ONLINE APPENDIX

Without Roots

The Political Consequences of Collective Economic Shocks

Simone Cremaschi, Nicola Bariletto, and Catherine E. De Vries

Contents

A Institutional and Political Background

A.1 Timeline of Political Incumbents

In Table A.1.1, we report a timeline of the political incumbents at the two relevant levels of government (i.e., national and regional), including the government leader and their supporting coalition.

Table A.1.1: Timeline of Incumbent in National and Regional Government

Date	Event	National Incumbent	Regional Incumbent
March 2010	Regional Election		Nichi Vendola Partito Democratico (Centre Left) Sinistra Ecologia e Libertà (Far-left)
April 2013	National Election	Enrico Letta Partito Democratico (Centre Left) Popolo delle Libertà (Centre Right)	
October 2013	**Xylella Outbreak**		
February 2014	Cabinet Reshuffle	Matteo Renzi Partito Democratico (Centre Left)	
December 2016	Cabinet Reshuffle	Paolo Gentiloni Partito Democratico (Centre Left)	
May 2015	Regional Election		Michele Emiliano Partito Democratico (Centre Left) Sinistra Ecologia e Libertà (Far-left)
June 2018	National Election	Giuseppe Conte (I Mandate) Movimento 5 Stelle (Far Left) Lega (Far Right)	
September 2019	Cabinet Reshuffle	Giuseppe Conte (II Mandate) Movimento 5 Stelle (Far Left) Partito Democratico (Centre Left) Liberi e Uguali (Far Left)	
May 2020	Regional Election		Michele Emiliano Partito Democratico (Centre Left) Alleanza Verdi e Sinistra (Far Left)
February 2021	Cabinet Reshuffle	Mario Draghi Movimento 5 Stelle (Far Left) Lega (Far Right) Partito Democratico (Far Right) Forza Italia (Centre Right)	

A.2 Summary of Party Positions

To examine the positions adopted by the main political parties, we conducted an extensive review of national and regional newspapers throughout the outbreak period using the Factiva database. We summarize our findings below.

Partito Democratico (PD)

Since the outbreak, Xylella was a core policy area and narrative element for PD in Puglia. At the beginning of the the epidemic, PD affiliated politicians promoted a science-based approach and supported the eradication of olive trees and the establishment of buffer zones as the most effective way to prevent the spread of the disease (e.g., ANSA, 15/11/2014; Citynews, 29/04/2015; Brindisi Report, 15/10/2015). They also supported the 2015 Silletti Plan, the plan named after the special envoy appointed by the national

government (ANSA, 10/12/2015; La Repubblica.it, 29/09/2015), which mainly revolved around eradications and the use of chemical pesticides (La Repubblica.it, 29/09/2015). Already in this initial phase, however, there were some instances in which PD officials opposed recommendations made by scientists. For example, Blasi objected to the use of chemical pesticides to treat infected trees (Citynews, 21/02/2015). Finally, in this initial phase, PD representatives at the regional and national level frequently met with farmers and farmers associations (ANSA, 04/04/2015; Citynews, 29/04/2015; ANSA, 03/07/2015) and worked to protect their interests at the international level (e.g., when French authorities issued an embargo on plants from Puglia – Il Nuovo Quotidiano di Puglia, 06/04/2015).

After the election of Michele Emiliano, as as regional president (May 2015), he declared that Xylella would be one of the most important issues on his agenda (ANSA, 25/05/2015) and worked with Minister for Agriculture Martina (also from PD) to formally recognize Xylella as a natural calamity to enable affected farmers to gain access to national and EU emergency funds (ANSA, 21/07/2015). Emiliano also focused on cooperating with scientists and experts in finding a structural solution to the problem (Citynews, 06/11/2015).

Nevertheless, in December 2015, differently from other party officials who instead kept supporting the Silletti Plan (ANSA. 10/12/2015), Emiliano objected to the decision taken by the government to appoint a special envoy (ANSA, 10/12/2015b). As the Silletti plan was put on hold after becoming the object of a formal investigation carried out by public prosecutors in Lecce in December, Emiliano abruptly turned away from supporting eradications as the only way to counter the epidemic (Brindisi Report, 15/10/2015) to opposing them and blaming the EU for such a radical approach (Citynews, 19/12/2015; Corriere del Mezzogiorno, 03/09/2021). The regional president went as far as to actively side with public prosecutors in Lecce by joining the criminal proceedings as a civil party seeking damages (Il Foglio, 06/12/2018). Silletti himself would later blame Emiliano for having played a fundamental role in the spread of the disease in Northern Salento (Il Foglio, 06/12/2018).

In the regional council, Sergio Blasi was the main promoter of a law intended to stop alleged speculation on tree eradication (land grabbing) by preventing the authorization of construction works on land previously devoted to eradicated olive trees (Citynews, 19/12/2015; ANSA, 09/03/2016). This law proposal was likely driven by some form of skepticism towards eradications, which was the only scientifically recognized way to stop the spread of the disease. Blasi had the support of part of PD regional councilors and Emiliano (ANSA, 31/03/2016), but not all regional PD officials (ANSA, 10/03/2016). Most notably, the national government (headed by Renzi) opposed the law (on the ground that it would be in conflict with the Italian Constitution) (ANSA, 10/06/2016). The law was eventually deemed legal with the exception of one paragraph (ANSA, 05/04/2017).

In 2018, the EU stated that the Italian government (that is, the regional government responsible for active measures to counter the epidemic) was not doing enough in terms of olive tree eradications. Emilianos actions to slow down eradication procedures were blamed (Corriere del Mezzogiorno, 17/05/2018). PD officials and Emiliano supported the demonstrations organized by the Gilet Arancioni movement (basically, a grass-root farmers association) in early 2019 in Puglia to protest a lack of adequate support from the national government (then supported by a M5S-Lega coalition) with respect to the Xylella epidemic (ANSA, 06/01/2019). PD officials themselves lamented the government's inactivity and ineffectiveness (Askanews, 14/02/2019). In the following years,

flip-flopping became less pronounced within the party and the focus shifted from eradications (which were accepted by Emiliano, even denying ever opposing the Silletti plan Il Foglio, 06/12/2018; La Repubblica.it, 28/09/2020) to calls for the less divisive issue of increasing economic and bureaucratic resources (including EU funds in the Piano di Sviluppo Rurale) to compensate affected farmers (Citynews 31/03/2016, Il Nuovo Quotidiano di Puglia 12/11/2019, Corriere del Mezzogiorno 11/02/2020, La Gazzetta del Mezzogiorno 29/02/2020, ANSA 25/05/2020).

Fratelli d'Italia (FdI)

Fratelli d'Italia was not particularly active on the Xylella issue until 2017. After 2017, the party adopted a frame concerning Xylella that involved blaming the regional, or albeit less frequently, national and EU governments for the spread of the disease and an adequate crisis responses (La Gazzetta del Mezzogiorno, 08/05/2018; ANSA 07/05/2018). FdI party officials frequently lamented delays in the payment of reparations for affected local oil producers and alleged mismanagement of resources devoted to handle the epidemic (included in the Piano di Sviluppo Rurale Rural Development Plan, PSR) (ANSA, 07/06/2017; La Gazzetta del Mezzogiorno, 26/04/2018; ANSA, 30/08/2018; La Gazzetta del Mezzogiorno, 06/04/2019; La Gazzetta del Mezzogiorno, 02/10/2019; ANSA, 17/01/2020). In early 2019, the party supported the Gilet Arancioni movement, which protested the alleged inactivity of the regional and national governments in addressing the Xylella emergency (ANSA, 06/01/2019; Corriere del Mezzogiorno, 30/01/2019; AGI, 14/02/2019).

Meanwhile, the party failed to take a concrete stance on Xylella. The positions advocated by the party varied from being in favour of evidence-based recommendations to the denial of their usefulness. For instance, in May 2018, FdI national representative Saverio Congedo voiced support for mayors opposing a governmental decree mandating chemical treatment for olive trees (Citynews, 12/05/2018). By contrast, in an effort to signal their commitment to tackle the Xylella outbreak, FdI leaders convinced General Silletti to run as a candidate for a seat in the regional council in 2020 within FdI lists. Gneral Silletti, who had been appointed special envoy by the national government to handle the Xylella outbreak in 2015, is commonly identified as a major proponent of eradications. Silletti was not elected, but became a FdI member and was appointed head of the partys Agriculture Department, see ANSA, 10/08/2020; ANSA, 30/10/2021.

Lega

The stance taken by Lega on Xylella shifted between two positions; one aimed at achieving the support of farmers and other entrepreneurs in the agricultural sector, and another involving Lega party representatives opposing the eradication of infected olive trees (ANSA, 09/06/2016), especially when they perceived it was particularly opposed by local communities (Citynews, 10/05/2015). The Xylella outbreak was used to criticize meddling by EU institutions in the national agricultural sector (ANSA, 12/05/2016) (a delegation of Le Pens FN visited Salento, invited by Lega, in May 2016 ANSA, 20/05/2016), including the European Court mandating olive tree eradication in the Brindisi province in June 2016 (ANSA, 09/06/2016).

That said, especially in 2018 and 2019 when Lega member Gian Marco Centinaio became minister for Agriculture, Lega often criticized the regional government for not taking effective and drastic measures to contain the spread of the epidemic and for delaying the disbursement of PSR and other national funds (AGI, 20/05/2016; La Gazzetta del

Mezzogiorno, 16/02/2018; ANSA, 05/12/2018; ANSA, 09/03/2019; ANSA, 15/03/2019; ANSA, 05/09/2019; ANSA, 02/01/2020; AGI, 07/09/2020; ANSA, 31/08/2022). In 2018, Centinaio visited Salento and promised reparations would be paid and action would be taken (La Gazzetta del Mezzogiorno, 20/07/2018), and criticized the "anti-scientific" and "populist" stance taken by parties who initially denied that the Xylella epidemic was real (AGI, 24/07/2018). The same argument was used to criticize Emiliano – for instance, ANSA (03/10/2018) reports a statement by Andrea Caroppo (Lega regional coordinator at the time) that directly attacks Emiliano for being unwilling to eradicate olive trees. Similar endorsements of eradication were reiterated in the following months (often with the purpose of undermining the credibility of political opponents who had taken anti-eradication stances, e.g., ANSA 13/12/2018) (La Gazzetta del Mezzogiorno, 13/01/2019).

In January 2019, prominent regional party officials participated in the Gilet Arancioni demonstrations (partly organized against perceived inactivity by the national government of which Lega a member at the moment), and promised that they would work to disburse PSR reparation funds (La Gazzetta del Mezzogiorno, 06/01/2019; La Repubblica.it, 07/01/2019). A government decree providing financial assistance to counter the emergency followed, which was hailed as an important step forward by Lega representatives and the Gilet Arancioni movement, but still deemed to be insufficient by main farmers' associations such as Coldiretti (Corriere del Mezzogiorno, 09/03/2019).

Movimento 5 Stelle (M5S)

In the initial phases of the epidemic, M5S denied that the death of olive trees could be ascribed to the disease. It opposed the eradication of olive trees (regional councilor and agronomist Cristian Casili, while not denying that the disease existed, claimed that trees could be successfully treated without the need to eradicate them) and blamed the regional and national governments for their "incorrect approach" (e.g., ANSA 05/10/2015, Adnkronos 13/10/2015, Citynews 19/12/2015, Agenparl 04/05/2016, La Gazzetta del Mezzogiorno 08/09/2017, Corriere del Mezzogiorno 17/05/2018).

After the 2018 national election, M5S party officials (both in Puglia and at the national level) stopped denying that the disease was harmful, stopped opposing eradications (with few exceptions regarding ancient olive trees: ANSA, 03/05/2019) and proposed their own plan to counter the epidemic, which included eradication of trees (La Repubblica Bari, 2018; ANSA, 19/05/2018; La Repubblica.it, 05/04/2019). From that moment on, the M5S's discourse mainly focused on blaming the regional government for ineffective distribution of funds allocated by Piano di Sviluppo Rurale and the containment of the disease. It also emphasized their success in implementing compensation for farmers and containment measures during their time in office (Citynews, 28/09/2018; La Gazzetta del Mezzogiorno, 22/11/2018; ANSA, 07/12/2018; ANSA, 12/01/2019; La Gazzetta del Mezzogiorno, 22/03/2019; La Gazzetta del Mezzogiorno, 04/08/2019; Askanews, 01/02/2020; Corriere del Mezzogiorno, 13/06/2020; La Gazzetta del Mezzogiorno, 28/08/2020).

The party stopped blaming the regional government when they entered the governing coalition in late 2020/early 2021, and started emphasizing their contribution to the implemented measures (ANSA, 02/07/2021; ANSA, 06/10/2021). The party turned more critical of the national government in the Summer 2022, right before the party pulled out of the coalition supporting the Draghi government (ANSA 01/06/2022, ANSA 06/09/2022).

B Quantitative Analysis

B.1 Specification of Additional Models

We estimate the following TWFE event-study equation:

$$Y_{i,t} = \sum_{t' \in \mathcal{T}} \beta_{t'} X_{i,t}^{t'} + \mu_i + \lambda_t + L_{p(i)}(t) + \varepsilon_{i,t}, \tag{B.1.1}$$

where, for each $t' \in \mathcal{T}$, $X_{i,t}^{t'} := \mathbb{1}_{\mathcal{I}_{inf} \times \{t'\}}(i,t)$, while everything else is as in the main model's DID equation. This model allows us to check for the pre-treatment parallel trend assumption, which underlies the validity of the DID strategy, by verifying that each coefficient in the set $\{\beta_{t'} : t' \in \mathcal{T}^c_{post}\}$ is statistically indistinguishable from 0.[1] Moreover, the coefficients β_{2018} and β_{2022} describe the dynamic effect of the Xylella outbreak on the outcome in question.

We examine the economic and socio-cultural consequences of the Xylella outbreak for affected communities focusing on yearly measurements of (i) pre-tax income per capita, (ii) emigration of young adult population (population aged 25 to 35), and (iii) suicides. To fully exploit the time dimension of this data, we are forced to deal with staggered treatment assignment. Indeed, since municipalities were declared infected in blocks at different times between 2014 and 2019, their exposure to the bacterium unfolded in a staggered way. For this reason, we adopt the methodology proposed by Callaway and Sant'Anna (2021) to validly estimate the ATT. Specifically, their method – as applied to our design – decomposes the panel analysis at the infection block level, using the not-yet-and-never-treated municipalities as the control group, and then aggregates the results using appropriate block weights. This allows to obtain both aggregate ATT estimates and event study coefficients for time-to-infection periods. Also for this type of specification, we cluster standard errors at the municipality level.

Finally, we test our hypothesis on the moderating effect of public services and validate our treatment measure by estimating interaction specifications that generalize the binning estimator suggested by Hainmueller, Mummolo, and Xu (2019):

$$Y_{i,t} = \sum_{h=1}^{3} \beta_{M,h} X_{i,t} \mathbb{1}_{T_{M,h}}(i) + \mu_i + \sum_{h=1}^{3} \lambda_{M,t,h}(i) + L_{p(i)}(t) + \varepsilon_{i,t}, \tag{B.1.2}$$

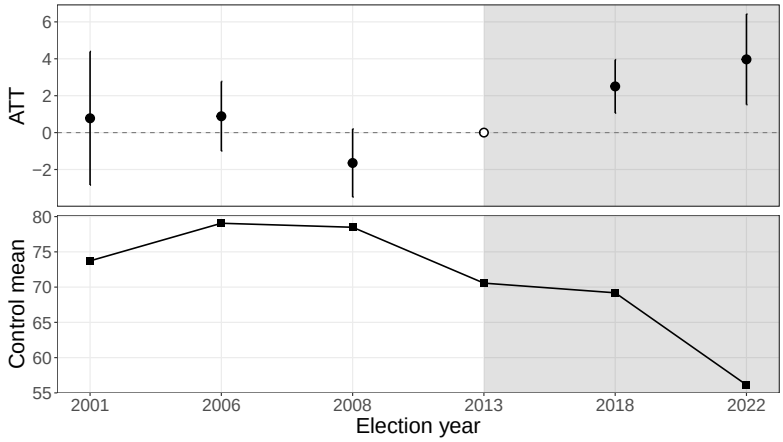
where, given a moderator m of interest, (i) $T_{M,h}$ denotes the set of municipalities belonging to tercile h ($h = 1, 2, 3$) of the distribution of M, (ii) $\lambda_{M,t,h}(i)$ is a year-tercile intercept, and (iii) every other term is as specified in the main model's DID equation. In other words, we run a fully-saturated interaction model (after binning our moderator into terciles), and then plot estimated conditional ATT coefficients $\beta_{M,1}$, $\beta_{M,2}$, and $\beta_{M,3}$. To make sure that the public service moderator (m) is not affected by treatment (Bansak 2021), we consider only measures of public service deprivation before the Xylella outbreak.

B.2 Additional TWFE Event Studies of National Elections

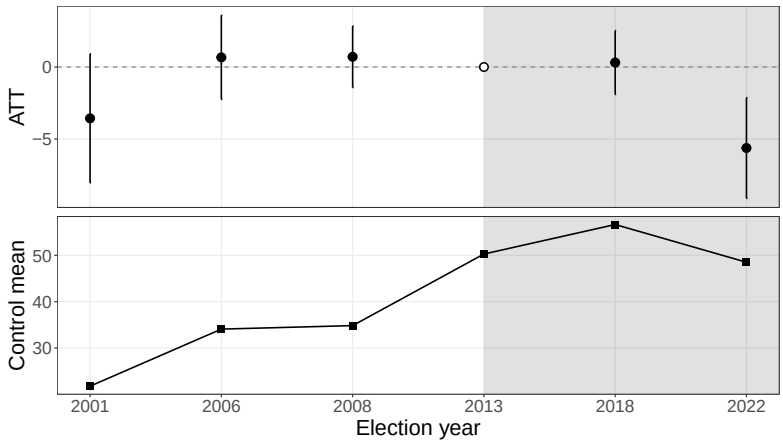
In Figures B.2.1a, B.2.1b, and B.2.1c, we report TWFE event-study plots for other relevant electoral outcomes at the national level. In particular, we find a significant positive effect of Xylella on turnout already in the 2018 election. As for the left (aggregating far-

[1] In practice, we only look at $\{\beta_{t'} : t' \in \mathcal{T} \cap [2001, 2013)\}$, as we use 2013 as a baseline omitted period.

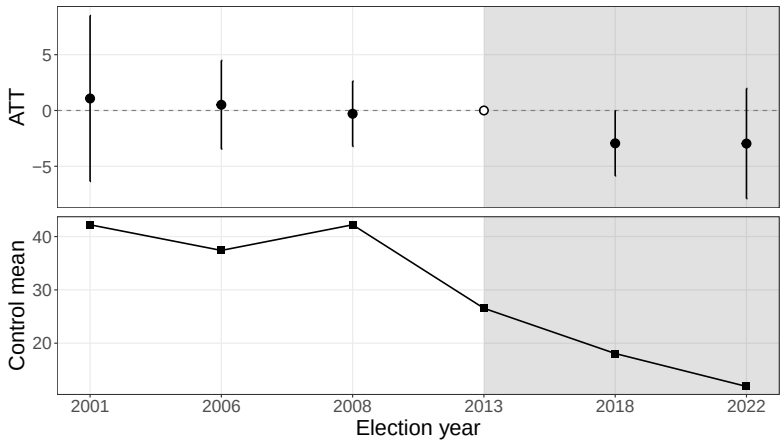
and center-left parties), we find a negative effect of the Xylella outbreak starting from the second post-infection election (2022). The center right was instead unaffected. We note that in all three cases, pre-infection parallel trends hold.



(a) Turnout.



(b) Left vote share (includes centre- and far-left parties).

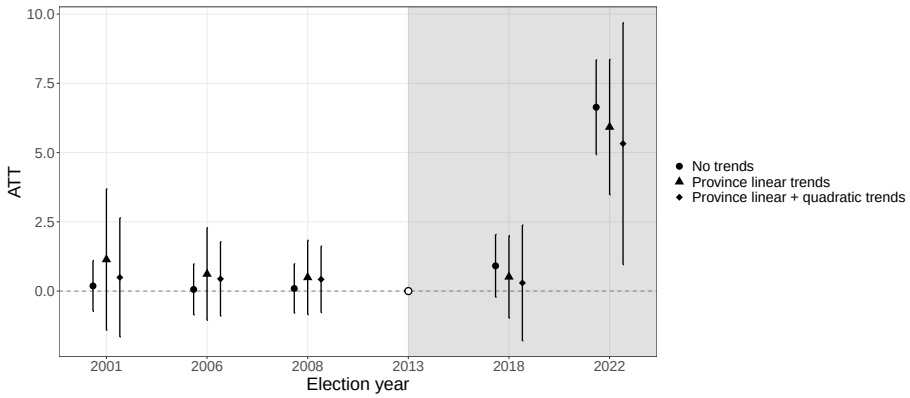


(c) Center-right vote share.

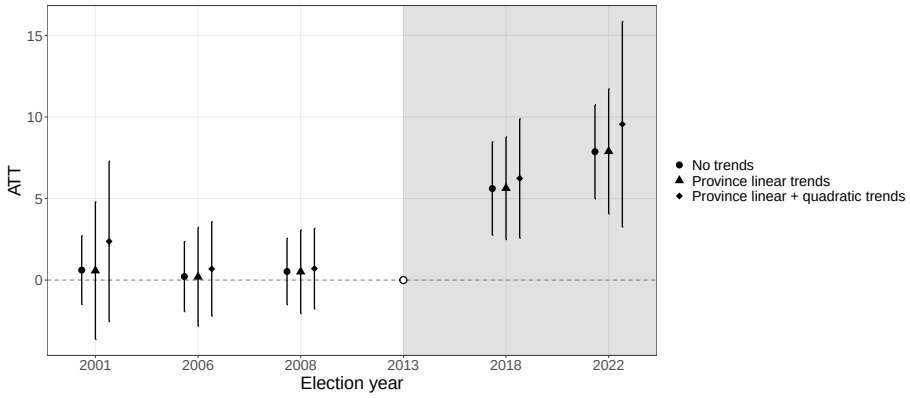
Figure B.2.1: TWFE event studies, 2001–22.

B.3 Additional Checks for Province-Level Time Trends

In Figures B.3.1a and B.3.1b, we plot the event study coefficients estimated with our baseline event study TWFE model featuring three different variations on time trend specifications: We include (i) no time trend, (ii) province-level linear trends (our preferred specification), and (iii) province-level linear and quadratic trends. The latter is done by adding interaction terms between province dummies and squared (and shifted back to 1) election year variables to the baseline specification. We perform this check using our two main measures of electoral support for the far right, i.e., far right votes as a share of the total number of votes and as a share of the votes cast for the right bloc. The plots reveal that the results of our analysis are robust to these different choices of linear time trends.



(a) Far right.



(b) Far right over right bloc.

Figure B.3.1: TWFE event studies with different time trend specifications, 2001–22.

B.4 Validation of Treatment Measure

In Figures B.4.1 and B.4.2, we provide evidence in support of our claim that Xylella is the driver of the electoral effects that we estimate using HTE specifications like the one of equation B.1.2. In Figure B.4.1, M corresponds to the pre-Xylella share of total land devoted to olive-tree cultivation, while, in Figure B.4.2, it corresponds to the pre-Xylella share of agricultural land devoted to olive-tree cultivation. Both measures clearly capture a form of exposure to Xylella-related damages.

In both cases, the conditional ATT of the Xylella infection on far-right voting is significantly larger for municipalities with higher pre-crisis exposure to the damages eventually

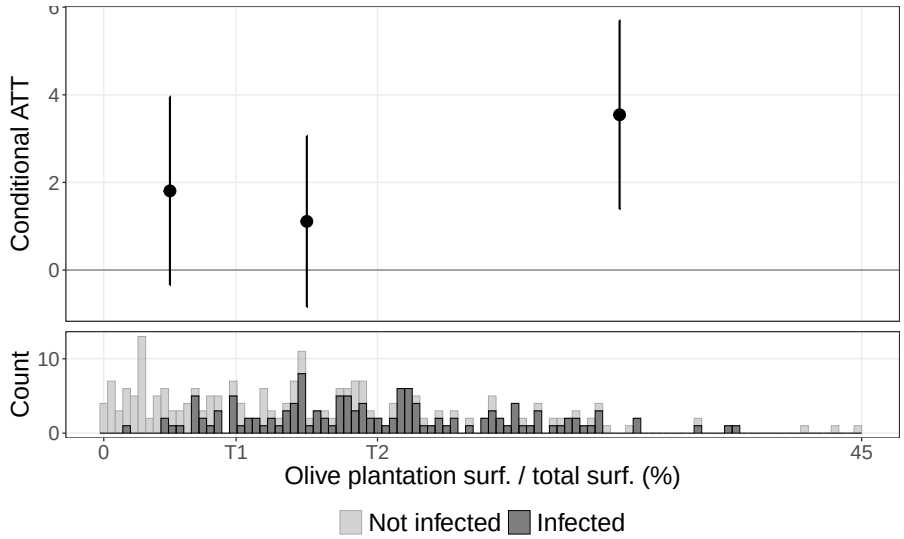


Figure B.4.1: Binning estimator of the marginal effect of infection on the share of votes for the far right, as the pre-Xylella share of total land devoted to olive-tree cultivation varies. Conditional effects are computed for the first, second, and third tercile of the moderator. A stacked histogram of the moderator is displayed at the bottom of the plot, with x-axis tick marks delimiting the first and second terciles.

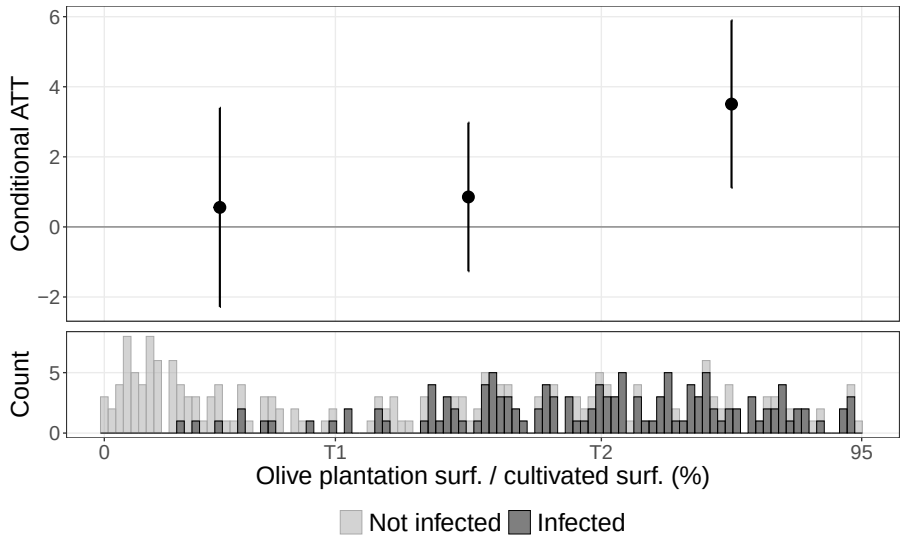


Figure B.4.2: Binning estimator of the marginal effect of infection on the share of votes for the far right, as the share of pre-Xylella share of agricultural land devoted to olive-tree cultivation varies. Conditional effects are computed for the first, second, and third tercile of the moderator. A stacked histogram of the moderator is displayed at the bottom of the plot, with x-axis tick marks delimiting the first and second terciles.

inflicted by the bacterium. This is in line with our claim that the Xylella outbreak set in motion the electoral consequences we discuss in the paper, as opposed to any other factor that is unaccounted for.

In Table B.4.1, we report results for our baseline TWFE model, where we replace the binary DID variable with the number of months each municipality has spent under infection at the time of elections. For all of our main electoral outcomes, this analysis

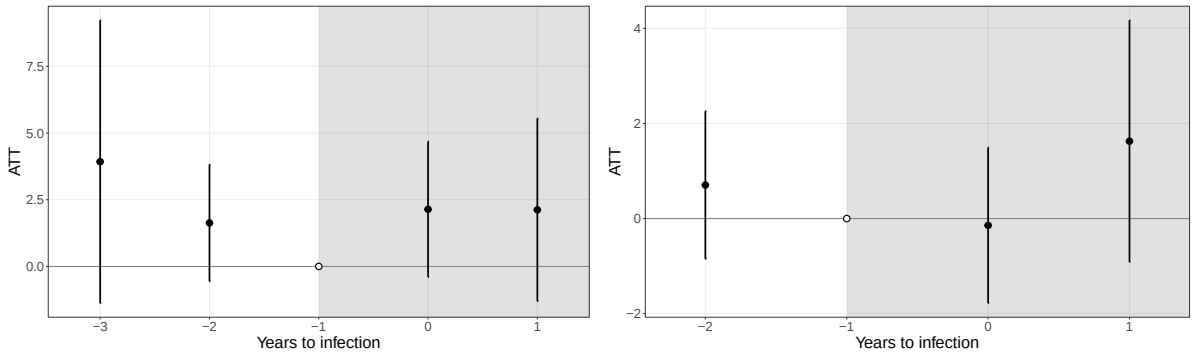
Table B.4.1: TWFE estimates of the ATT on national electoral outcomes (measured in percentage point shares), using the number of months elapsed since infection as a continuous treatment variable.

	Far left	Moderate Left	Moderate Right	Far right	Turnout
ATT	-0.103^{***}	-0.005	-0.021	0.087^{***}	0.048^{***}
	(0.014)	(0.011)	(0.019)	(0.011)	(0.011)
Municipality FE	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓
Province LT	✓	✓	✓	✓	✓

Note: Standard errors are clustered at the municipality level. $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{+}p < 0.1$.

confirms our baseline results. We estimate a positive significant effect of one month of infection on the share of votes for the far right. A strong positive effect is also observed on turnout, while a negative one is estimated for the vote share of the far-left.

B.5 TWFE Event Study of Regional Elections



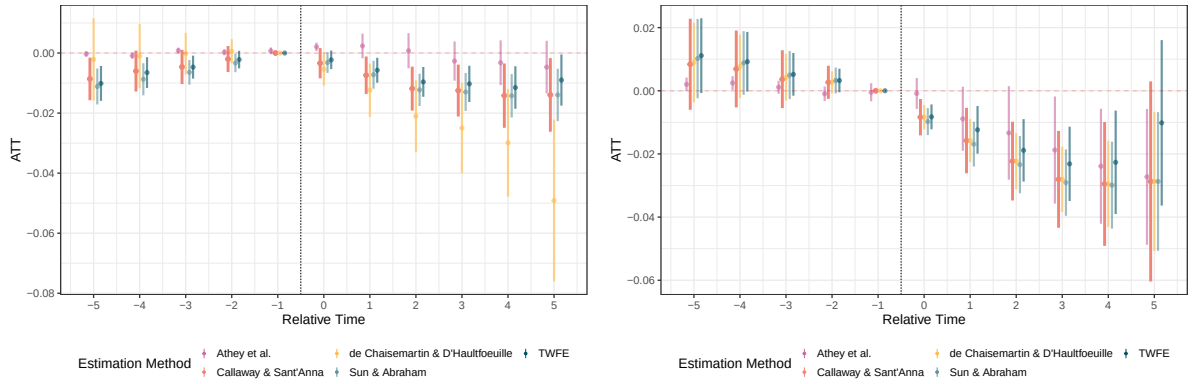
(a) Center-left (Regional Incumbent) (b) Far-right

Figure B.5.1: Staggered DID event study of vote shares in regional elections

In Figure B.5.1, we show results for two staggered DID event study models, estimated following Callaway and Sant'Anna (2021), where the outcome variable is the vote share obtained by the center-left regional incumbent coalition (left) and far-right parties (right) in regional elections held since 2000. The vote share for far-right parties in 2010 cannot be estimated because most parties on the right were running under the name Il Popolo delle Libertà, an aspect that partially limits the possibility to reproduce the analysis conducted at the national level. As the regional administration was the main institutional actor responsible for the implementation of relief measures on the ground, one may envision that the Xylella outbreak might have led to a backlash against the incumbent administration. However, we find no evidence of this. Similarly, Figure B.5.1 does not provide evidence of positive effect of the epidemic on far-right vote shares at the regional level.

These findings, further echoed by the qualitative evidence that we report in Appendix C.7, further confirm that the political effects of the outbreak extend beyond immediate concerns for disaster management. Regional elections can be seen as second-order elections, characterized by lower levels of programmatic and ideological competition (Reif and Schmitt 1980). This is particularly evident in the case of Puglia, where center-left President-elect Michele Emiliano has been known to support local candidates with ties to the far-right (Panarelli 2021; Cassano 2021; Napolitano 2020). As a result, ideologically structured messages centered around resentment against political elites and appeals to peripheral communities advanced by far-right political entrepreneurs at the national level may not necessarily structure election results at the regional level.

B.6 Alternative Methods for Staggered DID Estimation



(a) Pre-Tax Income Per capita, 2008–20 (b) Italian Residents Aged 20 to 35, 2002–19

Figure B.6.1: Staggered event study plots for two indicators of economic and Socio-cultural hardship, using different estimation methods.

Figures B.6.1a and B.6.1b show the results obtained by estimating our staggered DID models for pre-tax income per capita and youth emigration, as presented in the main text, via a host of methods alternative to our baseline choice (Callaway and Sant'Anna 2021). Specifically, the Figures compare our baseline results to those from naive TWFE estimation, the matrix completion estimator of Athey et al. (2021), and the popular panel methods by Sun and Abraham (2021) and De Chaisemartin and d'Haultfoeuille (2020).

As for income per capita, all methods estimate negative dynamic treatment effects, except for Athey et al. (2021) (which produces statistically insignificant estimates). As for youth emigration, instead, all methods agree with the Callaway and Sant'Anna (2021) baseline, showing a strong and significant negative effect. Taken together, these results are reassuring of the overall robustness of the conclusions drawn from our event study plots with staggered adoption.

B.7 Staggered DID on Suicides

In Figure B.7.1, we show results for staggered DID event study model, estimated following Callaway and Sant'Anna (2021), where the outcome variable is the number of suicides. The model shows how the advent of the bacterial outbreak coincided with an increase in the number of suicides in affected municipalities. Deaths by suicides surged on average

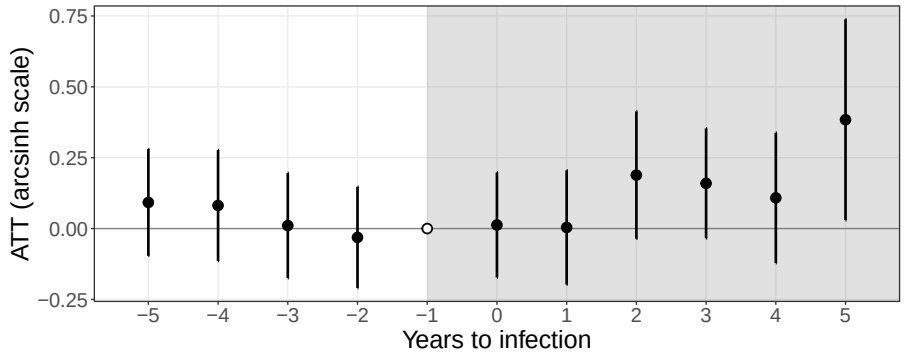


Figure B.7.1: Staggered event-study plots for suicides, 2005–19.

by around 40% after 5 years since the infection, compared to pre-Xylella baseline. While the magnitude of this effect should be put into perspective given the baseline rareness of suicides, it is still points to the substantial social and psychological distress brought along by the outbreak into the affected communities (cf. Case and Deaton 2020).

B.8 ATT Lower-Bound Calculations

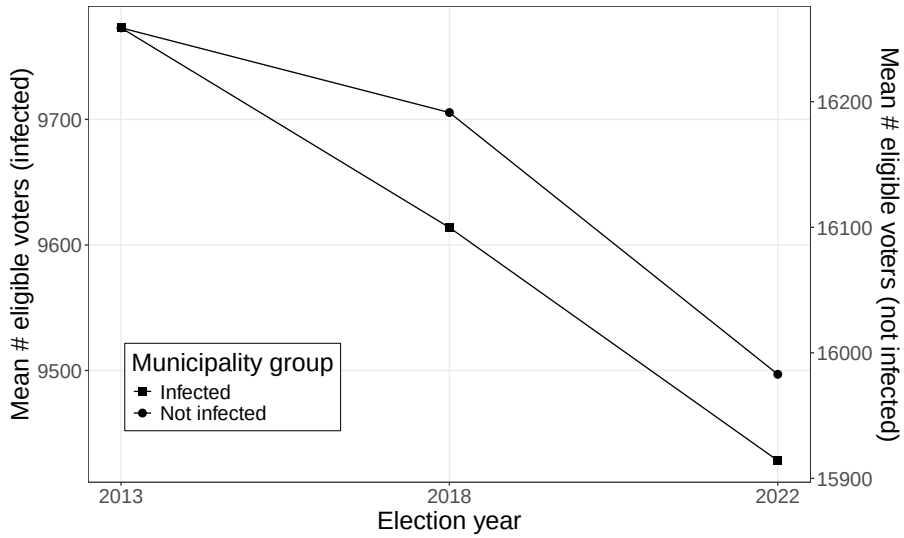


Figure B.8.1: Evolution of the mean number of eligible voters in infected and non-infected municipalities. The left and right axis refer to infected and non-infected municipalities, respectively, and they are aligned so to show the 2013 means at the same level.

As we show in the main text, the Xylella outbreak caused a pronounced emigration of young residents from the infected municipalities. This might raise the concern that the electoral results we estimate are merely due to a compositional effect on the electorate, whereby younger, more progressive voters leave the impacted areas and, as a consequence, the political weight of older, more conservative voters increases mechanically. In this Appendix, we address this concern.

In Figure B.8.1, we show the evolution of the mean number of eligible voters in infected and non-infected municipalities. While in both groups we observe a decrease in this variable, such a decline was more pronounced in infected municipalities. In light

of this, we simulate the following scenario in each infected municipality $i \in \mathcal{I}_{inf}$ and post-infection year $t \in \{2018, 2022\}$:

1. The population of eligible voters stayed the same in 2018 and 2022 as in 2013, unless our data shows that it had actually increased. In formulas,

$$EligVoters_{i,t}^{simul} = \max\{EligVoters_{i,t},\ EligVoters_{i,2013}\};$$

2. All of the additional "simulated" eligible voters, whose number corresponds to $\max\{0,\ EligVoters_{i,t}^{simul} - EligVoters_{i,t}\}$, turned out to vote;
3. All of the additional "simulated" eligible voters did not vote for the far right;
4. Everything else is as in our real data.

This procedure yields an extremely conservative scenario whereby the number of eligible voters would have stayed, after infection, as high as in 2013. We note that this is unrealistically conservative, since we observe a decline in the eligible population even in the control group. Second, we assume that all of these additional eligible voters would have voted for some party outside the far-right block, which is again a very conservative requirement for our far-right support results – both for the turnout and the non-far-right voting component. Starting from these absolute numbers, we compute the vote share for the far-right under this scenario.

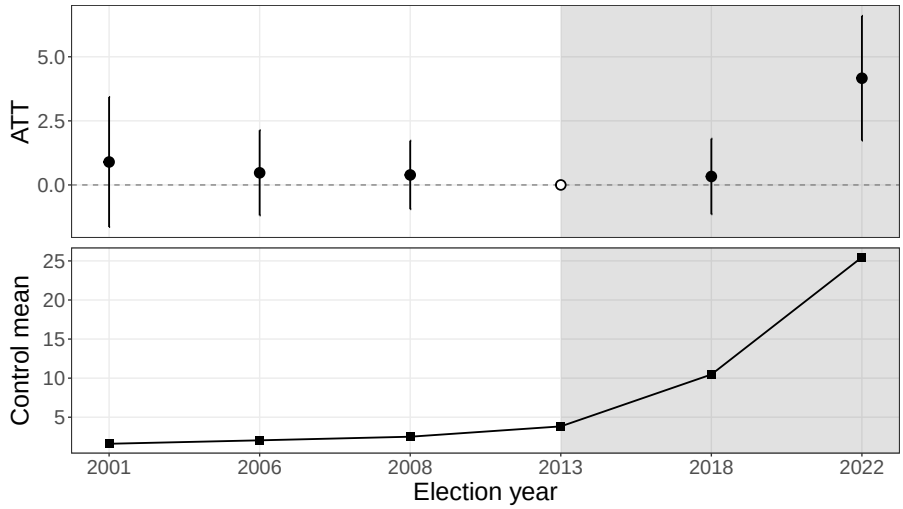


Figure B.8.2: TWFE event-study of lower-bounded far-right vote share, 2001–22.

In Figure B.8.2, we estimate our baseline event-study model using the simulated far-right vote share as the outcome variable. The plot shows that, even in this extremely conservative scenario with very low "progressive emigration" our results hold. Indeed, while the 2022 event-study coefficient drops, as expected, by a few percentage points compared to our model fit to the real data, it remains positive and highly significant. This provides a sharp lower-bound on our estimates, essentially ruling out the possibility that our results are entirely driven by migration-related compositional effects on the electorate.

B.9 Alternative Control Group

To build further confidence in the validity of our results, in this Appendix we replace the control group of non-infected Puglia municipalities with the municipalities of another

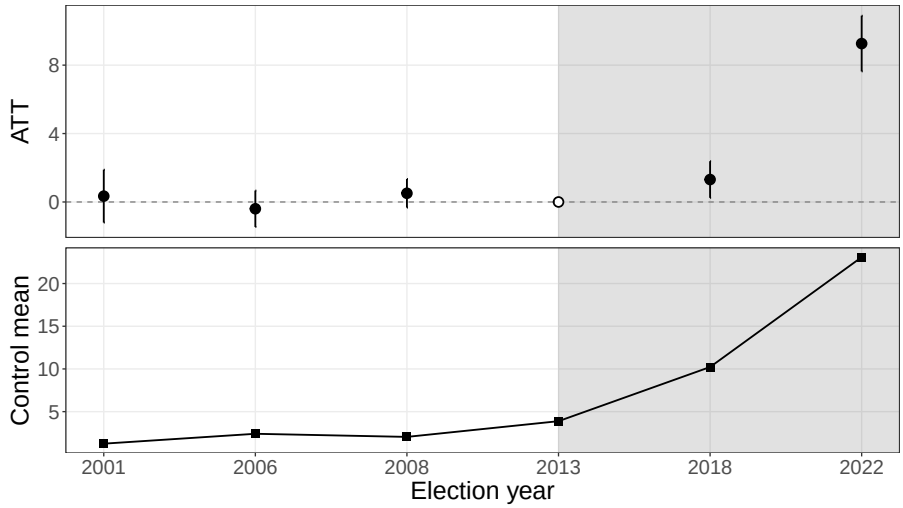


Figure B.9.1: TWFE event-study of far-right vote share, 2001–22, using municipalities in Calabria as the control group.

Southern region, i.e., Calabria. We choose this region because it is similar in many respects to Puglia, and because, as Figure B.9.1 shows, it followed pre-infection parallel trends in far-right voting with respect to the group of infected municipalities in Puglia. In this setting, we find an even larger effect on the vote share for the far right, with a positive and significant event-study coefficient already in 2018. This helps us address two potential concerns related to our study. First, it helps us rule out that our results are driven by any political dynamic that is inherent to municipalities in Puglia, e.g., differential treatment-control trends in conservative attitudes (on top of the province linear trends, which we always control for). Second, it enables us to reject the hypothesis that our results are driven by general equilibrium effects in the olive market in Puglia. Indeed, one might be concerned that, due to the high relevance of the olive oil market in Puglia, and the high degree of competition that might exist between producers in the same area, more advatageous market conditions due to reduced competition could be favoring the non-infected sub-region, thus also influencing electoral results. Focusing on a different Southern region as our control group, and finding qualitatively similar results, strengthens our confidence in the fact that our findings are not driven by the above mentioned process.

B.10 Measure of Public Service Provision

We proxy access to public services through a municipal-level measure of driving distance to public service hubs. The Italian government agency for territorial cohesion introduced this classification of public service hubs to better target policies for local development in areas that "have been steadily marginalized since the end of World War II" through decline in local provision of public services (Barca, Casavola, and Lucatelli 2014: 7). The data on the hubs was made available in 2014 and is based on indicators collected up to the beginning of 2013. The measure has been widely used by scholars of territorial inequalities and policy makers in Italy (Barbera and Zabatino 2022; Carrosio 2020; Cotella and Vitale Brovarone 2020; Lucatelli, Monaco, and Tantillo 2019; Moscarelli 2023)

The data on the hubs was made available in 2014 and is based on indicators collected

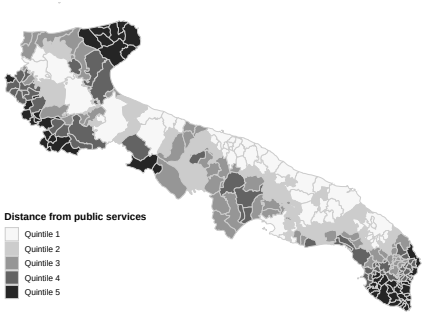


Figure B.10.1: Distance from public service hubs by municipality.

up to the beginning of 2013. Public service hubs are municipalities or clusters of neighboring municipalities featuring (i) a nationally connected train station (it excludes small stations dedicated exclusively to regional transport); (ii) a hospital offering services beyond an emergency room,[2] and (iii) a full offer of high schools (this includes secondary vocational, technical education, and *liceo*). Figure B.10.1 depicts the classification of Italian municipalities based on our public service deprivation measure and highlights variation in public service deprivation across municipalities within Puglia that is substantially orthogonal to the spread of Xylella. Appendix Table B.19.1 show how the average distance from public services is balanced in treated and control municipalities.

Three different levels of government have responsibility for the three services considered in the measure: (i) railroads and train stations are managed by the national company Rete Ferroviaria Italiana (RFI) a shareholding company created in 2001 whose sole shareholder is the Ministry of Economy and Finance; (ii) most health care policies, including the establishment of DEA hospitals, are the responsibility of regional governments; (iii) large part of policies on secondary education, including the establishment and suppression of high schools, is the responsibility of provinces. The measure we use is not aimed at capturing satisfaction for a specific level of government, but rather reflects the extent to which municipalities lack of access to public services.

B.11 Residualized Measure of Public Service Provision

In Figure B.11.1, we plot far-right voting CATT coefficients (estimated as in Equation B.1.2), using a modified measure of public service provision as the moderator. Specifically, we use the residuals from a linear regression of the baseline distance variable on a constant, pre-tax income per capita (2011), a rural-urban dummy (2011), share of tourism-related sector in the economy (2011), share of university graduates (2011), share of residents over 65 (2011), and number of non-profit associations per capita (2001). The (pre-infection) independent variables in this specification measure other possible dimensions of treatment effect heterogeneity that might be captured by our measure of public service provision. By taking residuals with respect to these other variables, then,

[2]The measure captures the presence of hospitals nationally classified as *Dipartimento di Emergenza Urgenza e Accettazione di Primo Livello*, department of emergency or urgency and access of the first level. The hospitals in this category offer specific services next to an emergency room. These services include observation, short stay, and resuscitation services. In these hospitals, diagnostic and therapeutic interventions of general medicine, general surgery, orthopedics and traumatology, and cardiology intensive care are carried out. In addition, they ensure the provision of laboratory services, such as chemical-clinical and microbiological analysis, diagnostic imaging, and transfusion.

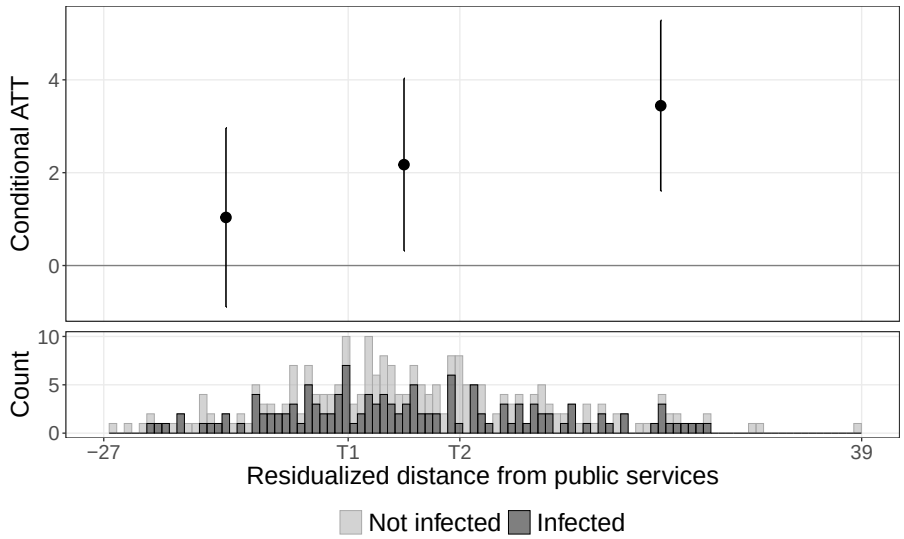


Figure B.11.1: Residualized public service provision (distance from public service hubs) and the effect of Xylella on far-right support.

we extract variation in municipalities' distance from public service hubs that is not explained by these factors. As Figure B.11.1 shows, positive treatment effect heterogeneity is present also across terciles of the residualized measure. This, together with the qualitative evidence collected during our fieldwork in both the positive and negative case, builds confidence in our claim that public service provision does moderate the effect of Xylella on far-right voting, independently of other cross-sectional dimensions it might be correlated with.

B.12 HTE Estimation with Machine Learning

In this Appendix, we present HTE results based on the causal forest methodology of Wager and Athey (2018). The latter builds on the random forest learning algorithm to estimate treatment effects conditional on potentially high-dimensional covariate values. In our case, while the relatively small sample size warns against relying on results of this type with excessive confidence, performing this procedure helps to build further confidence in the relevance of public service provision as a mediating variable in the Xylella–far-right voting causal relationship.

Specifically, we estimate CATTs based on a set of 14 pre-treatement, municipality-level covariates, including distance from public services, all of the variables used for residualization in Appendix B.11, as well as sex ratio (2011), share of the primary sector in the economy (2011), population (2011), two measures of digitalization, a measure of conservatism based on the first principal component of results of three 20th century national referendums, and an estimate of the Gini index (2011), and number of non-profit associations per capita (2001). Moreover, in order to adapt our dynamic data to the static treatment-outcome nature of the causal forest method, we take municipality-level pre-post differences in far-right year-demeaned vote shares as the outcome.[3] Given the small sample at our disposal, we start the algorithm with 1,000 different seeds to

[3]This reflects as much as possible our TWFE specification, except for the province linear trends, which cannot be incorporated in this within-municipality recoding of the outcome. Also, for the sake of consistency, we exclude the 6 municipalities infected in 2019 from the estimation sample.

hedge against possible numerical instability. Among other things, this means that, at each iteration, a different train-test sample split is operated, as well as a different split of training observations into separate groups for "honest" tree growing (Wager and Athey 2018).

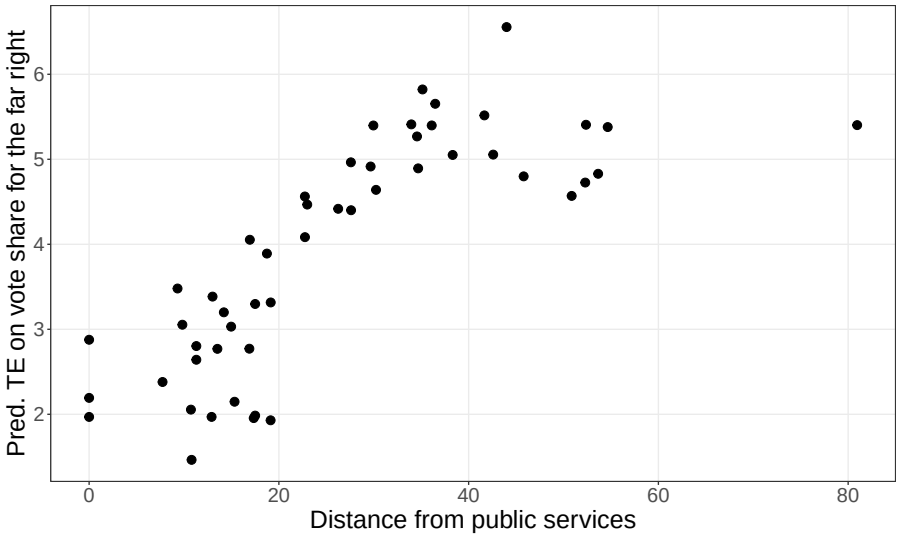


Figure B.12.1: Predicted treatment effect of Xylella on far-right voting as a function of public service provision (distance from public service hubs), using the causal forest algorithm (Wager and Athey 2018). Predictions are based on observations belonging to a randomly drawn test sample.

First, we check that HTE computations based on causal forests are consistent with the binning estimates presented before. Figure B.12.1, plotting predicted treatment effects as a function of public service provision (starting the algorithm with the first randomly generated seed), confirms this expectation – there is a clearly positive relation between distance from public services and predicted treatment effects. We note that this is recorded even in the presence of many additional covariates that can potentially generate treatment effect heterogeneity.

Second, we leverage the tree-based nature of causal forests to compute a measure of variable importance for each covariate included in the estimation – i.e., a weighted count of the number of times a given feature is split on at each depth in the forest. While this measure should be interpreted with caution, it gives an indication of which variables the algorithm leverages the most to explain heterogeneity in treatment effects. In 89.5% of the 1,000 runs of the model, distance from public services scores higher than any other covariate in terms of variable importance, while 99.7% of the times it is in the top 3. Overall, this strengthens our confidence that distance from public services is an important dimension to explain variation in the effect of Xylella on far-right electoral returns, even when alternative and possibly correlated dimensions are accounted for with appropriate methods for high-dimensional CATT estimation.

B.13 Public Service HTE on Income per Capita

In Figure B.13.1, we show CATT coefficients analogous to those of Equation B.1.2, using pre-tax income per capita (in arcsinh scale) as the dependent variable. While this is not optimal due to the staggered treatment setting we are in (recall that municipality-level

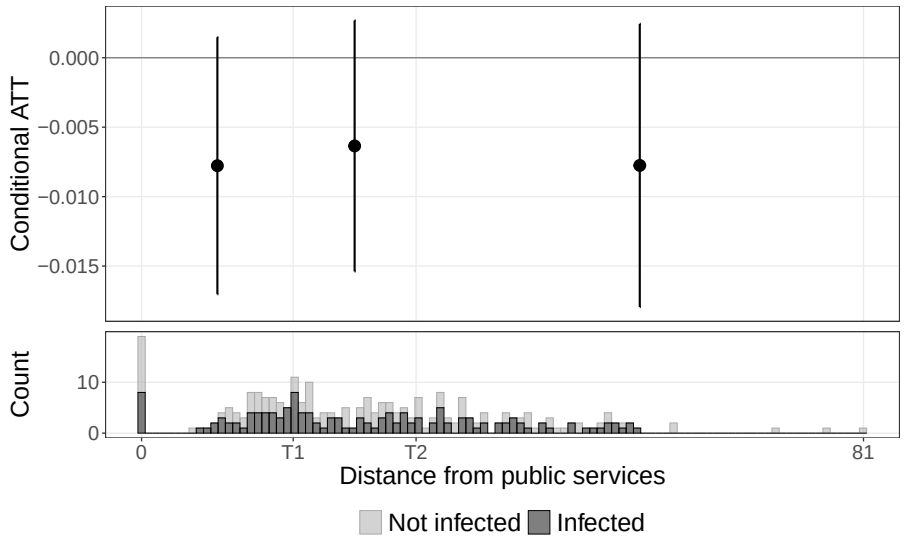


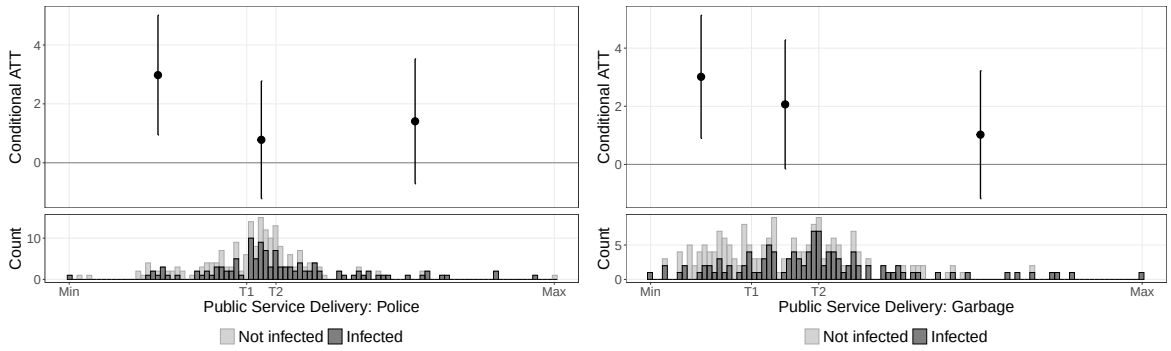
Figure B.13.1: Public service provision (distance from public service hubs) and the effect of Xylella on pre-tax per capita income.

income data is available for each year up to 2020), we estimate this equation to shed light on the channels through which public service provision might be moderating the average change in the electoral behavior observed in response to the Xylella outbreak. In particular, one might conjecture that public services act as a buffer against the economic dislocation brought about by the bacterium, for instance by providing alternative public sector jobs for newly unemployed people. If this were the case, we would expect to observe less of a negative effect on income in municipalities that are closer to public service hubs. However, this implication finds no support in the results plotted in Figure B.13.1, which shows a negative effect of statistically comparable magnitude for municipalities in each tercile of the moderator distribution.[4] This suggests that public services might play the role of a moderating factor through channels other than purely economic ones – for instance, as we argue based on our qualitative fieldwork evidence, by acting as a precondition for the activation of the community narrative of being left behind that in turn leads to far-right support.

B.14 HTE on Alternative Measures of Public Service

In Appendix Figure B.14.1, we test whether the results on the HTE on far-right vote with respect to distance from public services is robust to the use of different measures of public service access. We augment our dataset with municipal-level measures from an official monitoring started in 2010 by the Ministry for the Economy and Finance (MEF) and released through the OpenCivitas dataset. We rely on the two waves collected before the Xylella epidemic (2010 and 2013). These data contain direct measures of the local delivery of two services that, based also on our qualitative fieldwork, are highly salient in voters' everyday lives: local police and garbage collection. We replicate the moderation analysis presented in the main text using the average police and garbage

[4]For reference, we also note that the baseline TWFE specification on pre-tax arcsinh income per capita (i.e., the same model as the HTE one, omitting all interactions with moderator tercile indicators) yields an estimated ATT of -0.007, significant at the 5% level, in line with the sign of our estimates *à la* Callaway and Sant'Anna (2021).



(a) Local police (b) Garbage Collection

Figure B.14.1: Public service provision (local public service delivery) and the effect of Xylella on far-right support.

collection delivery between 2010 and 2013 as moderators. Results reported in Appendix Figure B.14.1 provide evidence of an heterogeneous effect of the Xylella epidemic with respect to local public service access. The greater is the access to police and garbage collection the smaller is the effect of the epidemic on far-right vote.

The measures provided by OpenCivitas present limitations. The MEF only provides an aggregate measure (Delivery Against Standard Demand), based on several micro-indicators, that indicates the quantity of services offered by each municipality compared to the population band average. This measure indicates the percentage deviation of the overall level of services offered compared to municipalities of similar size. This is computed according to the following formula:

$$\frac{\text{Service Output}_{syi} - \text{Average Service Output}_{syg(i)}}{\text{Average Service Output}_{syg(i)}} \times 100$$

where $\text{Service Output}_{syi}$ indicates the overall level of service s delivered in year y by municipality i, and $\text{Average Service Output}_{siy}$ indicates the average service output delivered in the same year by municipalities in the same population segment $g(i)$. The adopted population segments are the following: < 500); $[500 - 1,000)$; $[1,000 - 2,000)$; $[2,000 - 3,000)$; $[3,000 - 4,000)$; $[4,000 - 5,000)$; $[5,000 - 10,000)$; $[10,000 - 20,000)$; $[20,000 - 60,000)$; $[60,000 - 100,000)$; $[100,000+$.

For each service s, MEF weights and aggregates several sub-indicators:

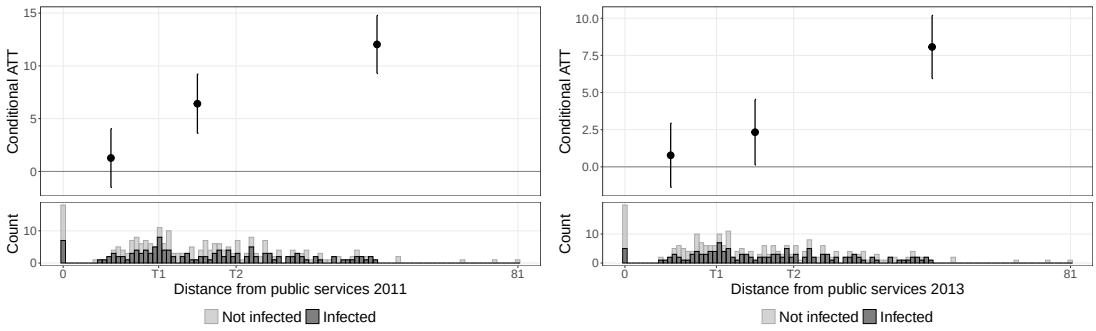
- Local Police includes indicators related to services delivered by municipal police and administrative police. Micro indicators include high penalties for violations of the Highway Code, high penalties for financial, commercial, and other administrative activities, administrative stops and seizures, vehicle removals, information and investigations for municipal or other entities' activities, appeals in opposition to Judicial Authorities, clearance for granting permits for public land occupation. These micro-indicators are collected by MEF through the SOSE instrument, a questionnaire compiled by municipality representatives to monitor key performance indicators.

- Garbage Collection micro-indicators are derived from data collected by the Higher Institute for Environmental Protection and Research (ISPRA) and capture the percentage of differentiated waste collection out of the total urban waste.

The measures also present several missing values. In our sample, 16 percent municipalities have missing value on the police measure and 14 percent have missing value on the garbage measure. Despite these limitations, we these indexes to provide complementary evidence on the validity of our argument.

B.15 Alternative Models for Moderation Effect

We further test the robustness of the HTE specification outlined in Equation B.1 to the exclusion of elections before the measurement of the public service deprivation measure. In Appendix Figure B.15.1a, we replicate the HTE estimates reported in the main text on election between 2013 and 2022. As the model now includes only one pre-treatment period, we relax the specification outlined in equation B.1 by excluding the province time trends. Results remain substantively equivalent to those reported in the main text using this alternative specification. As a further step, in Appendix Figure B.15.1b we replicate the analysis using a previous version of the measure of distance to public service hubs released by the Italian government agency for territorial cohesion that is based on measures taken in 2013. Results remain substantively equivalent also using this alternative measure.



(a) Public Service Measure 2011 (b) Public Service Measure 2013

Figure B.15.1: Xylella's Conditional Effect on Far-Right Support, across Terciles of Distance from Public Service Hubs, elections 2013–2022

B.16 Randomization Inference

In this Appendix, we conduct two simulation exercises based on our far-right voting TWFE model, which allows us to perform randomization inference on the estimated ATT. Compared to traditional inference schemes, which focus on the uncertainty on estimates generated by sampling, from a large population, the units to include in a study, randomization inference aims at quantifying uncertainty coming from the assignment of included units to the treatment and control group within causal studies. In particular, given a parameter of interest (in our case, the ATT), one might ask: What if the value I estimate is, say, positive, only due to the specific treatment-control assignment I observe, but potential outcomes in each unit are in fact not affected at all by the assignment of treatment? The latter is commonly known as a sharp null hypothesis, and it is possible to obtain the exact distribution of the parameter under it by simply re-estimating such parameter under every possible treatment assignment configuration, each time imputing the missing potential outcomes with the observed ones. In practice, as in our case, it

is often too costly to exhaust every possible combination of treated-control assignments, so a large enough number of random samples is drawn to approximate the distribution. Moreover, details about the real-world treatment assignment mechanism can be incorporated in the simulation procedures, e.g., keeping the share of treated units constant across iterations. We refer to Cunningham (2021), Chapter 4 for more details on the randomization inference paradigm.

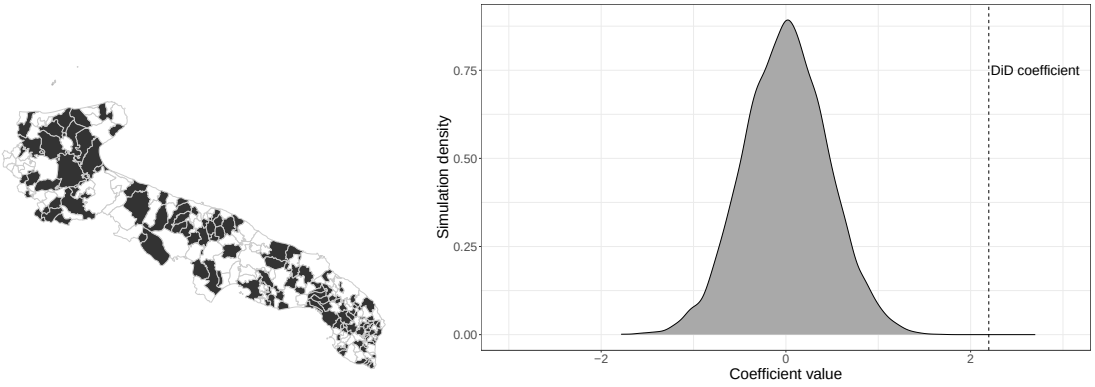


Figure B.16.1: Left: Example of randomly simulated sample of infected municipalities. Right: Density plot of simulated coefficients (two-sided p-value: 0.000).

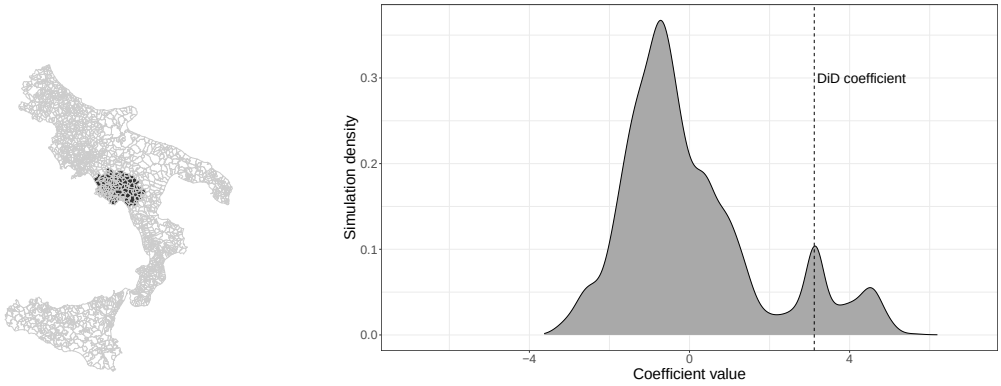


Figure B.16.2: Left: Example of simulated sample of infected municipalities, using a spatial model of disease spread. Right: Density plot of simulated coefficients (two-sided p-value: 0.115)

In practice, we first re-sample the treatment assignment 10,000 times with a fully random procedure, allocating 133 municipalities to the infected group and the rest to the non-infected one, and estimate each time the usual far-right TWFE ATT. In Figure B.16.1, we report an example of the spatial patterns that arise from this simulation mechanism, as well as a density plot of the estimated coefficients. Out of 10,000 simulations, there is no single one whose ATT exceeds (in absolute value) the ATT estimated with real data. The sharp null hypothesis is thus rejected at any conventional level of significance, building great confidence in the statistical validity of our conclusions.

Second, we set up a more sophisticated random assignment mechanism, which produces spatial patterns that more closely resemble the ones of an epidemic such as the Xylella one. Specifically, we iterate the following algorithm 10,000 times, each time obtaining a new simulated sample of infected municipalities and re-estimating the far-right

TWFE model accordingly:[5]

1. Sample (uniformly from the set of all municipalities) a municipality i_0 from which the epidemic starts, and add it to the (thus far empty) set of infected municipalities;
2. For each neighbor of i_0, append it to the set of infected municipalities with probability p;
3. For each infected municipality i_1, append each of its neighbors to the set of infected municipalities with probability p;
4. Iterate this procedure until the set of infected municipalities has reached cardinality at least N.

We perform simulations setting $p = 0.9$ and $N = 130$, and we obtain patterns of infection like the one plotted in the left panel of Figure B.16.2. In the right panel, instead, a density plot of the simulated coefficients is shown. Most of the mass is concentrated around values less extreme than the real one. Although the two-sided p-value (slightly above 0.1) does not allow to reject the sharp null hypothesis at any conventional level of significance, its low value still builds substantive confidence in the statistical strength of our results.

B.17 Spatial Error Correlation Analysis

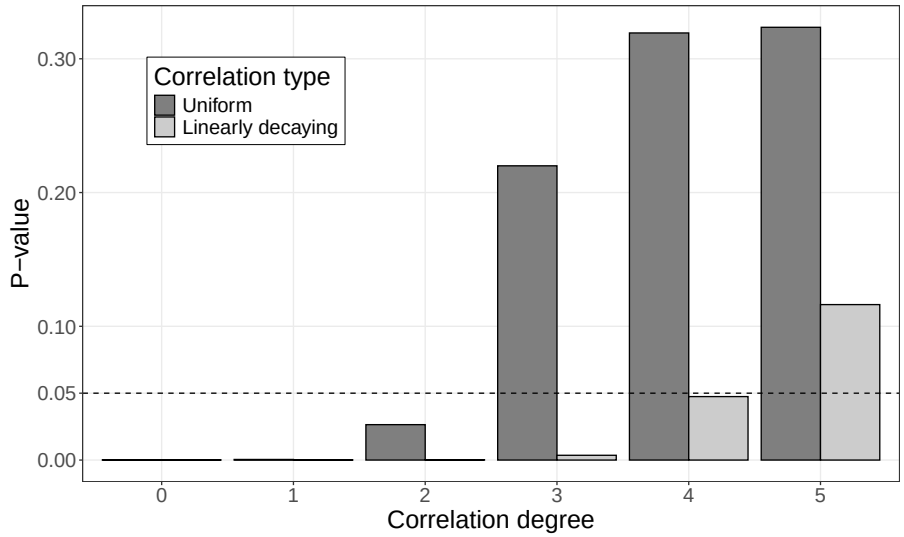


Figure B.17.1: Far-right voting ATT p-values from network-based spatial error correlation analysis *à la* Colella et al. (2019). P-values are computed allowing for error correlation up to 5 degrees of network connectedness, and modeling the within-cluster correlation as either uniform or linearly decaying in the degree of connectedness.

Given the geographic concentration of the units we study, another concern might be that the error terms in our models are correlated across municipalities that are close to each

[5]In order to have enough variation in the epidemic-like assignment of infection, we extend the analysis to municipalities in every Southern region: Puglia, Molise, Basilicata, Campania, Calabria, Abruzzo, and Sicilia. Notice that, also in this case, we estimate a positive and significant (in the traditional sense) ATT. Moreover, to avoid that our algorithm gets stuck on municipalities having no neighbor or belonging to small isolated clusters, we exclude municipalities whose territory extends solely on minor islands.

other. In that case, inference should be adjusted in the form of appropriate clustering of standard errors.

To address this, we re-run our baseline TWFE model and perform network-based spatial error correlation analysis on it following Colella et al. (2019). As we hypothesize that neighboring municipalities might display mutual correlation in the error term, we treat them as nodes in a network, whose edges encode neighborhood relationships. That is, an edge exists between municipality i and municipality j if and only if their borders touch. We then feed this adjacency matrix to the Stata command `acreg`, which incorporates it in the estimation of the variance-covariance matrix used for inference. The suite allows to specify the maximum degree of network connectedness based on which to cluster standard errors. That is, for municipality i, should its error term be correlated only with that of its neighbors (i.e., up to degree 1)? Should it also be correlated with that of the neighbors of its neighbors (i.e., up to degree 2)? And so on. Moreover, the error correlation can be specified to be uniform across degrees – e.g., the error term of municipality i is as correlated with that of its neighbors as it is with that of the neighbors of its neighbors – or to decay linearly as a function of the degree of connectedndess – i.e., further municipalities display lower error correlation.

Figure B.17.1 summarizes the results of this analysis for the baseline ATT on the vote share for the far-right. For the stringent uniform correlation case, we reject the ATT $= 0$ null hypothesis (p-value < 0.05) up to degree 2. If, more realistically, we also allow for linear decay in the error correlation, we reject the null hypothesis up to degree 4. Overall, these results reassure us of the high degree of robustness of our previous statistical inferences with respect to unaccounted spatial patterns in the errors of our main model.

B.18 Power Analysis

	Far Right	Far Right Over Right	Turnout
Power (Probability)	0.910	0.993	0.997
Type S Error (Probability)	0.000	0.000	0.000
Type M Error (Inflation Factor)	1.055	1.004	1.002

Table B.18.1: Power analysis results following Gelman and Carlin (2014) for baseline TWFE ATT coefficient.

Table B.18.1 shows the results of a power analysis exercise (Gelman and Carlin 2014) performed on our baseline pre-post TWFE ATT coefficient using the share of vote for the far right (both over total and over right bloc votes) and turnout as outcomes. The first row shows that, for every outcome, our study is well powered – that is, there is a high chance of declaring a non-zero ATT statistically significant. The second row, instead, reveals a virtually-0 probability that we are estimating the ATTs as positive and significant when they are in fact negative (Type S error). Finally, the last row shows that the estimated ATT coefficients are likely to be inflated by a factor ≈ 1 compared to their true value (Type M Error) – that is, they are very likely not to be inflated at all. Taken together, these results build confidence in the statistical soundness of our quantitative analysis results.

B.19 Descriptive Statistics

Table B.19.1: Balance table of pre-infection covariates between treated and control municipalities. P-values associated to two-sided difference-in-means t-tests are reported in the last column.

Variable	Mean (treated)	Mean (control)	Difference	P-value
Population (2011)	12,043.871	20,156.508	-8112.638	0.030
Pop. density (2011)	322.156	229.689	92.467	0.011
Dist. from public service hub (2011)	25.280	26.178	-0.899	0.804
Share of elderly population (%, 2011)	20.931	20.358	0.573	0.305
Share of foreign residents (%, 2011)	1.435	2.796	-1.361	0.000
Pre-tax income per capita (2011)	13,287.192	12,845.379	441.813	0.067
Share of labor force in the primary sector (%, 2011)	11.402	18.894	-7.492	0.000
Share of labor force in tourism (%, 2011)	18.904	17.349	1.554	0.003
Share of university graduates (%, 2011)	0.077	0.073	0.004	0.124
Olive-cultivated surf./cultivated surf. (%, 2010)	60.846	26.785	34.062	0.000
Olive-cultivated surf./total surf. (%, 2010)	16.407	9.751	6.565	0.000

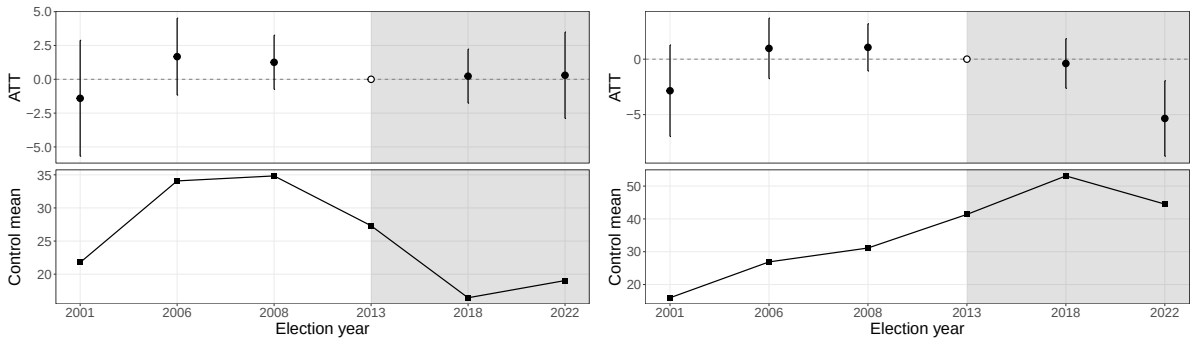
In Table B.19.1, we report some descriptive statistics on pre-Xylella mean levels of covariates for the two group of municipalities, that is, infected and non-infected ones. While not strictly necessary for our DID identification strategy, having balance across groups builds credibility in our choice of the non-infected municipalities of Puglia as a good control group for the infected group. This balance indeed holds for most socioeconomic and demographic variables. Importantly, our data displays a significant difference in average levels of olive tree prevalence (as captured by the last two rows in Table B.19.1). However, in Appendix B.4, we show that there still is significant variation within the two groups.

B.20 Party Coding

Table B.20.1: Adopted coding of Italian national parties into families by election year, 2001-22.

Election year	Party family	Parties
2001	Far left	COMUNISTI ITALIANI, RIFONDAZIONE COMUNISTA
	Moderate left	DEMOCRATICI SINISTRA, IL GIRASOLE
	Moderate right	ALLEANZA NAZIONALE, FORZA ITALIA
	Far right	FIAMMA TRICOLORE
2006	Far left	COMUNISTI ITALIANI, RIFONDAZIONE COMUNISTA
	Moderate left	L'ULIVO
	Moderate right	ALLEANZA NAZIONALE, FORZA ITALIA
	Far right	ALTERNATIVA SOCIALE MUSSOLINI, FIAMMA TRICOLORE, LEGA NORD
2008	Far left	LA SINISTRA L'ARCOBALENO, SINISTRA CRITICA, PARTITO COMUNISTA DEI LAVORATORI
	Moderate left	PARTITO DEMOCRATICO, PARTITO SOCIALISTA
	Moderate right	IL POPOLO DELLA LIBERTA
	Far right	FORZA NUOVA, LA DESTRA - FIAMMA TRICOLORE
2013	Far left	PARTITO COMUNISTA DEI LAVORATORI, PARTITO DI ALTERNATIVA COMUNISTA, RIVOLUZIONE CIVILE, SINISTRA ECOLOGIA LIBERTA', MOVIMENTO 5 STELLE BEPPEGRILLO.IT
	Moderate left	PARTITO DEMOCRATICO
	Moderate right	IL POPOLO DELLA LIBERTA'
	Far right	CASAPOUND ITALIA, FIAMMA TRICOLORE, FORZA NUOVA, FRATELLI D'ITALIA, FUTURO E LIBERTA', LA DESTRA, LEGA NORD
2018	Far left	LIBERI E UGUALI, POTERE AL POPOLO!, PARTITO COMUNISTA, MOVIMENTO 5 STELLE
	Moderate left	PARTITO DEMOCRATICO
	Moderate right	FORZA ITALIA
	Far right	CASAPOUND ITALIA, FRATELLI D'ITALIA CON GIORGIA MELONI, ITALIA AGLI ITALIANI, LEGA
2022	Far left	ALLEANZA VERDI E SINISTRA, ITALIA SOVRANA E POPOLARE, UNIONE POPOLARE CON DE MAGISTRIS, MOVIMENTO 5 STELLE
	Moderate left	PARTITO DEMOCRATICO - ITALIA DEMOCRATICA E PROGRESSISTA
	Moderate right	FORZA ITALIA, NOI MODERATI/LUPI - TOTI - BRUGNARO - UDC
	Far right	FRATELLI D'ITALIA CON GIORGIA MELONI, LEGA PER SALVINI PREMIER

B.21 Additional Results on the Left Bloc



(a) Traditional Far Left and Centre Left (b) Centre Left and Five Star Movement

Figure B.21.1: TWFE event studies of vote share for alternative definitions of left bloc

While it is hard to classify Five Star Movement (M5S) ideologically, its agenda combines anti-establishment sentiments with pro-redistribution policies such as universal basic income since its inception (Font, Graziano, and Tsakatika 2021; Mosca and Tronconi 2021). According to the Manifesto Project Database (Lehmann et al. 2023), M5S scores similar to traditional Italian left parties on the general left-right (M5S scored -49 in 2013 and -7 in 2018; PD scored -8 and -7) and economic orthodoxy (M5S scored 0.6 in 2013 and 0 in 2018; Partito Democratico (PD) scores 0.9 and 0) categories. Given M5S' anti-establishment stance we include it in the far-left bloc in the main analysis. That said, we might be concerned that after formally entering a coalition with the center left PD in 2019, the M5S can no longer be considered as an anti-establishment challenger (De Vries and Hobolt 2020). In order the examine the robustness of our results, we run an additional model where we group M5S with the centre-left (PD) (Appendix Figure B.21.1b), and an additional model where we exclude M5S and consider PD and the traditional far-left as the left bloc (Appendix Figure B.21.1a). These analyses show that a negative effect when we group M5S and PD together, and a null result when we exclude M5S, and only consider the traditional far left and the centre left as the left bloc.

B.22 Statistical Data Sources

We rely on a variety of sources to assemble our datasets. Data on the diffusion of Xylella are obtained from maps provided by SIT Puglia (2022). Electoral data – including results from national and regional elections, and referenda – are extracted from the historical archive of elections by Ministero dell'Interno (2024). To measure municipality characteristics, we use several databases from the Italian National Institute for Statistics (ISTAT). These include population composition (ISTAT 2011), youth emigration (ISTAT 2022d), suicides (ISTAT 2022b), agricultural land use (ISTAT 2010), and the number of non-profit associations (from the 2001 Census, sourced via Nannicini et al. 2013). Data from Agenzia per la Coesione Territoriale (2014b, 2014a) are used to classify municipalities into public service hubs, complemented by information on the 2001 Census population (ISTAT 2001). Driving distance to public service hubs is calculated using the distance matrix provided by ISTAT (2014). We rely on data from the Ministry for the Economy and Finance (MEF) to measure income per capita MEF (2022), sourced through ISTAT (2022c), and local public service provision, sourced through the OpenCivitas database

(MEF 2011, 2014). For administrative boundaries, we use shapefiles and definitions from ISTAT (2022a).

C Qualitative Analysis

C.1 Case Selection Strategy

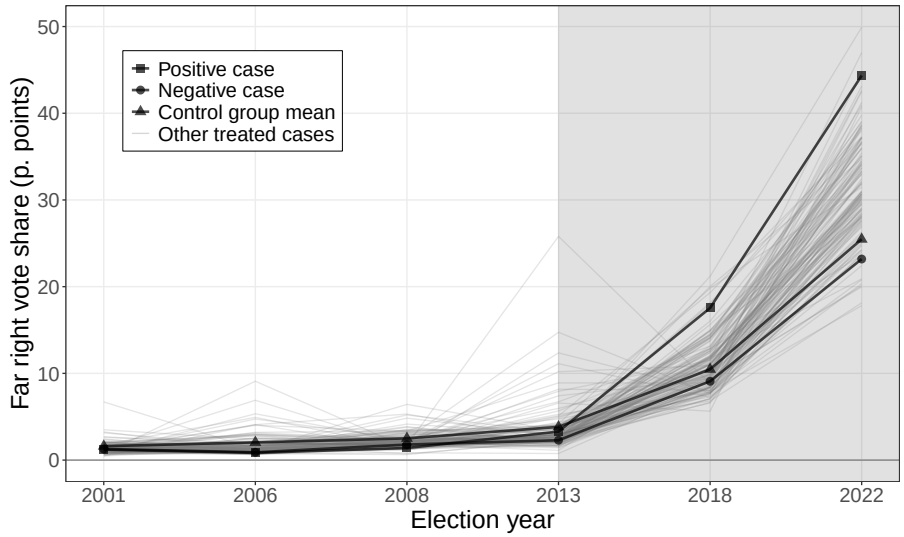


Figure C.1.1: Far-right voting trends in the municipalities selected for in-depth qualitative analysis.

To select cases for in-depth qualitative analysis, we ran the following algorithm. For each infected (by 2018) municipality i, do:

1. Run a far-right vote share TWFE event-study model excluding from the sample every infected municipality different from i;
2. Check for pre-infection parallel trends (2001, 2006, and 2008 event-study coefficient p-values ≥ 0.05). If they don't hold, discard municipality i and go back to Step 1 for the next municipality (unless i is the last one, in which case, terminate the algorithm). If they hold, store the 2018 and 2022 event-study coefficients and proceed to Step 3;
3. Run a far-right vote share TWFE model excluding from the sample every infected municipality different from i, and store the estimated TE.
4. Go back to Step 1 for the next municipality (unless i is the last one, in which case, terminate the algorithm).

Based on the output of this algorithm, we then select two municipalities among the ones that individually showed pre-infection parallel trends with respect to the control group (i.e., the ones that were not discarded). Specifcally, we select one municipality whose associated TE estimate is very large, and whose associated post-infection event study coefficients are also large. This is our *positive case*. We also select a second municipality whose post-infection trends closely followed the ones of the control group (i.e., with 2018 and 2022 event-study coefficients close to 0 and insignificant). This is our *negative case*. In selecting the cases, we also considered variables such as population, olive tree prevalence, and proximity to the coast, aiming to keep these dimensions as similar as possible across selected cases.

Table C.1.1: Table of pre-infection covariates across positive and negative selected municipalities.

	Positive case	Negative case
Covariates considered for case selection		
Population (2011)	4,509	5,771
Olive-cultivated surf. / total surf. (2010)	16.25	14.04
Olive trees to eradicate / olive-cultivated surf. (hectares)	152.4	184.1
Landlocked	Yes	Yes
Additional covariates		
Dist. from public service hub (2013)	38.06	21.57
Pre-tax income per capita (2011)	10,722.33	13,119.65
Share of tourism-related economy (2011)	18.34	21.56
Share of votes for the monarchy (1946)	92.7	96.37

We report the key characteristics we considered in our case selection in the first part of Appendix Table C.1.1. The table shows how the cases are similar on these considered dimensions. In the second part of Appendix Table C.1.1, we report additional municipal characteristics for descriptive purposes.

We illustrate heuristically the adopted case selection strategy in Figure C.1.1. Nevertheless, we warn that the plot displays simple year-specific values or means, which are not conditioned on the municipality fixed effects, election year fixed effects, and province linear trends which we include in our baseline model employed in the above algorithm.

C.2 Selected Cases and Distribution of Distance to Services

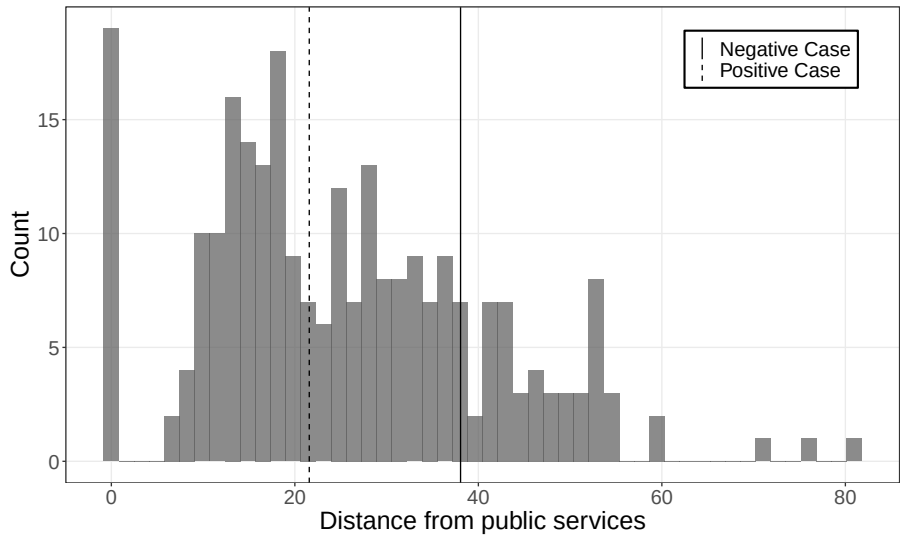


Figure C.2.1: Selected cases and Distribution of Distance to Services

C.3 Interview Guide

We follow a semi-structured interview protocol. The questions below therefore do not constitute a pre-established questionnaire to be followed during the course of the interview

but more a list of topics which, before starting the fieldwork, we considered to be relevant as a guide, leaving open the possibility to deviate from it, following our interviewee to lead us into other (even radically different) aspects of the topic. The exact formulation of the questions and their order changed from interview to interview, depending on the flow of the conversation and the issues raised by the interviewee. The baseline guide covers four thematic areas: (a) recollection of relevant events and related perceptions; (b) personal and community experience with the disaster; (c) the role of local politics; (d) life history of the interviewee and personal involvement in politics.

Recollection of Relevant Events and Related Perceptions

- When and how did you hear about Xylella for the first time?
- People have given different interpretations of this event, what is for you Xylella and have you always been of the same opinion?
- What do other people in [name of town] think about it?
- In your view, what were the main consequences for the region?
- How well do you think the disaster was managed? Who were the actors that helped the most?
- And who were the ones that helped the least? In other words, who bears responsibility for what (good and bad) happened in this disaster?
- How do you see the current status of the issue and how do you think it will develop in the future?
- In your view, what would be the current main needs of the affected areas?
- How do you think politics could best deal with these needs?

Personal and Community Experience with the Disaster

- How did Xylella affect your work and livelihood?
- Did you suffer any direct loss from the disaster?
- If so, did you receive any compensation for your losses? Was such compensation adequate?
- Did any of your personal acquaintances suffer any loss from the disaster?
- If so, did they receive adequate compensation for it?
- How do you think the community of [name of town] was affected as a whole? Do you think the disaster had any consequences beyond economic ones?
- Can you tell us more about life in [name of town] before the arrival of Xylella?
- How did life in [name of town] change after that?
- Do you think the consequences of Xylella were similar in [name of town] and in towns in its surroundings?
- If so, why do you think [name of town] is different?
- What role do you think politics played in shaping the consequences that Xylella had for [name of town]?

The Role of Local Politics

- How do you think different political parties at the national and regional level behaved during these years with regard to addressing Xylella-related issues in affected areas? Is there any party that you think behaved particularly well or particularly bad? If so, why?
- Do you remember any specific moment in which national or regional politicians interacted directly with the community of [name of town] or its surroundings (e.g.,

visit, rally, mention in the media)?
- Has Xylella been a thing for local politics? Have local politicians, people from this area that ran for a seat in parliament, campaigned over it?
- How do you think local politicians behaved with respect to the issue of Xylella?
- Is there any other association or organization beyond political parties that you think played an important role in trying to address Xylella-related issues?
- How is (are) this (these) organization(s) related to more formal party politics?
- Who are relevant people from this (these) organization(s) and what role did they play during these years?

Life History of the Interviewee and Personal Involvement in Politics
- Are you from [name of town]? If so, have you always lived here? If not, since when do you live here?
- Have you ever thought about leaving [name of town]? If so, why? And why have you decided to stay? What do you think about the people that, on the contrary decide to leave?
- What do you do for a living?
- Are you involved in any way in civic affairs of [name of town]?
- If so, when did you start getting involved and why?
- Are you affiliated with any political party/movement/association broadly involved in politics?
- Have you been involved in institutional politics (municipal administration, political parties)?
- Where those activities related in any form to dealing with Xylella-related issues?
- What did [organization] did in relation to Xylella?

C.4 Recruitment of Research Participants

To select comparable sets of participants, we followed a similar recruitment procedure in the two cases. Before the fieldwork we contacted the municipal administrations asking to interview the mayor or other available members of the administration. In Querceto, we obtained a first interview with a municipal council member. In Prosopo, we had our first interview with the mayor and a council member. During these initial interviews we asked for additional contacts within the municipal administration, party representatives from across the political spectrum, and local associations. In Querceto, the administrator we interviewed had formal party affiliation to Fratelli d'Italia. We further interviewed the mayor, affiliated to Lega, and representatives of left parties (Partito Democratico and Sinistra Ecologia e Libertà). In Prosopo, the mayor represented a broad left coalition with no explicit party affiliation and the council member had recently joined Partito Democratico. Right parties had no structured presence in town.

During our initial visits, we also looked for prominent representatives of the towns' civic society, and tried to obtain information about this in our initial interviews. In Querceto, we were pointed to the priest, the prior, and a local historian, who also managed the town's newspaper. In Prosopo, we first contacted the public library, which had a lively social media presence, and we were later pointed to a local historian, who turned out to be also an historical representative of the political opposition to the current administration (from the tradition of Democrazia Cristiana).

These contacts gave us access to the complementary archival material that we reference throughout the paper. Several research participants in Querceto pointed us to the local newspaper as a relevant source of information on the town's history. The local historian gave us access to articles providing written accounts of local historical facts mentioned in previous interviews, and helped us to identify articles with references to Xylella. While we looked for a similar local newspaper in Prosopo, several research participants told us that nothing similar existed in the town. In Prosopo, several research participants pointed us to a book telling the story of the arrival of the railway as an important reference point in the local history. We bought the book at the town's newsstand and interviewed the author, who also gave us access to additional written documents on the town's history.

To interview farmers, we relied on local farmers' associations. First, we contacted and visited the regional chapter of the main farmers' association in Bari. The regional chapter acted as a referral to the association's local chapters in Querceto and Prosopo. We visited the two chapters and obtained from them a list of farmers potentially available for interviews. The representatives of the local chapters selected these two sets of participants pointing us to individuals that, according to them, could represent different types of farmers in the area.

We integrated these core sets of interviews with complementary sources of evidence. We conducted observation sessions by visiting the two towns at similar moments of the day and holding informal conversations with residents. We also conducted interviews with additional key informants that were referenced during interviews, such as the owner of the larger shop of agricultural tools in the area.

C.5 List of Collected Interviews

Table C.5.1: Qualitative Interviews.

Date	Municipality	Recorded	Lenght	Participant role	Interview ID	Participant ID
13/04/2023	Querceto	yes	1:11	Local Politician	1	1
13/04/2023	Prosopo	yes	0:42	Librarian	2	2
13/04/2023	Prosopo	yes	1:33	Mayor; Municipal Council Member	3	3; 4
14/04/2023	Lecce	no	0:30	National Politician	4	5
17/04/2023	Querceto	yes	1:01	Shop Owner	5	6
17/04/2023	Querceto	yes	0:37	Priest	6	7
17/04/2023	Querceto	yes	1:24	Mayor	7	8
18/04/2023	Querceto	yes	0:56	Prior	8	9
19/04/2023	Querceto	yes	0:35	Local Politician	9	10
19/04/2023	Querceto	yes	1:28	Farmer; Farmer; Farmer	10	11; 12; 13
20/04/2023	Querceto	yes	1:01	Entrepreneur	11	14
20/04/2023	Prosopo	yes	0:12	Farmer Organization	12	15
20/04/2023	Prosopo	yes	1:40	Local Historian; Librarian	13	16; 2
21/04/2023	Querceto	yes	0:27	Farmer Organization	14	17;18
22/04/2023	Querceto	yes	0:57	Local Politician	15	19
24/04/2023	Prosopo	yes	0:22	Farmer	16	20
24/04/2023	Prosopo	yes	0:26	Farmer	17	21
24/04/2023	Prosopo	yes	0:16	Farmer	18	22
24/04/2023	Prosopo	yes	0:14	Farmer	19	23
24/04/2023	Prosopo	yes	0:19	Farmer	20	24
24/04/2023	Querceto	yes	0:55	Director Local Newspaper	21	25
26/04/2023	Querceto	yes	0:13	Farmer	22	26
26/04/2023	Querceto	yes	0:21	Farmer	23	27
26/04/2023	Querceto	yes	0:36	Local Politician	24	28
27/04/2023	Querceto	yes	0:15	Farmer	25	29
27/04/2023	Querceto	yes	0:39	Local Politician	26	30

C.6 Archival Material

We gained access to a few archival resources that were kept in two municipalities where we conducted our fieldwork. In order not to break the anonymization of the two selected cases, we do not provide bibliographic references for these documents. Here we provide a short description of the documents mentioned in the text.

- **Querceto, local newspaper of local history book:** Since the beginning of our fieldwork, many interviewees identified the local newspaper as a key source of knowledge about Querceto's history. Several suggested speaking with the newspaper's former director to gain insights into the towns past and access its archived issues. Unfortunately, due to his advanced age and health issues, we were unable to meet him. Instead, we interviewed the current director (Participant ID 25), a local historian whom many interviewees also identified as a key informant on the community's history. The current director assisted us by sourcing newspaper archives for references to Xylella and key historical events that emerged during our interviews. In the text, we reference four specific newspaper issues: Local-Newspaper-Querceto-1993, Local-Newspaper-Querceto-2017-1, Local-Newspaper-Querceto-2017-2, and Local-Newspaper-Querceto-2021. Additionally, the director provided us with a book she authored on the history of a local politician from Querceto which had covered key roles in the town's history. This book includes references to historical events mentioned in the main text and is cited as Local-History-Book-Querceto-2020.

- **Prosopo, local history book:** We reference a local history book obtained in Prosopo, referenced as Local-History-Book-Prosopo-2001. The book, which highlights the arrival of the railway in its title, was first mentioned by the town librarian (Participant ID 2) as a key resource for understanding the importance of the railway in Prosopo's history. Although no copies were available in the library, the librarian offered to introduce us to the book's author. We subsequently interviewed the author, a local historian (Participant ID 16), who informed us that he no longer had any copies of the book. Ultimately, we located several copies at the town newsstand and purchased one.

C.7 Additional Evidence: Dissatisfaction with Disaster Management

In both Querceto and Prosopo, residents expressed deep disappointment with the management of the outbreak from the outset. They highlight the lack of official information and that news about the outbreak primarily spread through word of mouth.[6] This dearth of official information led people to develop their own solutions in an attempt to halt the infection, often heeding advice from self-proclaimed experts.[7] Many residents bemoaned the sluggish implementation of containment and replanting measures, attributing the delays to bureaucratic complications and political conflicts.[8]

[6]Field notes and interviews. ID-2-Prosopo-Librarian. ID-3-Prosopo-Local-Politician. ID-5-Querceto-Agricultural-Shop-Owner. ID-8-Querceto-Local-Politician.

[7]Field notes and interviews. ID-1-Querceto-Local-Politician. ID-2-Prosopo-Librarian. ID-3-Prosopo-Local-Politician. ID-11-Querceto-Big-Olive-Producer.

[8]Interviews. ID-5-Querceto-Agricultural-Shop-Owner. ID-11-Querceto-Big-Olive-Producer. ID-12-Querceto-Big-Olive-Producer.

Discontent was particularly pronounced among small olive growers. Owners of one of the area's largest companies, despite grappling with bureaucratic hurdles, viewed Xylella as a mixed blessing. The replanting process allowed them to replace old trees with more productive species suited for mechanized harvesting and they received financial support for this transition.[9] Small growers lacked the incentive to navigate the intricate bureaucratic procedures for replanting and bore the costs of maintaining clean soil to limit infection.[10] Those who did make the effort to apply for replanting lamented the absence of a response.[11]

Backlash against the crisis mismanagement was not limited to the regional incumbent responsible for policy implementation, but extended to politics in general. When asked which political party had fared better, participants expressed generalized discontent. Example answers include, "they all did bad,"[12] "they are all like jokes,"[13] "they just don't care,"[14] "the maximum grade I can give them all is 5/10."[15] Another participant emphasized:"[T]he problem was not Emiliano [the regional president]." This was echoed by another participant saying :"[I]t is not a matter of left or right."[16] This widespread political disillusionment helps explain why the regional government did not face large electoral repercussions. A prominent agricultural entrepreneur affiliated with the Lega explained how they had voted and instructed "their people" to vote for the center-left incumbent in the regional elections to avoid any further delays in replanting policies that could have occurred by a change in government.[17]

C.8 Alternative Explanations: Local Political Supply

As common in Italy, the local political dynamics of both towns do not fully reflect the ideological structure at the national level and the national elections that we examine. In both Querceto and Prosopo, municipal administrations consist of local "civic lists" (*liste civiche*) with no explicit party affiliation. That said, voters in both towns viewed the two administrations as ideologically different. The Querceto administration was perceived to be on the right, while Prosopo's administration was considered to be on the left. In Querceto, the mayor and several council members were affiliated to far-right parties such as Lega and Fratelli d'Italia. In Prosopo, the mayor had no formal party affiliation, but represented a traditional left coalition including council members affiliated to Partito Democratito and Sinistra Ecologia e Libertà. In Querceto, the opposition to the local administration was made up of local politicians affiliated to far-right party Fratelli d'Italia and left parties, such as Partito Democratico and Sinistra Ecologia e Libertà. In Prosopo, the largest opposition group consisted of members of Partito Democratico, while right-wing parties had no structured presence in the town. Movimento 5 Stelle had no structured presence in either town.

[9]Interviews. ID-11-Querceto-Big-Olive-Producer. ID-12-Querceto-Big-Olive-Producer.
[10]Field notes and interviews. ID-15-Prosopo-Farmers'-Association-Representative. ID-17-Querceto-Farmers-Association-Representative; ID-18-Querceto-Farmers-Association-Representative. ID-20-Prosopo-Small-Olive-Producer. ID-21-Prosopo-Small-Olive-Producer.
[11]Interviews. ID-22-Prosopo-Small-Olive-Producer. ID-26-Querceto-Small-Olive-Producer. ID-27-Querceto-Small-Olive-Producer.
[12]Field notes-Restaurant-Owner-Querceto.
[13]Interview. ID-20-Prosopo-Small-Olive-Producer.
[14]Interview. ID-26-Querceto-Small-Olive-Producer.
[15]Interview. ID-2-Prosopo-Librarian.
[16]Interview. ID-23-Prosopo-Big-Olive-Producer. ID-5-Querceto-Agricultural-Shop-Owner.
[17]Interview. ID-11-Querceto-Big-Olive-Producer.

During our fieldwork, we considered the political leaning of the municipal administrations as well as the characteristics of the political supply available in Querceto and Prosopo as potential alternative explanations. Specifically, we considered two alternative mechanisms. The first is that local far-right political entrepreneurs may have been the promoter of the narrative of being left behind by the state. If this were to be the case, the fact that far-right politicians have a majority in the administration in Querceto may favor the spread of the narrative itself. The second alternative mechanism is that the structured presence of a far-right parties in a town acts as a prerequisite for grievances to translate into far-right support. If this were to be the case, the lack of a far-right party structure in Prosopo would prevent the shift to the far right.

Three findings from our fieldwork increase our confidence that our theorized mechanism, rather than these alternatives, matters in both cases. First, the narrative of being left behind by the state that we found in Querceto is shared and reproduced by residents from across the political spectrum. For instance, we encountered constitutive elements of this narrative in the interviews we held with both the Prior,[18] who had no explicit political affiliation, but identified himself as center left, as well as a local politician from the far-left.[19] This increases our confidence that the narrative is not the result of strategic mobilization of far-right local political entrepreneurs, but is rather generally embedded in the local culture of Querceto.

Second, the electoral fluctuations in these municipalities appear to be driven by voters' reactions to politicians at the national level, rather than by the action of local political entrepreneurs. In Querceto, the sudden increase in votes for Lega during the national elections of 2018 (in which Lega had obtained a vote share over 40%) happened before any local politician had any formal affiliations with the party. The current mayor of Querceto, who had historically been affiliated to Christian Democracy and then to Forza Italia, had moved to Lega only after this unexpected result. In our interviews, a Querceto council member from Fratelli d'Italia explained to us how, despite the efforts of local politicians, voters were nowadays primarily casting their vote based on what they learned through social media.[20] A similar idea was conveyed to us by a local politician, affiliated to the local faction of Fratelli d'Italia that was opposed to the municipal administration. This politician told us how the activities of local political entrepreneurs had in fact only little bearing on voters' choices in elections.[21]

Finally, the absence of a party structure on the ground in these municipalities does not seem to be an obstacle to electoral success in national elections. In both Querceto and Prosopo, Movimento 5 Stelle had gained large vote shares in national elections since 2013 (about 20% in the 2013 and 2022 elections and over 40% in 2018). Local politicians stressed how this success had happened without any presence of party structure or organized campaigning in both towns.[22] This and the previous fact indicate that an increase in far-right vote share would have been possible in the negative case regardless of the local party supply. Overall, these findings reassure us on the relevance of our theorized mechanism in explaining the observed increase in far-right vote regardless of the different municipal administrations and the structure of political supply in both towns.

[18] ID-9-Querceto-Prior.
[19] ID-30-Querceto-Local-Politician.
[20] ID-1-Querceto-Local-Politician.
[21] ID-19-Querceto-Local-Politician.
[22] ID-3-Prosopo-Local-Politician; ID-4-Local-Politician. ID-19-Querceto-Local-Politician.

Appendix References

Agenzia per la Coesione Territoriale. 2014a. *Classificazione Comuni.* Strategia Nazionale Aree Interne.

———. 2014b. *Database Indicatori e Variabili Comunali.* Strategia Nazionale Aree Interne.

Athey, Susan, Mohsen Bayati, Nikolay Doudchenko, Guido Imbens, and Khashayar Khosravi. 2021. "Matrix Completion Methods for Causal Panel Data Models." *Journal of the American Statistical Association* 116 (536): 1716–1730.

Bansak, Kirk. 2021. "Estimating Causal Moderation Effects with Randomized Treatments and Non-Randomized Moderators." *Journal of the Royal Statistical Society: Series A (Statistics in Society)* 184 (1): 65–86.

Barbera, Filippo, and Alessia Zabatino. 2022. "Potere di Riconoscimento, Diseguaglianze Territoriali e Politiche Pubbliche." *Rivista delle Politiche Sociali* 2:17–32.

Barca, Fabrizio, Paola Casavola, and Sabrina Lucatelli. 2014. "A Strategy for Inner Areas in Italy: Definition, Objectives, Tools and Governance." *Materiali UVAL (Unità di Valutazione del Dipartimento per le Politiche di Sviluppo)* Rome Court Authorisation No. 513/2004.

Callaway, Brantly, and Pedro H.C. Sant'Anna. 2021. "Difference-in-Differences with Multiple Time Periods." *Journal of Econometrics* 225 (2): 200–230.

Carrosio, Giovanni. 2020. "Nuovo Populismo e Domanda di Riconoscimento nelle Aree Rurali Italiane." *Studi di Sociologia* 1:45–62.

Case, Anne, and Angus Deaton. 2020. *Deaths of Despair and the Future of Capitalism.* Princeton University Press.

Cassano, Antonello. 2021. "Caso Nardò, Emiliano sul Candidato di Estrema Destra: "Mellone Diventi Antifascista per Restare con Me"," October 6, 2021.

Colella, Fabrizio, Rafael Lalive, Seyhun Orcan Sakalli, and Mathias Thoenig. 2019. *Inference with Arbitrary Clustering.* IZA Discussion Paper No. 12584.

Cotella, Giancarlo, and Elisabetta Vitale Brovarone. 2020. "The Italian National Strategy for Inner Areas: A Place-based Approach to Regional Development," ed. by Jerzy Baski Baski. Routledge.

Cunningham, Scott. 2021. *Causal inference: The Mixtape.* Yale University Press.

De Chaisemartin, Clément, and Xavier d'Haultfoeuille. 2020. "Two-way Fixed Effects Estimators with Heterogeneous Treatment Effects." *American Economic Review* 110 (9): 2964–2996.

De Vries, Catherine E, and Sara B Hobolt. 2020. *Political Entrepreneurs.* Princeton University Press.

Font, Nuria, Paolo Graziano, and Myrto Tsakatika. 2021. "Varieties of inclusionary populism? SYRIZA, Podemos and the Five Star Movement." *Government and Opposition* 56 (1): 163–183.

Gelman, Andrew, and John Carlin. 2014. "Beyond Power Calculations: Assessing Type S (Sign) and Type M (Magnitude) Errors." *Perspectives on Psychological Science* 9 (6): 641–651.

Hainmueller, Jens, Jonathan Mummolo, and Yiqing Xu. 2019. "How Much Should We Trust Estimates from Multiplicative Interaction Models? Simple Tools to Improve Empirical Practice." *Political Analysis* 27 (2): 163–192.

ISTAT. 2001. *Censimento Nazionale 2001.* Istituto Nazionale di Statistica.

———. 2010. *Censimento Generale dell'Agricoltura.* Istituto Nazionale di Statistica.

———. 2011. *Censimento Nazionale 2011.* Istituto Nazionale di Statistica.

———. 2014. *Matrici delle Distanze per Regione.* Istituto Nazionale di Statistica.

———. 2022a. *Basi Territoriali e Variabili Censuarie.* Istituto Nazionale di Statistica.

———. 2022b. *Indagine sui Decessi e sulle Cause di Morte.* Istituto Nazionale di Statistica.

———. 2022c. *Reddito delle Persone Fisiche (IRPEF).* Istituto Nazionale di Statistica.

———. 2022d. *Ricostruzione Intercensuaria della Popolazione Residente.* Istituto Nazionale di Statistica.

Lehmann, Pola, Simon Franzmann, Tobias Burst, Sven Regel, Felicia Riethmuller, Andrea Volkens, Bernhard Wessels, and Lisa Zehnter. 2023. *The Manifesto Data Collection. Manifesto Project (MRG/CMP/MARPOR). Version 2023a.* Berlin / Gottingen: Wissenschaftszentrum Berlin fur Sozialforschung / Gottingen Institut fur Demokratieforschung.

Lucatelli, Sabina, Francesco Monaco, and Filippo Tantillo. 2019. "La Strategia delle aree interne al servizio di un nuovo modello di sviluppo locale per l'Italia." *Rivista economica del Mezzogiorno, Trimestrale della Svimez* 3-4:739–771.

MEF. 2011. *OpenCivitas.* Ministero dell'Economia e delle Finanze.

———. 2014. *OpenCivitas.* Ministero dell'Economia e delle Finanze.

———. 2022. *Open Data sulle Dichiarazioni Fiscali.* Ministero dell'Economia e delle Finanze.

Ministero dell'Interno. 2024. *Eligendo. Archivio Storico delle Elezioni.*

Mosca, Lorenzo, and Filippo Tronconi. 2021. "Beyond Left and Right: The Eclectic Populism of the Five Star Movement." In *Varieties of Populism in Europe in Times of Crises,* 118–143. Routledge.

Moscarelli, Rossella. 2023. "The Italian Strategy for the Inner Areas: A Recent Policy to Reduce Marginality." In *Linear Planning to Reduce Regional Inequality: A Theoretical Review and the Case of the Way of St. James,* 97–107. Springer.

Nannicini, Tommaso, Andrea Stella, Guido Tabellini, and Ugo Troiano. 2013. "Social Capital and Political Accountability." *American Economic Journal: Economic Policy* 5 (2): 222–250.

Napolitano, Pasquale. 2020. "PD Terrorizzato in Puglia Emiliano Firma l'Alleanza con il Sindaco ex Fascista." *IlGiornale,* August 23, 2020.

Panarelli, Giunio. 2021. "Così Emiliano Ha Usato la Destra per Prendersi la Puglia." *Domani,* October 13, 2021.

Reif, Karlheinz, and Hermann Schmitt. 1980. "Nine Second-Order National Elections–a Conceptual Framework for the Analysis of European Election Results." *European Journal of Political Research* 8 (1): 3–44.

SIT Puglia. 2022. *Servizio WMS Zone Delimitate dall'Emergenza Xylella Fastidiosa.* Portale Emergenza Xylella. Servizio Informativo Territoriale Regione Puglia.

Sun, Liyang, and Sarah Abraham. 2021. "Estimating Dynamic Treatment Effects in Event Studies with Heterogeneous Treatment Effects." *Journal of Econometrics* 225 (2): 175–199.

Wager, Stefan, and Susan Athey. 2018. "Estimation and Inference of Heterogeneous Treatment Effects Using Random Forests." *Journal of the American Statistical Association* 113 (523): 1228–1242.