Istituto Nazionale Previdenza Sociale

giugno 2024 – numero 80

WorkINPS *Papers*

A map of discontent: economic distress or lack of public services?

Marco Fregoni

Marco Leonardi

ISSN 2532 -8565

Lo scopo della serie WorkINPS papers è quello di promuovere la circolazione di documenti di lavoro prodotti da INPS o presentati da esperti indipendenti nel corso di seminari INPS, con l'obiettivo di stimolare commenti e suggerimenti.
Le opinioni espresse negli articoli sono quelle degli autori e non coinvolgono la responsabilità di INPS.

The purpose of the WorkINPS papers series is to promote the circulation of working papers prepared within INPS or presented in INPS seminars by outside experts with the aim of stimulating comments and suggestions.
The views expressed in the articles are those of the authors and do not involve the responsibility of INPS.

In copertina: uno storico "Punto cliente" a Tuscania
INPS, Direzione generale, Archivio storico

I WORKINPS PAPER

Le basi dati amministrative dell'***INPS*** rappresentano una fonte statistica unica per studiare scientificamente temi cruciali per l'economia italiana, la società e la politica economica: non solo il mercato del lavoro e i sistemi di protezione sociale, ma anche i nodi strutturali che impediscono all'Italia di crescere in modo adeguato. All'interno dell'Istituto, questi temi vengono studiati sia dai funzionari impiegati in attività di ricerca, sia dai ***VisitInps Scholars***, ricercatori italiani e stranieri selezionati in base al loro curriculum vitae e al progetto di ricerca presentato.

I **WORKINPS** hanno lo scopo di diffondere i risultati delle ricerche svolte all'interno dell'Istituto a un più ampio numero possibile di ricercatori, studenti e policy markers.

Questi saggi di ricerca rappresentano un prodotto di avanzamento intermedio rispetto alla pubblicazione scientifica finale, un processo che nelle scienze sociali può chiedere anche diversi anni. Il processo di pubblicazione scientifica finale sarà gestito dai singoli autori.

Tommaso Nannicini

A map of discontent: economic distress or lack of public services?

Marco Fregoni
(World Bank, EMNPV)

Marco Leonardi
(University of Milan, Department of Economics, Management and Quantitative Methods (DEMM))

A map of discontent: economic distress or lack of public services? *

Marco Fregoni† Marco Leonardi‡

May 4, 2024

Abstract

Similarly to other countries, recent Italian parliamentary elections have revealed growing populist attitudes. We investigate whether this political discontent is explained by economic distress or by the deprivation of public services using new data on tribunal and hospital closures which we consider exogenous. To identify economic distress in a municipality we use the cost of job loss of residents who work elsewhere, outside the municipality borders. We find that hospital closures are significantly related to the share of populist votes at the municipality level in the election years 2008, 2013 and 2018 while economic shocks identified by the cost of job loss are weakly related.

JEL Codes: R12, R51, D72

Keywords: cost of job loss, populist voting, inner areas, populism, local public spending

*The views expressed in the article are those of the authors only and do not involve the responsibility of the Italian Social Security Institute (INPS). We are grateful to Giovanni Mastrobuoni, Simone Ferro and Eleonora Patacchini for their helpful comments. This project was realized thanks to the VisitINPS Scholars programme. We are furthermore grateful to the INPS Research Division, in particular Edoardo Di Porto, Maria De Paola, and Paolo Naticchioni, for providing assistance with data access.

†World Bank, EMNPV. E-mail: mfregoni@worldbank.org

‡University of Milan, Department of Economics, Management and Quantitative Methods (DEMM). E-mail: marco.leonardi@unimi.it

1 Introduction

There is a recent literature on places that "don't matter" which claims that the real cleavage in today's societies is not much between rich and poor but between declining regions against more prosperous ones (Gordon, 2018; Rodriguez-Pose, 2018). Still today there are many examples of this conflict which initially gained much visibility with the Brexit vote in the UK, the election of Donald Trump in the USA in 2016, and the "Jilet Jaunes" phenomenon in France in 2018-2019. The revolt of the periphery against the centre has taken the shape of the electoral vote but the elections results have probably followed a period of economic distress that affected peripheral (remote) areas more than central ones. Much of the territorial differences have cumulated during the years of the economic crisis after 2008 and the growth years from 2014 to 2018 did not make up the difference.

But is the economic distress or the lack of public services that explains the the share of votes for populist parties in remote areas? There is an obvious empirical issue regarding the endogeneity of "economic distress" and "lack of public services" with respect to voting results. We have to use variables that are not obviously correlated with unobserved variables determining the electoral results at the municipal level. To this extent, we define "economic distress" referring to the literature on the cost of job loss.[1] The cost of job loss in the literature corresponds to the wage cost associated to a firing for economic reasons and is defined as the difference between the wage before and after job loss upon re-employment. Typically this literature tackles the issue of endogeneity using mass layoffs (more than 30% of the workforce in a firm) believing that the separation of an individual from a firm is exogenous if it is part of a mass layoff for economic reasons. We instead use the (much better) information on individual and collective layoffs for economic reasons which is available only in administrative data.

Ideally one would like to map individual voting behaviour to individual job loss but, since this is impossible for privacy reasons, we use the average value of the cost of job loss at the municipality level as an exogenous measure of local economic distress and relate it to the general elections' results in 2008, 2013 and 2018.[2] To avoid endogeneity we use as instrument the average cost of job loss over those residents of each municipality who work and lose their jobs outside the municipality.

We exploit the fact that individuals vote in the place of residence but a certain percentage

[1] Since Jacobson et al. (1993) a burgeoning literature has estimated the cost of job loss and its sources (Lachowska et al., 2020; Raposo and Carneiro, 2021), for the Italian case we rely on Leombruni and Serti (2013) and Mossucca (2016).

[2] We would like to use the elections results of 2022 but the cost of job loss in 2022 cannot be calculated yet. Guiso et al. (2024) in a recent paper use survey data on individual voting behaviour and show a significant role of economic insecurity measured at the individual level.

of them work in a different municipality therefore their cost of job loss reflects the effect of shocks affecting a different municipality.

As an exogenous measure of "lack of public services" at the municipal level we use data on tribunal and hospital closures (reduction in the number of available hospital beds) between 2010 and 2022. Around 30% of tribunals were closed in 2012 as an effect of a law that imposed closures of small and inefficient tribunals (Canzian et al., 2021). Many small hospitals were closed in the course of the 2010s with the purpose of keeping only large and efficient structures. Regressing these measures of "economic distress" and of "lack of public services" on electoral results we find that closures of tribunals and hospitals explain more of the variance of the share of populist vote than the cost of job loss.

Our paper is mainly related to the empirical literature on the determinants of populist voting. Most papers focus on globalization shocks and the uneven distribution of the cost of the Great Recession in explaining the geography of the vote (Rodrik (2018); Walter (2021). Rodríguez-Pose et al. (2021) show that the rise in votes for Trump in 2016 was the result of long-term economic and population decline in areas with strong social capital. Alabrese et al. (2019) and Colantone (2018) show that geographical heterogeneity plays an important role in explaining Brexit votes. Among other recent contributions, Dijkstra et al. (2020) and Rodríguez-Pose et al. (2024) show that the anti-EU vote is the consequence of a local industrial decline and regional development traps, Van Leeuwen et al. (2020) suggest that local unemployment is important in explaining populist voting across Europe, while Mantegazzi (2020) highlights the role of migration flows in determining the Swiss geography of discontent. Other papers point to geography or institutions: Florida (2021) looks at population density while Diaz-Lanchas J. (2021) underlines the role of the perception of institutions thus pointing to public service deprivation. This last explanation is much less researched but has seen more attention in the Italian literature which for historic reasons has always paid attention to geographic differences in the provision of public goods. An explanation based on the lack of public services is plausible also for other countries.

Regarding Italy Albanese et al. (2022) study the role of EU regional funds in offsetting populist views, while Di Matteo D. (2021) show that unemployment, long-term cultural change, and immigration are the main determinants of discontent at the municipality level. Barone (2021) analyze empirically the role of trade globalization in shifting the electoral base towards populism. Faggian A. (2021) and Levi E. (2020) show that both individual and regional economic and social factors predict populist votes in Italy. Cerqua A. (2021) shows that the geography of discontent is shaped by the interaction between individual- and territorial-level predictors and that economic decline is not the major catalyst for anti-system voting.

Similarly, Cremaschi and Vries (2022) suggest that the 2010 reform which forced municipalities to jointly manage local public services, reduced public service provision and boosted the vote share of far-right parties.

We contribute to the literature running a race between two concurrent explanations: adverse economic shocks versus lack of public services. We provide an exogenous variation for both explanations. Differently from Barone (2021) we use layoffs instead of competition from China as exogenous variation for the economic reasons of the crisis. A measure of economic distress based on (exogenous) job loss and income reduction has a different source of identification rather than a measure based on Chinese competition which is valid only for the tradable sector. Instead of the 2010 reform of public services as in Cremaschi and Vries (2022) we use two direct measures of the deprivation of services: actual closures of tribunals and hospitals and the resulting distance of each municipality from the closest service. These data on tribunals and hospital closures are new.

Our results indicate that an increase in the average dependent income (instrumented with the cost of job loss) in a municipality strengthens support for populist parties at the municipal level: a one percentage point increase in the (instrumented) dependent income entails a rise in the share of the populist vote of 1.2%.

A one percent increase in the distance from the next hospital (142 meters, over an average distance of 14 km, see Table 1) entails a rise in the the populist vote share equal to 0.76% while a one percent increase in the distance from the next tribunal (230 meters over an average distance of 23 kilometers) has an effect of 0.64%. Deprivation of public services explains much more of the total variance of populist vote across municipalities than economic shocks because over the decade 2008-2018 "remote areas" have seen a 28% increase in the distance to hospitals (4 km, see Table 3, over the average of 14 km) and a 17% increase in the distance to tribunals (again 4 km over an average of 23 km) while "centres" have not seen any changes in their distances to services. Remote areas have experienced a slightly higher increase in average dependent income than "centres" in the decade 2008-2018 (7% versus 4%, of course remote areas start from a lower level) and a similar evolution in the average cost of job loss (Figure 2) while the incidence of job loss has been much higher (Figure 1).

To measure the remoteness of a municipality we use the 2011 definition of "remote area" which takes into account the presence of three types of services: railway transport connections, hospitals and schools Barca (2011). This definition, which has not changed until very recently in 2023, divides municipalities in "Centres" "Belt" and "Remote" according to the distance from these three types of public services in 2011.

In Section 2, we discuss the estimates of the cost of job loss. In Section 3 we describe

the data on populist vote and the distance between each municipality and the next hospital and the next tribunal. In Section 4 we show the results of the relationship between votes for populist parties and measures of economic distress and deprivation of public services. Section 5 concludes.

2 INPS Data and the Cost of Job Loss

To build our measure of the cost of job loss, we draw data from the archives of the Italian Social Security Institute (Istituto Nazionale di Previdenza Sociale, INPS) covering the population of employers and employees in the private non-agricultural sector of the Italian economy. The main source of information is the form that employers have to fill in order to pay state pension contributions for their employees. In this form employers report the gross monthly take home pay, net of labor income taxes and pension contributions levied on the employee. Besides the amount of gross monthly pay, for each employment spell the data report total working days, initial and end dates and broad occupational category (apprentices, blue collar, white collar or manager). Demographic information on workers include gender and year of birth, but, as typical with many administrative sources, do not include education. This is supplemented with employer-level information about industry, location, date of establishment and date of closure. We use plant-level data on the employer side. For each person and each year we exclude employer-employee matches lasting less than 8 working weeks. The resulting dataset matches all employers and employees of age in the 25-55 range between 2005 and 2020, including around 5 million firms and 15 million workers, totalling 199 million observations over the period. We keep only open-ended contracts in the sample as displacement and cost of job loss for temporary contracts is hard to define.

The literature on the cost of job loss usually refers to mass layoffs defined as firms with more than 50 employees shedding 30% or more of their workforce from one year to the next (Farber, 2017; Hall and Kudlyak, 2019; Huttunen et al., 2018). Given the small size of the average Italian firms, instead of following this route which would leave us with a tiny sample of firings among residents of small municipalities, we exploit a unique characteristic of our administrative data which gathers the reason for the firing. We consider only those workers fired for economic reasons in an individual or a collective firing.[3] The firing for an economic reason typically occurs for reasons exogenous to the individual will.

Figure 1 shows the evolution of the percentage of displaced workers over time: the share

[3]The types of firing are economic or disciplinary. Economic firings can be individual or collective, the only difference being that 5 or more firings in the same year must follow the procedure of collective firings which, different from individual firing, require a role for the unions.

of total workers fired for economic reasons hovers around 5% in the years 2005 to 2013 with a peak in correspondence of the double crisis of 2008 and 2011, then it goes steadily down to 1% during the recovery years 2014-2020.[4] The incidence of job displacement might seem modest in any given year, but it cumulates to a large number during severe downturns. For example, summing the job displacement rates in Figure 1 from 2008 to 2013 yields a cumulative displacement rate of more than 20 percent. The share of displaced workers in remote areas is higher during 2005-2013 and then converges to the same percentage of other more central areas during the recovery. From this first picture it looks like that remote areas were actually hit harder by both the 2008 and then the 2011 recession.

One natural question about studies based on administrative data is how the earnings loss results depend on the definition of job displacement and the choice of control groups. We follow Bertheau et al. (2023) in estimating the earnings effects of job displacement: we compare the earnings path of workers who experience job displacement with the earnings path of similar workers who did not separate during the same time period, while controlling for individual fixed effects and differential earnings trends. The equation of interest is the following

$$Y_{it} = \sum_{k=-2}^{4} \gamma_k 1\{t = t_i^* + k\} + \sum_{k=-2}^{4} \theta_k 1\{t = t_i^* + k\} \times Displaced_i + \beta X_{it} + \gamma_i + \delta_t + \varepsilon_{it} \quad (1)$$

outcome variable Y_{it} is real annual earnings of individual i in year t in 2000 euros (deflated using the consumer price index), γ_i are coefficients on worker fixed effects, δ_t are coefficients on calendar year fixed effects, X_{it} is a square polynomial in the age of worker i at year.[5] $\theta_k 1\{t = t_i^* + k\}$ are dummy variables equal to 1 in the worker's $t_i^* + k$ year before or after his displacement in year t^*, and zero otherwise. Given the presence of year effects and worker fixed effects in equation 3, the coefficients θ_k measure the time path of earnings changes for job separators from 2 years before and up to 4 years after a displacement, relative to the baseline and relative to the change in earnings of the control group. The baseline consists of the 2 years before displacement. For the displacement year t regression sample, the control group consists of workers not separating between t and t + 4 (non separators).

Figure 2 plots the coefficients θ_k for $k = 1$ (the year immediately after separation) for each separation year t^*. The average earnings losses are large and very dependent from the

[4] To qualify as a job displacement event in $t = t^*$, we also require that the separation be from the worker main job (only open ended contracts), defined as the one that accounts for the largest share of her earnings in $t - 2$. To express job displacements as a rate in Figure 1, we divide by the number of workers 55 or younger in $t - 2$ with permanent contracts.

[5] Due to data limitation, we consider only workers who leave and re-enter the non-agricultural private sector, excluding the possibility of finding employment in agriculture or the public sector.

business cycle. In year 2009 the average earnings loss of displaced workers relative to pre-displacement earnings and relative to the control group is -60%. These results are larger than other estimates from the US. Overall, a central finding in previous research is that job displacement leads to large (and long lasting) earnings losses, especially under weak labor market conditions. Data from the US, both from administrative data and from surveys (the Displaced Worker Supplement, DWS), show earnings losses for persons who lost jobs and got reemployed during the period 2007-2009, around 20 percent lower than on the previous job (Farber, 2015). But these are survey data and are estimates on men only, estimates on women and on administrative data yield higher losses.[6] Our results probably also reflect hours worked (especially for women).[7]

Figure 2 also plots differences across central and remote areas. While job displacement rates are very different in remote areas rather than in central areas, earnings losses appear to be similar. The Figure is the result of different regressions of equation 1 in different areas. Earnings losses in remote areas refer to individuals working and losing their jobs in remote areas rather than to individuals residing in remote areas and working somewhere else. In other words in Figure 2 we average the coefficients indicating the cost of job loss θ_k over the location of the place of work (municipalities in remote areas, intermediate or central) rather than the residence. When we discuss the instrumental variable identification, we will restrict the sample to workers residing in remote areas but working (the control group) and losing their jobs (the treatment group) outside their municipality of residence. We use a unique feature of our employer-employee matched data: from individual data we draw the information on the place of residence and work.[8]

[6] Comparing the evolution of annual earnings for displaced workers with that of a control group of similar workers who did not separate in the displacement year or the next 2 years, Davis and Von Wachter (2011) find that displacements led to average annual earnings losses relative to the control group of more than 30 percent of pre-displacement annual earnings.

[7] Previous evidence (for example, Farber (2017)) suggest that the bulk of earnings losses after job displacement reflects reductions in hours worked rather than wage rates. To net out the effect of hours we could use daily wages (not shown). The median daily wage loss moves with the business cycle, hovers around -5%, it is declining (more negative) in the post-2009 crisis period and it reaches -10% in 2011 and then improves in later years. The daily wage loss is defined as the log difference of the daily wage one month before job loss for economic firing and one month after re-employment.

[8] With these data we can also build a measure of the time to find a new job after displacement and of the distance between the place of residence and the workplace.

3 Data on votes and public services

For the general parliamentary elections from 2008 to 2018 we gather information on the votes for each party, only for the lower house and only for the seats assigned by the proportional rule.[9] Data on election outcomes for each municipality (around 8000) come from the Ministry of Interior.

We identify populist parties following Barone (2021) who in turn rely on the classification provided in Inglehart and Norris (2016) from 2013 onwards and integrate with previous data back to 2008 (due to lack of data on public service provision we cannot go further back in time). The basis is the 2014 Chapel Hill Expert Survey (CHES) in which 337 political scientists are asked to rate the positioning of 268 parties (those with seats in Parliament) in 31 European countries on a number of different policy issues. Experts answers to 13 selected questions are mapped, by means of factor analysis, into scores and a party is labelled as populist if the standardized sum of its scores related to cultural aspects is above a given threshold. Italian parties coded as populist, on the occasion of the 2013 elections, are the Northern League (Lega Nord), the Five Star Movement (Movimento Cinque Stelle) and the Brothers of Italy (Fratelli d'Italia). Besides these three parties,integrating back in time the list ultimately also includes the National Alliance (Alleanza Nazionale), the Italian Social Movement (Movimento Sociale Italiano), the Tricolor Flame (Fiamma Tricolore), the Right (La Destra).

At the end we have a dataset with the share of populist vote in election years 2008, 2013 and 2018 in around 8000 municipalities.

3.1 Data on tribunals and hospitals

The Italian judiciary system is structured in districts that coordinate the judicial activity of several tribunal courts where a public prosecutor's office operates. Before 2012, the activity of each tribunal court was supported by local branches located in the court's reference area. As for the territorial organization each province of Italy has at least one court. The goal of the 2012 reform was the improvement of the efficiency of Italian tribunals: The number of proceedings managed by very small tribunals was well under the efficiency threshold (Canzian et al., 2021). The law proposed the suppression of 45 tribunals and their merge with bigger courts, and the closure of all the local branches. The criteria applied to the closure decision

[9] The Italian parliament is composed of two houses: the Chamber of Deputies and the Senate of the Republic which have identical functions. The Chamber of Deputies has 630 members, the Senate has 315 members. The share of seats assigned by proportional rule varied across times as the electoral law was changed in 1993, 2005 and 2017 always immediately prior to general elections, the proportional share of seats always remained prominent.

were: population of the area referring to the court; number of incoming proceedings; number of employees of the court and the workload. All the courts below the average of these parameters should have been closed [10]. On top of these factors, the infrastructure endowment, the rate of organized crime and the minimum dimension of the served area (corresponding to 200.000 inhabitants) were also considered. Eventually, the reform determined the closure of all the 220 local branches and 26 tribunals out of 165 (Canzian et al., 2021). We have data on geolocalized tribunals from 2010 to 2020.

The same can be said of hospitals even if the 2015 decision to close some of them remained on paper. Nonetheless, many of them during the 2010s vastly reduced their beds or merged with bigger hospitals with the result of the complete closing of the peripheral branches: between 2010 and 2019, more than 600 branches completely eliminated the offer of beds. We use data from the Ministry of Health to provide a measure of the resources available for delivering services to inpatients at the municipality level from 2010 to 2019 in terms of number of open hospitals and number of beds that are maintained, staffed and immediately available for use. They include curative or acute care beds, rehabilitative care beds, long-term care beds and other beds provided by both public and private-public hospitals. In our model, we measure the distance to the closest hospital that has available beds (greater than zero). For both tribunals and hospitals we produce a variable that represents for each municipality the distance from the closest tribunal and the closest hospital.

Table 1 shows the descriptive statistics. Interestingly, both the dependent variable (share of populist vote) and the regressors (distance to the nearest tribunal and hospital) display large variability: the standard deviation is more than half times the mean. Some municipalities reach shares of populist vote over 80% while others have less than 10%. The distance to the next hospital and tribunal in "central" municipalities is obviously very low in kilometers. We add to the table some information on the composition of the population at the city level (share of employed workers and pensioners and their average income). The data on municipalities characteristics come from the Ministry of the Interior and refer to 8002 municipalities over the three electoral years 2008, 2013 and 2018.

Figures 3 and 4 show graphically the means in the final year (2018) and the changes 2008-2018 of the main variables if interest divided between "central", "belt" and "remote" areas. The figure shows that remote areas are scarcely populated and have larger shares of retirees in their population, have much lower levels of immigrant population (however they see a much

[10] To establish criteria, averages were determined from courts located in provincial capitals. The estimated averages were 363,769 inhabitants for population, 18,094 cases for incoming proceedings, 28 magistrates, and a workload of 638.4. Based on these benchmarks, 45 courts that reported figures below all these thresholds were classified as eligible. Nevertheless, some exemptions exist. For more details see Canzian et al. (2021).

higher increase over the decade, Figure 4). Remote areas have lower average dependent income and greater distance form tribunals (35 km in remote areas on average versus 13 km in central areas) and hospitals (23 km in remote areas versus 1 km in central areas).[11] The changes over time in the distance from tribunals and hospitals further penalized remote areas (+4 km in ten years, both for tribunals and hospitals, on average) however neither the change in average dependant income nor the mean and the decadal change in the share of populist votes seem to be very different between central and remote areas (Figure 3).

3.1.1 The Classification of Remote Areas

We use a classification of "Central", "Belt" and "Remote" areas as of 2011, before the changes in public services provision considered here could change the ranking of municipalities.[12] Cities are ranked in centre, multi centre, belt, intermediate, remote, ultra-remote measuring the distance from services such as hospitals and schools (Barca, 2011). No demographic or income per capita criteria are applied: all 8002 Italian municipalities are mapped relative to travel-time to these Service Centres in 2011. In detail a city is a "centre" or "multi-centre" if it has (jointly) an exhaustive range of secondary schools, at least a 1st level DEA (specialized hospital) and at least a "Silver-type" railway station. A "belt" city is up to 20 minutes far by car; an "intermediate" municipality is between 20 and 40 minutes; a "remote" municipality between 40 and 75 minutes and an "ultra-remote" municipality over 75 minutes of travel time from a service centre. For convenience we aggregate "centre" and "multi-centre", "belt" and "intermediate", "remote" and "ultra-remote".

This measure does not take into account demography or income, but captures the idea that urban centres may be big in terms of population (or small and rich) but poor in terms if services. The Italian territory is characterized by a network of urban centers which offer a wide range of essential services like healthcare, education, and transport. These centers represent a 'point of convergence' for people living in remote areas. The distance from these urban networks prevents them from benefiting of these essential services and increases the sense of social exclusion affecting negatively their quality of life.

In Italy inner areas cover almost the 60% of the whole national territory embracing about

[11] We will read in the next section that the definition of "central" and "remote" areas is based itself on the distance to the nearest hospital (but not to the nearest tribunal), however the definition is taken in 2011, before the reduction in the number of tribunals and hospitals.

[12] However we do not need our definition being exogenous to economic or population changes: we do not use the classification in our regression, we estimate our equation on all municipalities and then we use the changes in characteristics typical of remote areas to characterize the effects of changes in public service provision and economic conditions on populist voting.

the 23% of total population. They are equally present in all regions. To give an example Milano and Roma are Single-Municipality Service Center, Cinisello Balsamo is a Multi-Municipality Service Center, Chiavenna and Amatrice are remote municipalities and Bormio and Ponza are ultra-remote. Clearly this definition of remoteness of 2011 has nothing to do with income of the residents (Bormio and Ponza are rich municipalities) rather with the lack of public services.

4 Econometric specification and results

We relate the voting results in general elections to the measure of economic distress and of lack of services.

The equation of interest is the following

$$Y_{ct} = \beta_0 + \beta_1 \ DepIncome_{ct} + \beta_2 PublicServ_{ct} + \beta_3 X_{ct} + \gamma_c + \delta_t + \varepsilon_{ct} \tag{2}$$

where Y_{ct} is the share of populist vote in election at time t (2008, 2013, 2018) in municipality c. $DepIncome_{ct}$ is average dependent employee income taken as a measure of the economic situation for residents in municipality c. $PublicServ_{ct}$ is the vector of measures of lack of public services i.e. the distance of municipality c from the next tribunal and the next hospital. X_{ct} is a set of time-varying controls of the composition of the resident population (population, share of pensioners, share of employed workers, share of immigrants). We also control for time and municipality fixed effects.

In equation 3 we control for municipality-level time-invariant heterogeneity, however, endogeneity might arise primarily from omitted municipality-period idiosyncratic shocks. For example, suppose that a negative sectoral shock hits the domestic economy: if the spatial distribution of the affected industry is not uniform (as is often the case), the shock may disproportionally worsen the labor market of the municipalities specialized in that industry, so generating a populist reaction at the polls; at the same time, the negative sectoral shock may reduce dependent income. In such a case, the OLS estimate for β_1 would be biased upwards. On the other hand, measurement error may generate downward bias.

To tackle the endogeneity of dependent income at the municipality level, we use as instrument the cost of job loss of workers who work outside their municipality of residence i.e. we estimate equation 1 restricting the sample to residents in municipality c who work (the control group) and lose their jobs (the treatment group) outside municipality c.

The underlying idea is that the cost of job loss of this share of the population captures an exogenous component because it affects residents that work elsewhere and therefore are

not affected by labour market shocks in their municipality of residence. At the same time, we assume that the cost of job loss affects the populist vote only through its effect on dependent income. This latter assumption might be invalidated if job loss has other effects on voting behaviour that do not run through income (psychological for example).

4.1 IV

Figure 5 shows that small municipalities have a larger share of workers who work outside their municipality of residence. The relationship is monotone up until very large cities where the share drops sharply: very small municipalities in the first decile of the population distribution have 90% of their workers working outside, but also very big cities still have 40% of workers working outside the municipality border. Our identification assumption is that the cost of job loss of workers residing in municipality c but working elsewhere is not influenced by the demand shocks that also affect local employment in municipality c.[13] As it is not possible to directly test this identifying assumption, we present suggestive evidence by examining the correlation between employment in municipality c and its pre-trends and our instrument. To this extent we estimate the following equation

$$costJL_{ct} = \beta_0 + \beta_1 Employment_{c(t-x)} + \beta_2 S_{ct} + \beta_3 X_{ct} + \gamma_c + \delta_t + \varepsilon_{ct} \tag{3}$$

where $Employment_{c(t-x)}$ is total employment in municipality c at time $t-x$ and $costJL_{ct}$ is the cost of job loss of workers residing in municipality c but working elsewhere i.e. it is the weighted average with weights the distance in km between the municipality of residence and the municipality of work (with weight zero to those living and working in the same municipality).[14]

If our instrument is credible, we expect to see a weak correlation between the instrument and the pre-trends. The results are presented in column 1 and 2 of Table 2 and reassuringly indicate that the instrument does not predict the pre-trends (in t-1 and in t-3) in employment, which is consistent with the instrument being uncorrelated with unobserved and persistent

[13] Even if somebody works outside her municipality, neighboring municipalities are likely subject to the same labor market shocks. To respond to this possible criticism to the instrument, we use as an alternative IV the cost of job loss of residents in municipality c who work in a different Local Labour Market (LLM). This share is also declining monotonically with population but obviously starts from lower values: only 40% (20%) of workers who reside in a very small (very large) municipality c work in a different LLM.

[14] The IV variable can be built in several possible ways: the unweighted average of the cost of job loss for those working in a different municipality; the weighted or unweighted average of those working in another LLM. Obviously the LLM is much larger than a municipality and should take into account common shocks to several different municipalities. On the other hand people working in a different LMM than their LLM of residence may be more selected.

economic factors affecting employment trends in municipality c.

Table 3 shows the correlation between the instrument and the endogenous variable in different municipalities grouped in quartiles of the share of residents working outside the municipality of residence. The Table shows that the instrument is identified by the quartile of municipalities with the largest share of residents working in a different municipality (usually small municipalities with few firms and a weak productive base).

4.2 Results

In Table 4 we show the results of the OLS and IV estimation of equation 3. In column 1 and 2, OLS coefficients yield the expected signs: the higher the distance from public services (tribunal and hospitals) the higher the share of populist vote; the lower the average dependent income in the municipality, the higher the share of populist vote. The share of workers in the population and the share of pensioners are negatively correlated with the share of populist votes consistently with the evidence of the young and unemployed more likely to vote for populists.

The reduced form in column 4 shows that the average cost of job loss of those residing in municipality c but working elsewhere is negatively correlated with the share of populist vote. According to column 5 in Table 4, a one percent increase in the average cost of job loss entails a rise in the share of the populist vote by 1.2% percentage points (over a mean of 34%, standard deviation 20%).[15] The magnitude of the impact is non-negligible, especially if one takes into account that the vote response regards all voters and not just those working as dependent employees in the private sector who might be directly affected by job loss as measured here. However the first stage in column 3 shows a F test of 7.48 and the power of the instrument is not very strong.[16] Furthermore Figure 2 and 3 show that there is no big difference in the decadal change of the cost of job loss or of the average dependent income across "central" versus "remote" municipalities: average dependent income increased by 4% in "central" municipalities and by 7% in "remote" ones over a decade (however "remote" municipalities have an average dependent income still 20% lower than "central" ones).

[15] In Table 1 a 1% increase over an average loss of 9583 euros (i.e. -52% of an annual income of 18359 euros) corresponds to around 96 euros)

[16] In Table 4 the instrument is built as the weighted average of the distance in km between the municipality of residence and the municipality of work (those who work and live in the same municipality get zero weight). The instrument (i.e. the cost of job loss of residents working outside the municipality) can be calculated in different ways: in results not shown in the paper, the unweighted average cost of job loss yield a insignificant coefficient of -0.015 (pvalue=0.12); the weighted average of those working in a different LLM a coefficient of -0.008 (pvalue=0.06); the unweighted average LLM of -0.011 (pvalue=0.14).

While the effect of average dependent income is weak and varies with the exact specification of the IV variable, the effect of the distance of hospitals and tribunals is more solid (more hospitals than tribunals). A one percent change in the distance from next hospital (142 meters from the table of descriptive statistics) entails entails a rise in the the populist vote share equal to 0.76%. This means that in remote areas where the increase in the distance over 20 years has been of 4 km (see Figure 3), this corresponds to a increase of 28% in the distance and to a 21.9% increase in the share of populist vote.

A one percent increase in the distance from the next tribunal (229 meters) has an effect on the share of populist vote of 0.64%. In remote areas where the increase in the distance over 20 years has also been of 4 km, this corresponds to a 17.5% increase in the average distance and 11.2% increase in the populist share of the vote. The effect of the distance of tribunals on the share of populist votes is weaker across specification, however it is likely that the distance of tribunals affects more the efficiency of firms rather than the happiness of voters.

The result regarding the importance of deprivation of public services is in line with other evidence on Italy and elsewhere. Barone (2021) proxy for public spending at the municipal-year level is based on total national expenditure. They find that municipalities more exposed to public spending exhibit lower support for populist parties. Cremaschi and Vries (2022) use the 2010 reform of public services to measure public service deprivation at the municipal level, and show that it is associated with higher levels of far-right support. We contribute to this line of research with new data on specific services (hospitals and tribunals) and with a new identification strategy that exploits labor market shocks happening elsewhere but affecting residents.

5 Conclusions

We argue that public service deprivation and in particular hospital and tribunal closures help explain the distribution of electoral support for populist parties across municipalities. Public service provision is one of the most direct ways in which politics affects citizens lives but is hard to distinguish the effect of public service deprivation from the effect of economic shocks.

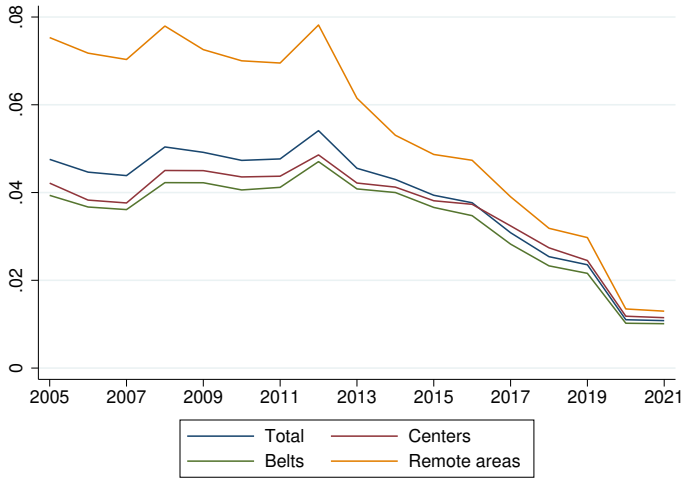
Our findings suggest that public service deprivation may help explain support for populism. Discontent about hospital and tribunal closures and in general about being neglected by the state might motivate people to support populist parties. On the contrary economic shocks identified with the cost of job loss of residents working outside the municipality of residence appear to be a weaker explanation.

This last result is important from the policy point of view because services can be restored

while layoffs are layoffs and it is difficult to restore economic activity where it is gone.

6 Tables and figures

Figure 1: Average incidence of job displacement by area over time.



Notes. Job displacements from the main job (only open ended contracts that accounts for the largest share of her earnings in $t-2$). Divided by the number of workers 55 or younger in $t-2$ with permanent contracts. "Centre", "belt" and "remote" areas defined in 2011, see text for details.

Figure 2: Average annual earnings loss one year after job displacement by area.

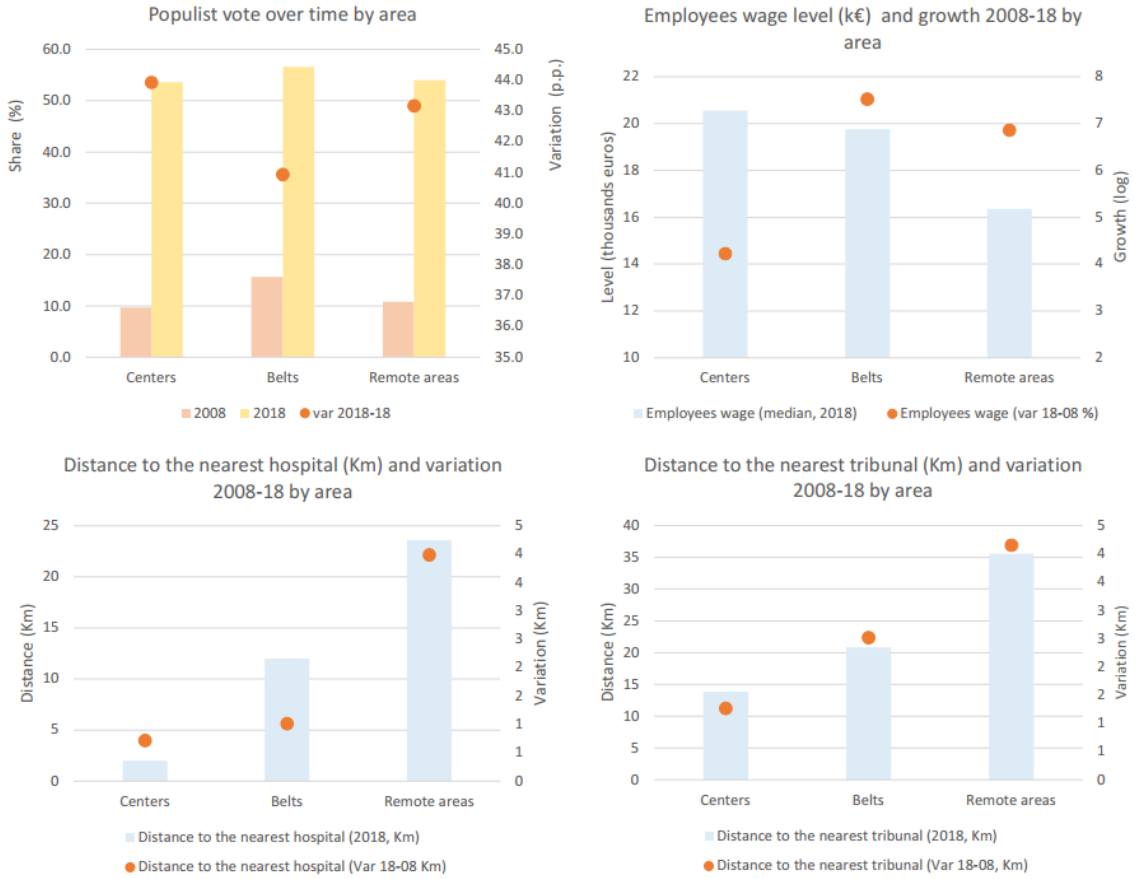
Notes. Plot of the coefficient θ_k for $k = 1$ for each separation year t^*. The plot represents average earnings losses of displaced workers, as estimated from displacement-year regression models of annual earnings for displaced workers and control group workers. See Equation 1 in text and the accompanying discussion for further details.

Table 1: Descriptive Statistics

	Mean	SD
Populist vote (% of votes)	0.349	0.197
Dependent income (euros)	18.359	3.710
Pensioner income (euros)	13.568	2.941
Dependent employees (% of population)	0.527	0.083
Pensioners (% of population)	0.405	0.078
Distance to the nearest hospital (km)	14.2	8.9
Distance to the nearest tribunal (km)	22.9	13.2
Share of economic firings (% of workers)	0.038	0.041
Cost of job loss	-0.412	0.301
Cost of job loss (sample of workers outside city of residence)	-0.522	0.331

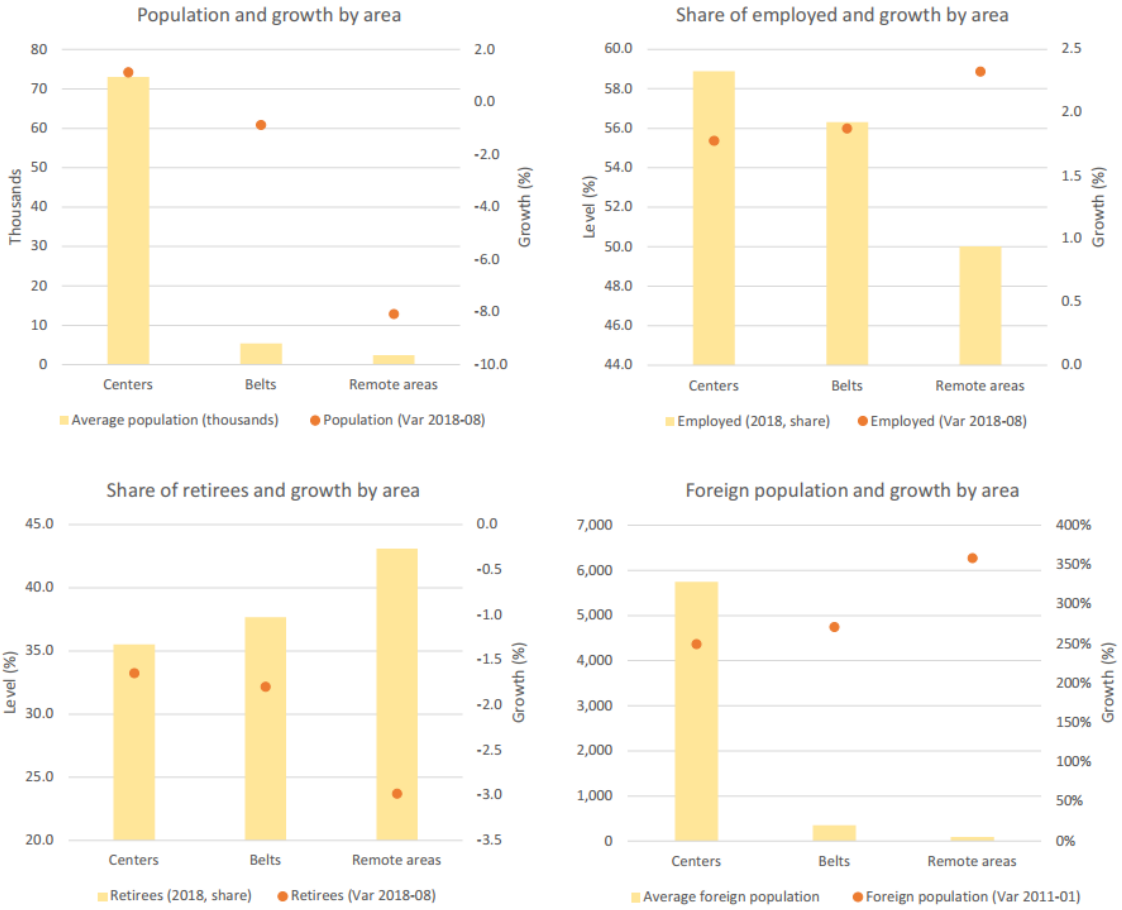
Notes. Unit of observation is the municipality N=8002. Averages over the year 2008, 2012, 2018. Data on electoral outcomes are provided by the Ministry of Interior; those on income and pensions are provided by the Ministry of Finance and Agenzia delle Entrate. Share of firings and cost of job loss are estimated on INPS data. Cost of job loss is the difference between yearly earnings one year after re-employment and one year before displacement. Separation must be from the main job (only open-ended contracts).

Figure 3: Populist vote, employees' wage and distance to the nearest tribunal and hospital over time by area of residence.



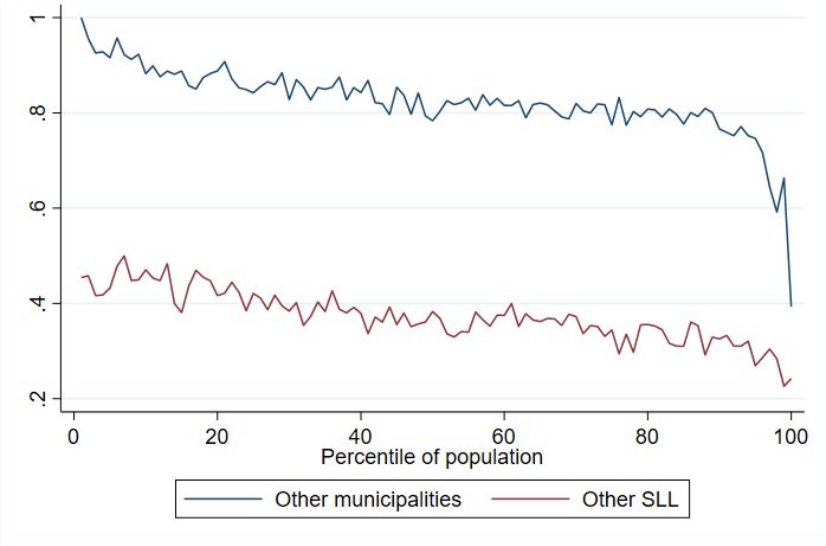
Notes. Histograms for 2018 values; scatters for variation over 2008-2018. All 8002 Italian municipalities are grouped relative to travel-time to Service Centres in 2011. A "centre" or "multi-centre" if it has (jointly) an exhaustive range of secondary schools, at least a 1st level DEA (specialized hospital) and at least a "Silver-type" railway station. A "belt" city is up to 20 minutes far by car to a "centre"; an "intermediate" municipality is between 20 and 40 minutes; a "remote" municipality between 40 and 75 minutes and an "ultra-remote" municipality over 75 minutes of travel time from a service centre. For convenience we aggregate "centre" and "multi-centre", "belt" and "intermediate", "remote" and "ultra-remote". Source: Ministry of Interior, Ministry of Finance and Agenzia delle Entrate.

Figure 4: Population characteristics and trends by area of residence.



Notes. Histograms for 2018 values; scatters for variation over 2008-2018. All 8002 Italian municipalities are grouped relative to travel-time to Service Centres in 2011. A "centre" or "multi-centre" if it has (jointly) an exhaustive range of secondary schools, at least a 1st level DEA (specialized hospital) and at least a "Silver-type" railway station. A "belt" city is up to 20 minutes far by car to a "centre"; an "intermediate" municipality is between 20 and 40 minutes; a "remote" municipality between 40 and 75 minutes and an "ultra-remote" municipality over 75 minutes of travel time from a service centre. For convenience we aggregate "centre" and "multi-centre", "belt" and "intermediate", "remote" and "ultra-remote". Source: ISTAT.

Figure 5: Share of workers working outside of the city of residence.



Notes. Share of workers with open-ended contracts who work outside their municipality of residence. Municipalities are ranked by population. Source: Italian Social Security Institute (INPS).

Table 2: Correlation between the instrument and past employment.

	Cost Job Loss (IV) (1)	Cost Job Loss (IV) (2)
Employed at t-1 (%)	0.178	
	(0.625)	
Employed at t-3 (%)		-0.0652
		(0.911)
Year dummy (Y= 2013)	-0.0933***	-0.168***
	(0.000)	(0.000)
Year dummy (Y= 2008)	0.0638***	0.0543***
	(0.000)	(0.000)
Constant	-0.512**	-0.314**
	(0.009)	(0.008)
N	20,891	20,823
R_a^2	0.0206	0.0405

p-values in parentheses. *$p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Notes. The dependent variable is the instrumented cost of job loss i.e. the coefficient $D_k t$ of equation 3 averaged in each city of residence c weighting by the distance between the municipality of residence and the municipality of the workplace. In other words the estimate is produced restricting the sample to workers (control group) and job losers (treatment group) outside their municipality of residence and weighting by the distance. In equation 3 the cost of job loss captures the difference between yearly earnings one year after re-employment and one year before displacement. Separation must be from the main job (only open-ended contracts).

Table 3: Determinants of employees income (log) by quartile of cities' share of employed working outside the city of residence.

	Employees income (log)			
	(Q1)	(Q2)	(Q3)	(Q4)
Cost job loss (IV)	-0.0268	0.0111	0.0242	0.0421**
	(0.164)	(0.453)	(0.140)	(0.002)
Distance to hospital (log)	-0.00170*	-0.000739	-0.000773	0.00439
	(0.032)	(0.620)	(0.790)	(0.410)
Distance to tribunal (log)	-0.00148	0.00449	0.00537*	0.00776*
	(0.187)	(0.149)	(0.036)	(0.017)
Employed (%)	-0.369***	-0.338**	-0.409***	-0.164
	(0.000)	(0.002)	(0.000)	(0.080)
Pensioners (%)	0.336***	0.442***	0.209*	0.212*
	(0.000)	(0.000)	(0.035)	(0.017)
Population (th.)	0.00000855	0.00383*	-0.00300	0.00229
	(0.961)	(0.015)	(0.094)	(0.594)
Foreign population (%)	0.285**	0.125	0.000210	-0.0390
	(0.002)	(0.055)	(0.998)	(0.461)
Year dummy (Y= 2013)	0.0341***	0.0406***	0.0451***	0.0550***
	(0.000)	(0.000)	(0.000)	(0.000)
Year dummy (Y= 2008)	0.0755***	0.0811***	0.0798***	0.0720***
	(0.000)	(0.000)	(0.000)	(0.000)
Cities FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
N	5186	5193	5113	4277
F	1.93	0.56	2.18	9.74

p-values in parentheses. *$p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Notes. The first stage regression of log dependent income on the cost of job loss is estimated separately on quartiles of the distribution of municipalities ranked by the share of workers working outside the municipality borders.

Table 4: Determinants of populist vote: OLS and IV estimates.

	OLS	OLS	1st stage	Reduced form	IV
Dist to hospital (log)	0.0106***	0.0103***	-0.00130	0.00926***	0.00766***
	(0.000)	(0.000)	(0.073)	(0.000)	(0.000)
Dist to tribunal (log)	0.00441*	0.00493*	0.00130	0.00479**	0.00640**
	(0.023)	(0.010)	(0.212)	(0.010)	(0.006)
Employed (%)	-0.357***	-0.408***	-0.292***	-0.562***	-0.924***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Pensioners (%)	-0.832***	-0.792***	0.294***	-1.245***	-0.881***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Foreign population (%)	-0.0963***	-0.0959***	0.0340	-0.218***	-0.176**
	(0.000)	(0.000)	(0.402)	(0.000)	(0.008)
Year dummy (Y= 2013)	0.181***	0.187***	0.0447***	0.181***	0.236***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Year dummy (Y= 2008)	0.410***	0.422***	0.0773***	0.415***	0.510***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Avg employees inc (log)		-0.015***			-0.012*
		(0.000)			(0.047)
Cost of job loss (IV)			0.022**	-0.000273*	
			(0.006)	(0.010)	
Constant	0.646***	1.083***			
	(0.000)	(0.000)			
N	21,940	21,940	19,801	19,801	19,801
F					7.48
R_a^2	0.904	0.905			0.812

p-values in parentheses. *$p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Notes. Unbalanced panel with municipality and year fixed effects. The dependent variable is the share of populist vote in municipality c in year 2008, 2013, 2018. The cost of job loss is estimated in equation 3 and captures the difference between yearly earnings one year after re-employment and one year before displacement. Separation must be from the main job (only open-ended contracts). The instrumented cost of job loss i.e. the coefficient θ_k for $k = 1$ (rescaled by the pre-displacement earnings) of equation 1 averaged in each city of residence c weighting by the distance between the municipality of residence and the municipality of the workplace. In other words the estimate is produced restricting the sample to workers (control group) and job losers (treatment group) outside their municipality of residence and weighting by the distance.

References

Alabrese, E., Becker, S. O., Fetzer, T., and Novy, D. (2019). The sources of the wage losses of displaced workers: the role of the reallocation of workers into firms, matches and job titles. *European Journal of Political Economy*, 56:132–150.

Albanese, G., Barone, G., and De Blasio, G. (2022). Populist voting and losers discontent: Does redistribution matter? *European Economic Review*, 141.

Autor, D. et al. (2019). Work of the past, work of the future. Technical report, NBER.

Barca, F. (2011). Alternative approaches to development policy. In *OECD Regional Outlook 2011 Building Resilient Regions for Stronger Economies*. OECD.

Barone, G., D. A. d. B. G. N. P. (2016). Mr. rossi, mr. hu and politics. the role of immigration in shaping natives' voting behavior. *J. Public Econ.*, 136:1–13.

Barone, G., K. H. (2021). Low-wage import competition and populist backlash: the case of italy. *Eur. J. Polit. Econ.*, 67.

Bertheau, A., Acabbi, E. M., Barceló, C., Gulyas, A., Lombardi, S., and Saggio, R. (2023). The unequal consequences of job loss across countries. *American Economic Review: Insights*, 5(3):393–408.

Canzian, G., Ferrara, A. R., et al. (2021). Judicial efficiency and banks credit risk exposure. In *Cesifo Working Paper Series*.

Cerqua A., Ferrante C., L. M. (2021). Electoral earthquake: Natural disasters and the geography of discontent. *GLO Discussion Paper Series n. 790*.

Colantone, I., S. P. (2018). The trade origins of economic nationalism: import competition and voting behavior in western europe. *Am. J. Polit. Sci.*, 62:936–953.

Cremaschi, S, P. R. M. C. and Vries, C. E. D. (2022). Geographies of discontent: How public service deprivation increased far-right support in italy.

Davis, S. and Von Wachter, T. (2011). Recessions and the costs of job loss. *Brookings Papers on Economic Activity*.

Davis, S. J. and Haltiwanger, J. (1992). Gross job creation, gross job destruction, and employment reallocation. *The Quarterly Journal of Economics*, 107(3):819–863.

Di Matteo D., M. I. (2021). Italian discontent and right-wing populism: Determinants, geographies, patterns. *Regional Science Policy Practice*, 13:371–396.

Diaz-Lanchas J., Sojka A., D. P. F. (2021). Of losers and laggards: The interplay of material conditions and individual perceptions in the shaping of eu discontent. *Cambridge Journal of Regions, Economy and Society*, 54:737–753.

Dijkstra, L., Poelman, H., and Rodriguez-Pose, A. (2020). The geography of eu discontent. *Regional Studies*, 54:737–753.

Faggian A., Modica M., M. F. U. G. (2021). One country, two populist parties: Voting patterns of the 2018 italian elections and their determinants. *Regional Science Policy Practice*, 13:397–413.

Farber, H. S. (2015). Job loss in the great recession and its aftermath: Us evidence from the displaced workers survey. Technical report, NBER.

Farber, H. S. (2017). Employment, hours, and earnings consequences of job loss: Us evidence from the displaced workers survey. *Journal of Labor Economics*, 35(S1):S235–S272.

Florida, R. (2021). Discontent and its geographies. *Cambridge Journal of Regions, Economy and Society*, 14:619–624.

Gordon, I. R. (2018). In what sense left behind by globalisation? looking for a less reductionist geography of the populist surge in europe. *Cambridge Journal of Regions, Economy and Society*, 11(1):95–113.

Guiso, L., Herrera, H., Morelli, M., and Sonno, T. (2024). Economic insecurity and the demand for populism in europe. *Economica*, 91(362):588–620.

Hall, R. E. and Kudlyak, M. (2019). Job-finding and job-losing: A comprehensive model of heterogeneous individual labor-market dynamics. Technical report, NBER.

Huttunen, K., Møen, J., and Salvanes, K. G. (2018). Job loss and regional mobility. *Journal of Labor Economics*, 36(2):479–509.

Jacobson, L. S., LaLonde, R. J., and Sullivan, D. G. (1993). Earnings losses of displaced workers. *The American economic review*, pages 685–709.

Lachowska, M., Mas, A., and Woodbury, S. (2020). Sources of displaced workers long-term earnings losses. *American Economic Review*, 110(10):3231–66.

Leombruni, Roberto, T. R. and Serti, F. (2013). The pecuniary and non-pecuniary costs of job displacement. the risky job of being back to work. *European Economic Review*, 61:205–216.

Levi E., P. F. (2020). An explanatory study of populism: The municipality level predictors of electoral outcomes in italy. *Economia Politica*, 37:833–875.

Manaresi, F. (2015). Net employment growth by firm size and age in italy. *Bank of Italy Occasional Paper*, (298).

Mantegazzi, D. (2020). The geography of political ideologies in switzerland over time. *Spatial Economic Analysis*, 16:378–396.

Mossucca, R. (2016). Job displacement: Comparative evidence for italy. *Available at SSRN 3012142*.

Raposo, Pedro, P. P. and Carneiro, A. (2021). The sources of the wage losses of displaced workers: the role of the reallocation of workers into firms, matches and job titles. *Journal of Human Resources*, pages 786–820.

Rodriguez-Pose, A. (2018). The revenge of the places that dont matter (and what to do about it). *Cambridge Journal of Regions, Economy and Society*, 11(1):189–209.

Rodriguez-Pose, A. (2020). The rise of populism and the revenge of the places that dont matter. *LSE Public Policy Review*.

Rodríguez-Pose, A., Dijkstra, L., and Poelman, H. (2024). The geography of eu discontent and the regional development trap. *Economic Geography*, pages 1–33.

Rodríguez-Pose, A., Lee, N., and Lipp, C. (2021). Golfing with trump. social capital, decline, inequality, and the rise of populism in the us. *Cambridge Journal of Regions Economy and Society*, 14:475–481.

Rodrik, D. (2018). Populism and the economics of globalization. *Journal of International Business Policy*, 1:12–33.

Van Leeuwen, E., Vega, S., and Hogenboom, V. (2020). Does population decline lead to a populist mark-up? a case study of the netherlands. *Regional Science Policy Practice*, 13:279–301.

Walter, S. (2021). The backlash against globalization. *Annual Review of Political Science*, 24:421–42.