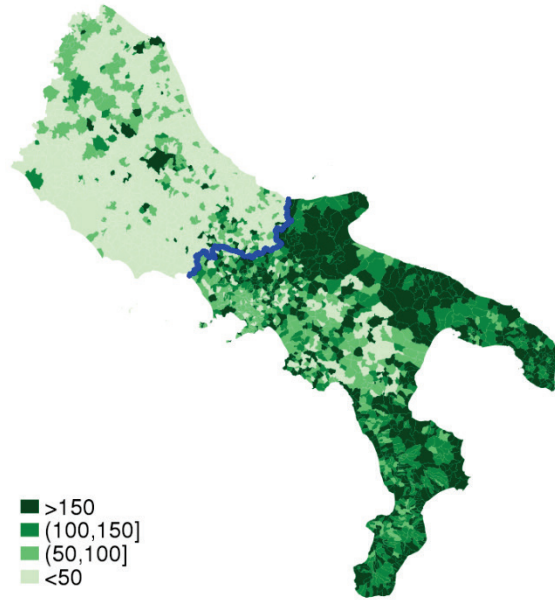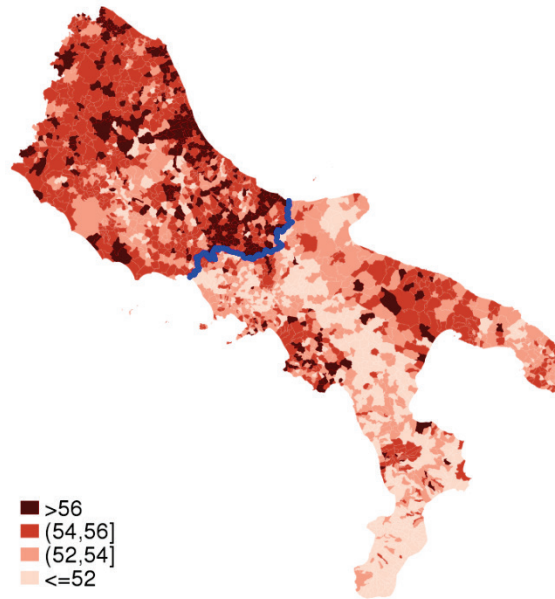
Figure 1: Convergence Objective regions in Italy 2007-2013

Abruzzo

Molise

Puglia

Lazio

Campania

Convergence Obj.

Figure 2: Regional Transfers and Local Voting Behaviour

PANEL A: Transfers from EU regional policy (per capita euros)

■ >150
■ (100,150]
■ (50,100]
■ <50

PANEL B: Populism

■ >56
■ (54,56]
■ (52,54]
■ <=52

Panel A reports spending by EU regional policy during the years 2008-2012 (i.e. the five years before the 2013 general election) in the group of regions nearest to the Convergence Objective border. Panel B report the index of Populism measured in the 2013 general election (see Section 3.2). In both cases, the blue line indicates the boundary separating the Convergence Objective from the other areas.

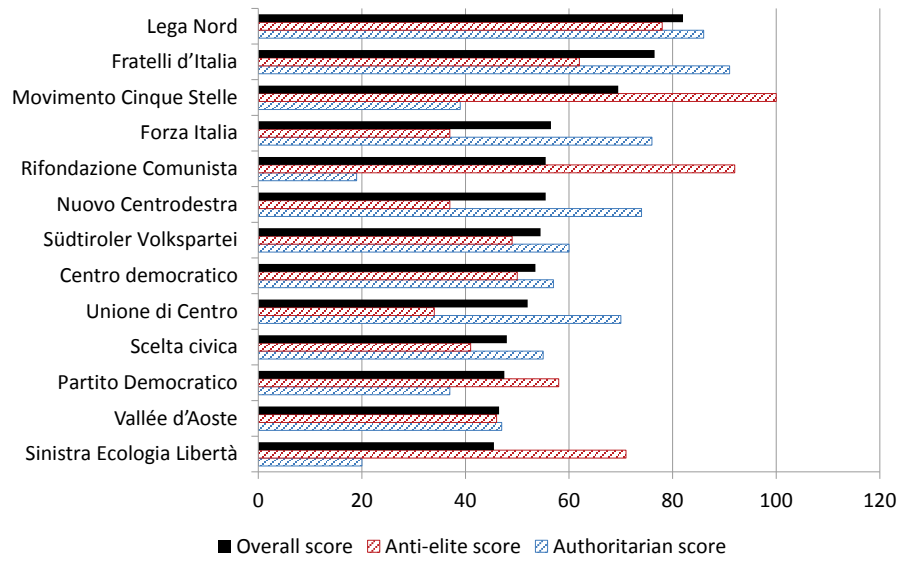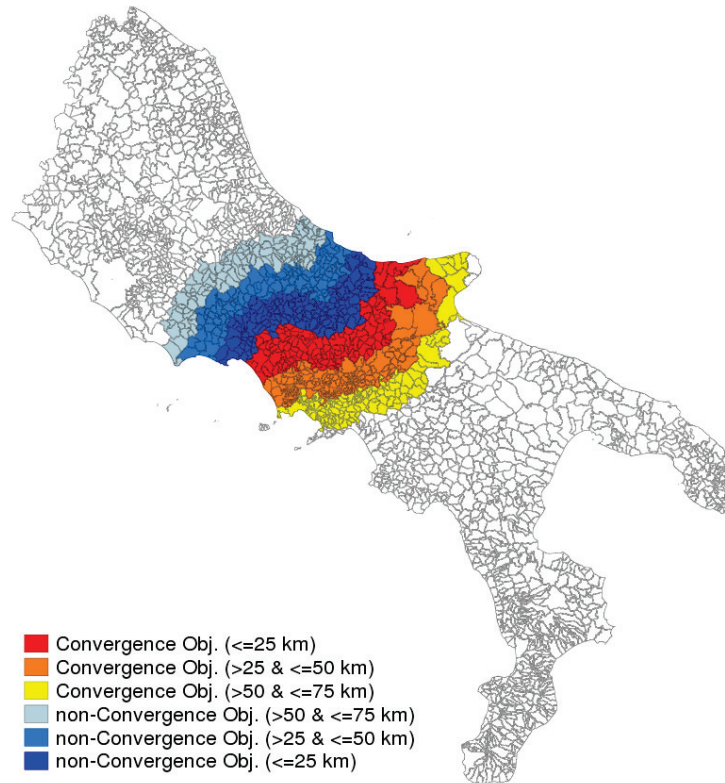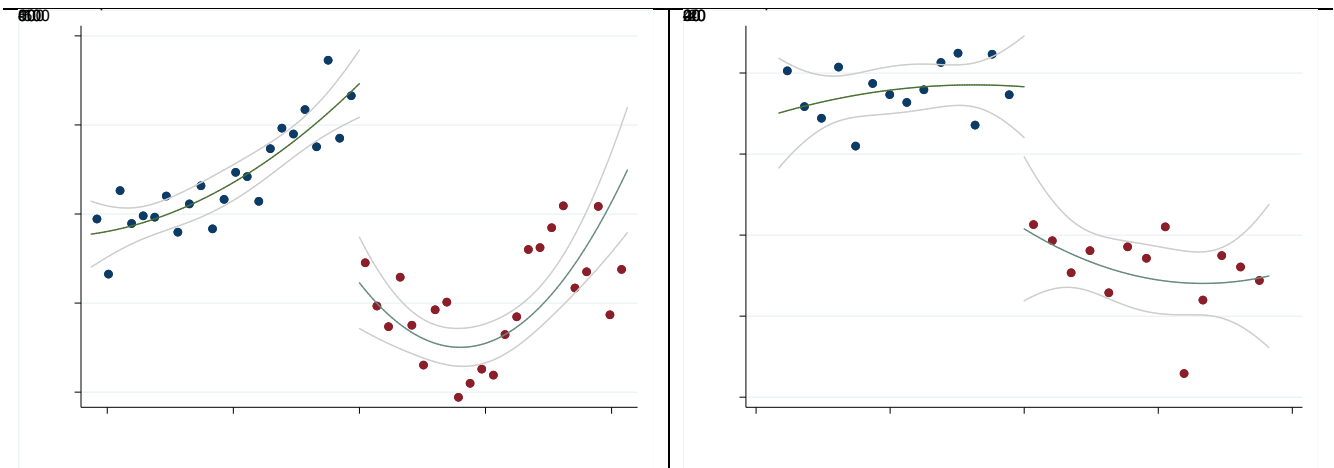**Figure 3: Populism scores at the party level**

Figure 4: Municipalities in the estimation sample

The map reports the sample of municipalities which are obtained using bandwidths of varying size (75km, 50km, 25km, respectively) around the Convergence Objective border.

Figure 5: Nonparametric RDD estimates

The figure reports the discontinuity in Populism at the Convergence Obj. border. The left graph includes all municipalities within 106.6 km from the border, consistently with the optimal bandwidth detected in Table 4, columns 1-3 while the right graph includes all municipalities within 36.6 km from the border, consistently with the optimal bandwidth detected in Table 4, columns 4-6. The number of bins is computed as min{sqrt(N); 10*ln(N)/ln(10)}, where N is the number of observations.

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