

# Without Roots: The Political Consequences of Collective Economic Shocks

SIMONE CREMASCHI *Bocconi University, Italy*

NICOLA BARILETTO *University of Texas at Austin, United States*

CATHERINE E. DE VRIES *Bocconi University, Italy*


**W**hile an abundance of scholarly work investigates how economic shocks influence the political behavior of affected individuals, we know much less about their collective effects. Exploiting the sudden onset of a plant disease epidemic in Puglia, Italy—where the plant pathogen *Xylella fastidiosa* devastated centuries-old olive groves—we explore the collective effects of economic shocks. By combining quantitative difference-in-differences analysis of municipal data with a novel case selection strategy for qualitative fieldwork, we document the hardship caused by the outbreak, and estimate a 2.2-percentage-point increase in far-right vote share. We show that preexisting public service deprivation moderates the shock's political consequences through a community narrative of state neglect. These findings highlight that preexisting community conditions shape the political consequences of economic shocks, and that plant disease epidemics—which are becoming more prevalent due to climate change—have important political effects.


## INTRODUCTION

**P**olitical science research has long explored the link between economic shocks and political preferences and behavior (for a recent overview, see Margalit 2019b). From the classical notion in Marxist political thought that economic crises act as an important catalyst for changing political ideas and triggering revolutions (Marx [1859] 2010), to the key insight that economic crises give voters new information about incumbent performance from the literature on electoral accountability (Ashworth, Bueno de Mesquita, and Friedenberg 2018), there is a general consensus that economic shocks have important political implications. The Great Recession of 2007–2009 has inspired a new wave of empirical studies of this intuition based on fine-grained data and novel inference methods. This research has explored whether shifts in individuals' political preferences and behavior caused by their experiences with economic shocks are more rooted in material considerations (such as income or redistribution preferences, e.g., Margalit 2013; Scheve

and Serlin 2023) or broader cultural values (such as ethnocentrism or status concerns, e.g., Ballard-Rosa et al. 2021; Baccini and Weymouth 2021). While this scholarship provides a sophisticated understanding of how shocks affect the political preferences and behaviors of affected individuals, our understanding of shocks as *collective* experiences (and their associated political consequences) remains limited. Some scholars have argued that economic shocks generate socio-tropic concerns about the fate of affected communities (Colantone and Stanig 2019; Mutz 2018) or examined the role of local community networks (Bolet 2021; Colombo and Dinas 2023; Patana 2022), yet to date, we know much less about how (or why) community dynamics shape the political outcomes of economic shocks.

We examine economic shocks as collective experiences by exploring the political consequences of plant disease epidemics. Such epidemics have occurred with grim regularity throughout human history. They produce devastating ecological, economic, and social consequences on a global scale, and are expected to become more prevalent due to anthropogenic environmental changes associated with global warming, increased global connectivity, and monoculture (Bebber, Ramotowski, and Gurr 2013; Singh et al. 2023; Velásquez, Castroverde, and He 2018). The rapid onset and localized progression of plant disease epidemics allows us to focus on community dynamics that are usually obscured by longer-term macro-structural changes in the study of other kinds of economic shocks, such as those caused by trade or deindustrialization. We develop and test a set of deductive expectations and inductively build a theory to explain how affected communities attribute political meaning to a shock.

Simone Cremaschi , Postdoctoral Research Fellow, Dondena Centre for Research on Social Dynamics and Public Policy and Department of Social and Political Sciences, Bocconi University, Italy, [simone.cremaschi@unibocconi.it](mailto:simone.cremaschi@unibocconi.it).

Nicola Bariletto , PhD Candidate, Department of Statistics and Data Sciences, University of Texas at Austin, United States, [nicola.bariletto@utexas.edu](mailto:nicola.bariletto@utexas.edu).

Corresponding author: Catherine E. De Vries , Professor of Political Science, Department of Social and Political Sciences and Dondena Centre for Research on Social Dynamics, Bocconi University, Italy, [catherine.devries@unibocconi.it](mailto:catherine.devries@unibocconi.it).

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Combining insights from research on the consequences of economic shocks (Ahlquist, Copelovitch, and Walter 2020; Colantone and Stanig 2018b; Margalit 2019b) with scholarly work on collective, place-based resentment (Colombo and Dinas 2023; Cramer 2016; Huijismans 2023; Ziblatt, Hilbig, and Bischof 2024), we argue that plant disease epidemics enhance the electoral appeal of far-right parties.

We theorize that the adverse economic and sociocultural consequences of economic shocks, such as those generated by plant pathogen outbreaks, extend beyond immediate disaster management and relief (Arceneaux and Stein 2006; Bechtel and Hainmueller 2011; Gasper and Reeves 2011; Healy and Malhotra 2013; Malhotra and Kuo 2008) to concerns about the fate of one's community and its economic livelihood—thereby increasing the appeal of far-right parties' messaging about resentment of political elites and appeals to peripheral communities (Elgenius and Rydgren 2017; Mudde 2007; Patana 2022; Ziblatt, Hilbig, and Bischof 2024). Affected communities that already resent the state due to a lack of access to local public services (Cremaschi et al. 2024; Nyholt 2024; Rickardsson 2021; Stroppe 2023) are especially receptive to far-right rhetoric. These communities feature a preexisting narrative (DiMaggio 1997; Small, Harding, and Lamont 2010; Somers 1994) of being left behind, which reflects residents' shared belief that political elites have abandoned their communities and the state has not distributed the community's fair share of public goods (Ziblatt, Hilbig, and Bischof 2024). Such narratives encourage residents to interpret the economic and sociocultural hardships caused by an economic shock as yet another manifestation of being left behind.

We empirically evaluate our argument by leveraging a multi-method research design that combines quantitative design-based causal inference with in-depth qualitative fieldwork in carefully selected cases. We examine the sudden outbreak of the plant pathogen *Xylella fastidiosa* subspecies *pauca* (hereafter *Xylella*), which was first identified in 2013; it has devastated centuries-old olive groves in Puglia, one of the world's leading olive oil-producing regions. The pathogen continues to pose a major threat to olive oil production in the Mediterranean basin (Bajocco, Raparelli, and Bregaglio 2023; Schneider et al. 2020), with an estimated potential annual loss of EUR 5.5 billion for European Union (EU) countries (Sanchez et al. 2019), and the risk of future outbreaks is expected to increase due to rising temperatures in the region (Farigoule et al. 2022). In Italy, the outbreak affected an area of about 3,000 square miles (Camera dei Deputati 2022), resulting in estimated losses of up to EUR 1.2 billion in the first 4 years (Conti 2019). Our quantitative difference-in-differences (DID) analysis of municipal-level data supports our expectations: we find that the outbreak increased electoral support for far-right parties (by 2.2 percentage points) because it produced economic and sociocultural hardship; this effect was more pronounced in municipalities with poor public service delivery before the epidemic. We examine the robustness of these findings by demonstrating that there is a

balance between treated and control municipalities on key covariates, conducting randomization inference tests, ruling out the possibility that compositional effects are driving our results, accounting for potential spatial correlation, and relying on different measures and model specifications. We also establish that our main finding (that increased far-right support due to the outbreak was more pronounced in public-service-deprived communities) is robust to using a residualized version of our public service measure, estimating high-dimensional heterogeneous treatment effects (HTEs) using machine-learning methods, and employing alternative public service measures.

Our qualitative fieldwork—based on interviews, complemented by direct observation and examining local documents—deepened our mechanistic understanding of the outbreak's consequences for the local economy, community history, and identity. It provided insights into the electoral consequences by uncovering the motives, perceptions, and meanings of residents in affected communities. In line with our intuition, the qualitative evidence suggests that residents of a community in which the outbreak generated a substantial far-right shift embrace a narrative of being left behind by the state and interpret the epidemic as a product of long-term neglect by the ruling political elites. We find no evidence of this narrative in an equally affected community where the far right did *not* gain substantially from the epidemic. The qualitative fieldwork helps us better understand how exposure to the outbreak generated grievances that have the potential to bolster far-right support in affected communities, and how a preexisting community narrative of being left behind shapes the extent to which they do so.

The study makes three important contributions to the literature. First, our findings inform the scholarly debate over which factors drive far-right support in the aftermath of an economic shock (Agnolin, Colantone, and Stanig 2024; Margalit 2019a; Mutz 2018; Rodrik 2021). Our results suggest that shocks do not occur in isolation, but are important collective experiences and interact with preexisting community conditions (Margalit 2019b; Retzl 2022). Building on prior work in the field of cultural sociology (DiMaggio 1997; Small, Harding, and Lamont 2010; Swidler 1986), we demonstrate how historically rooted community narratives help explain the divergent political consequences of economic shocks we observe. Second, we provide causal evidence of the political consequences of an important type of economic shock (a plant disease epidemic) that is expected to become more common due to global warming, globalization, and modern agricultural practices. These findings advance our understanding of how communities that are exposed to environmental degradation give political meaning to their experience (Auyero and Swistun 2009; Hochschild 2018; Petryna 2002) expanding our understanding of the political consequences of climate change (Howe et al. 2019). In a final contribution, our study proposes an innovative research design template for how to combine design-based causal inference with in-depth

qualitative fieldwork to better develop and test social science explanations.

## THE POLITICAL CONSEQUENCES OF PLANT DISEASE EPIDEMICS

Plant disease epidemics are a pertinent example of collective economic shocks. Throughout history, such epidemics have had far-reaching consequences for affected communities, including food shortages, economic losses, shifts in agricultural practices, and social upheavals. In 1845, the potato pathogen *Phytophthora infestans* triggered the Irish famine that led to over 2 million deaths and mass emigration (Goss et al. 2014), while in 1863, the insect pest known as Phylloxera (*Daktulosphaira vitifoliae*) devastated European vineyards, permanently reshaping the wine industry and leaving long-lasting health scars in the most affected regions (Banerjee et al. 2010). More recently, coffee rust outbreaks caused by the *Hemileia vastatrix* fungus in Central America led to over 50% yield losses, leaving 400,000 coffee workers without livelihoods (Avelino et al. 2015).

These examples vividly illustrate the dramatic implications of plant disease epidemics as collective economic shocks, but we know much less about their political consequences. Political scientists have extensively studied the political consequences of other natural disasters, such as floods or hurricanes (e.g., Bechtel and Hainmueller 2011; Malhotra and Kuo 2008). The conventional view is that voters affected by natural disasters primarily evaluate incumbents based on their disaster relief performance (Gasper and Reeves 2011) and degree of preparedness (Arceneaux and Stein 2006).<sup>1</sup> Evidence from the United States and India, for example, suggests that incumbents face electoral repercussions for mishandling aspects of a disaster that are within their control, such as failing to provide disaster relief (Blankenship et al. 2021; Healy and Malhotra 2010; Stout 2018). Evidence from Italy and Brazil shows that control of relief funds and opportunities to claim credit can confer advantages on incumbents due to increased media visibility (Masiero and Santarossa 2021) or the strategic use of emergency declarations to release relief funds (Cooperman 2021). While plant disease epidemics share similarities with natural disasters previously studied by political scientists, their capacity to cause significant and long-term crop yield losses makes them a prime example of a collective economic shock that not only threatens a locality's economic well-being, but also erodes community life associated with the commodity. As a result, the political consequences of plant disease epidemics likely

extend beyond immediate disaster management and relief; they cause long-term economic and sociocultural disruption. The remainder of the section discusses each in turn.

When a plant disease affects a crop central to a community's *economy*, it impairs production in a way that can resemble either shorter economic crisis episodes or long-term processes of economic decline, both of which have been shown to have far-reaching political consequences (see Margalit 2019b; Rodrik 2021; Walter 2021 for overviews). One strand of the literature has demonstrated that economic shocks and long-term decline boost support for left-wing parties because adversely affected voters demand more government protection and spending (e.g., Scheve and Serlin 2023; Scheve and Slaughter 2004; Walter 2010). Another strand of research has linked these shocks and declines to an increased demand for right-wing parties with authoritarian and nativist policy platforms that address identity concerns among majority-group members about minority groups (e.g., Baccini and Weymouth 2021; Ballard-Rosa et al. 2021; Carreras, Irepoglu Carreras, and Bowler 2019; Colantone and Stanig 2018a). There is no consensus on why exposure to economic shocks or long-term decline leads to one result rather than the other (Margalit 2019b; Retzl 2022).

Plant disease epidemics also have *sociocultural* consequences for communities. They are fundamentally collective experiences that disrupt a community's way of life and may erode local identities linked to the specific crop. The literature on place-based resentment, which is mostly based in Europe and the United States, has established that the sociocultural consequences of economic shocks or long-term decline can increase the programmatic appeal of parties stressing place-based identities and inequalities and promising to restore the status of neglected places (Cramer 2016; Elgenius and Rydgren 2017; Hochschild 2018; Mudde 2007). Grievances associated with downward trajectories of sociocultural change have been shown to fuel support for far-right parties in affected communities (Bolet 2021; Gidron and Hall 2020; Patana 2020). For example, some U.K. voters appear to have moved to the far right after sociocultural degradation associated with an economic downturn forced community meeting places to close (Bolet 2021). Sociocultural decline may also bring about a sense of collective status threat among ethnocultural majorities that far-right political entrepreneurs can exploit at the ballot box, for example, by scapegoating immigrants or mainstream political elites (Bonikowski 2017; De Vries and Hobolt 2020; Mutz 2018). The combination of economic and sociocultural hardship associated with an outbreak is thus crucial for understanding the political effects of plant disease epidemics and collective economic shocks more generally.

## The Increasing Appeal of Far-Right Parties

Plant disease epidemics are best understood as collective traumatic events that affect the economic sustenance and community life of places associated with the vulnerable crop (Erikson 1978; Pañeda-Fernández

<sup>1</sup> For a more critical view of retrospection, see Achen and Bartels (2016). More recent research explores how natural disasters connected to climate change affect pro-climate voting (Baccini and Leemann 2021; Cremaschi and Stanig *Forthcoming*; Garside and Zhai 2022; Hazlett and Mildenerger 2020; Hilbig and Riaz 2024; Pianta and Retzl 2023).

2021). While outbreaks may generate less immediate physical devastation than other natural disasters, we argue that they create long-lasting grievances due to the combination of economic hardship and loss of community life (Bolet 2021; Cramer 2016; Hochschild 2018). Beyond serving as an important means of subsistence, the typical crops grown in a geographic area play a pivotal role in structuring community life and giving residents a deep-rooted “sense of place” (Agnew 1987; Rowling 2022). The economic and sociocultural hardship associated with plant disease epidemics shapes how individuals relate to their surroundings and with each other (Bell 1992; Cohen 1985; Macgregor 2013; Wuthnow 2015).

Building on prior cultural sociology research (DiMaggio 1997; Small, Harding, and Lamont 2010; Swidler 1986), we argue that plant disease epidemics have the potential to bolster far-right support in affected communities due to the socioeconomic and sociocultural grievances they generate (Ballard-Rosa et al. 2021; Bolet 2021; Cramer 2016), but preexisting conditions determine the extent to which they do. Historically rooted *community narratives*—which we define as the stories people tell each other about the place they live in—give residents of affected communities a lens through which to interpret the outbreak and attach political meaning to their experience. These narratives serve as guiding frameworks that influence interpretations of new experiences and shape strategic responses to them (Harding 2007; Rosen 2017; Small 2002). Building on this notion, we argue that support for far-right parties after a plant disease epidemic is higher in communities that already espoused a narrative of being left behind and abandoned by the state.

This narrative reflects a sense of feeling peripheral to an area, and such feelings of being left behind have been shown to matter for rural residents (Cramer 2016; Cramer Walsh 2012). We link the community narrative of being left behind to places that resent the state for historically poor public service provision (Cremaschi et al. 2024; Nyholt 2024; Rickardsson 2021; Stroppe 2023). Access to services such as hospitals, schools, and transport links is one of the most direct ways in which the state and political elites affect citizens’ lives. It provides a tangible basis for evaluating how taxes are being spent, and how willing the state is to invest in certain communities (Dowding and John 2012; Hern 2019). In public-service-deprived areas, residents share a community narrative of repeated exposure to “distributive injustices” by those in power (Zibblatt, Hilbig, and Bischof 2024, 1483). Communities that are less connected to national decision-making centers begin to feel they have been left behind by the state and ruling political elites, and that they have not received their fair share of public spending and services (Cramer 2016; Hochschild 2018; Patana 2020; Zibblatt, Hilbig, and Bischof 2024).

The community narrative of being left behind shapes residents’ perceptions of themselves as well as others, including politicians. It thus provides a powerful lens through which to interpret the outbreak and the associated hardship as further evidence that the state and

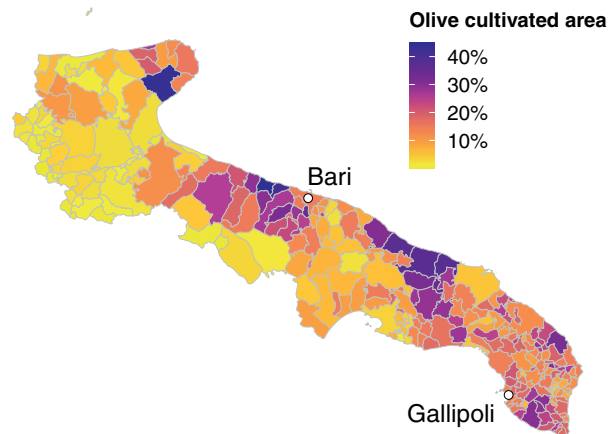
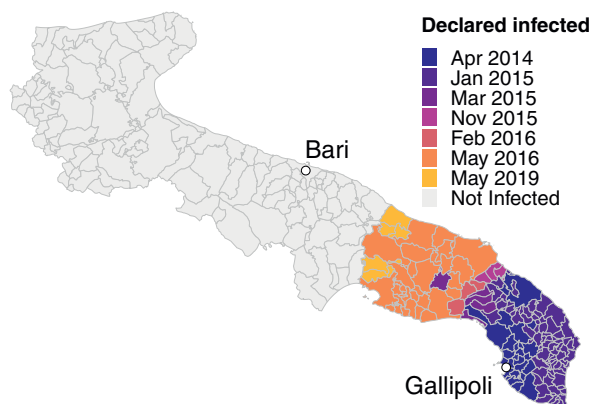
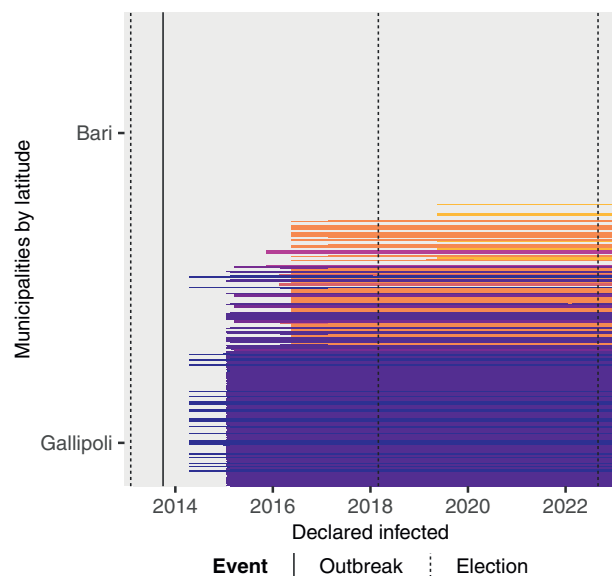
ruling elites do not care about their communities. Building on prior work which has established that having limited access to public services erodes trust in state institutions and bolsters support for far-right parties (Cremaschi et al. 2024; Nyholt 2024; Rickardsson 2021; Stroppe 2023), we argue that exposure to plant disease epidemics fuels support for the far right in areas with poor access to public services that embrace a narrative of being left behind by the state. In these areas, left-wing messaging about state redistribution is unlikely to gain support due to assumptions that universalist welfare spending would not benefit the local community (Cramer 2016; Cremaschi et al. 2024).

Our argument stems from a combination of deductive expectations and inductive theory building. The literature on economic shocks and place-based resentment leads us to develop concrete expectations about how the economic and sociocultural hardship caused by the outbreak shapes its political effects, and how public service deprivation moderates it. Our qualitative fieldwork deepens our mechanistic understanding of the outbreak’s impact on the local economy and community life, and helps us identify residents’ motives, perceptions, and meanings that shape the electoral outcomes we observe in affected communities. The fieldwork reveals how a community narrative of being left behind by the state determines the extent to which exposure to the Xylella outbreak fuels far-right support. Our evidence comes from a high-income country in which the state traditionally delivers key services such as health care or public transport, and a multiparty political system in which populism is an established political force. While Italian politics has in many ways been at the forefront of the wave of far-right electoral success in the advanced industrial world, and is therefore an important case to study, future research should empirically test our argument’s scope conditions about the political consequences of plant disease epidemics.

## THE CASE OF PUGLIA

### The Xylella Outbreak

Puglia has a strong primary sector economy; olive tree cultivation and olive oil production constitute an essential component. In the marketing year 2013–14, Italy was the second-largest producer of olive oil in the EU, with 18.6% of the total EU production. Puglia was the country’s largest olive-producing region that year, accounting for 40.1% of the national production, followed by Calabria (20.2%), Sicilia (11.3%), and Campania (8.1%). As Figure 1b indicates, olive tree plantations are evenly spread across the region with a higher concentration in four of its six provinces—the northern Barletta, Andria, Trani, and Bari and the southern provinces of Brindisi and Lecce. Olive orchards constitute a prominent feature of Puglia’s landscape and cultural heritage, encompassing an estimated 60 million olive trees, including 5 million over 100 years old and 300,000 that are at least 1,000 years

**FIGURE 1. The Xylella Outbreak****(a) Treatment and Control Areas****(b) Olive Cultivation (2010)****(c) Infection Timing (Map)****(d) Infection Timing (Sequence Plot)**

Note: Panel a shows 2022 provincial and municipal borders. Panels b, c, and d show 2022 municipal borders.

old (Conti 2019). A 1950 land reform and subsequent division of inherited land into small parcels broadly distributed ownership of the orchards across the population. In the areas most affected by the Xylella outbreak, about 80% of the owners have a small plot of 50–70 trees, which are mainly used for family consumption.<sup>2</sup>

<sup>2</sup> Interview. ID-15-Prosopo-Farmers'-Association-Representative.

Xylella causes olive quick decline syndrome, which restricts the flow of sap within the tree (Schneider et al. 2020). Affected trees lose their leaves and stop producing olives; they usually die within 2–5 years (Saponari et al. 2018). It came to Italy via a commercial plant shipment from Costa Rica to the port of Gallipoli and was spread by the spittlebug *Philaenus spumarius* (Bajocco, Raparelli, and Bregaglio 2023; Kottelenberg et al. 2021). Scientists have established a positive correlation between the prevalence of insects carrying the Xylella bacterium and increasing temperatures in the

Mediterranean region (Farigoule et al. 2022). The projected milder winters in the region are expected to increase the risk of further Xylella outbreaks.

By the time the Xylella outbreak was discovered in Puglia in October 2013, 30–40 square miles of olive trees were already infected (Scortichini et al. 2021). The known infected area almost tripled during the following year, extending to the entire province of Lecce (Kottelenberg et al. 2021). By 2018, the successful implementation of containment measures considerably slowed the spread of the bacterium and protected the region's northern areas from infection. By that time, over half (about 6.5 million of 11 million) of the trees in the area had been infected (Bajocco, Raparelli, and Bregaglio 2023; Conti 2019), resulting in yield losses equivalent to 10% of the national production (Kottelenberg et al. 2021). Figures 1c and 1d visualize the spread of the disease according to official data released from April 2014.

Ongoing containment measures include the eradication and destruction of suspected infected plants, constant monitoring in surrounding areas, a ban on transporting infected organic material, and a mandate for landowners to keep land clean (e.g., cutting weeds) in areas considered at risk. Since 2015, the national government has also provided economic support to affected farmers and encouraged them to replace infected trees with species resistant to the bacterium. As of 2022, EUR 243 million had been allocated to manage the emergency (Camera dei Deputati 2022). However, slow and intricate political decision-making and bureaucratic implementation processes have delayed the adoption of containment and replanting measures.

## The Political Environment

During the Xylella outbreak, the Italian political landscape featured a diverse array of parties from the entire political spectrum. This increases our confidence that enhanced far-right support does not simply reflect the absence of far-left supply. Parties on the far left include those in the tradition of the Italian Communist Party, such as Left Ecology Freedom (*Sinistra Ecologia e Libertà*) and, since 2013, the Five Star Movement (*Movimento 5 Stelle*).<sup>3</sup> Parties on the far right include the originally regionalist League (*Lega*) party, which had become a “national” far-right party by 2013, and the nationalist Brothers of Italy (*Fratelli d'Italia*), established in 2012 following in the footsteps of the Fascist National Party's republican heir, the Italian Social Movement (*Movimento Sociale Italiano*).

While right-leaning parties have traditionally enjoyed significant support in Puglia, the left has made inroads in the region in recent years. In 2010, a broad center-left coalition led by far-left leader Nichi Vendola won

<sup>3</sup> Albeit hard to classify on the traditional left–right dimension, we include the Five Star Movement in the far-left bloc because it is a prominent advocate of income redistribution. Section B.21 of the Supplementary Material further discusses this classification.

regional elections. Since then, Puglia has been governed by a left-wing coalition led by Democratic Party (*Partito Democratico*) leader Michele Emiliano after 2015. The Five Star Movement received the highest vote share in the 2018 (44.94%) and 2022 (28.28%) national elections, followed closely in the latter by the far-right Brothers of Italy (23.5%).

As the leading force in the regional government throughout the outbreak, the Democratic Party assumed political responsibility for managing the disaster and distributing relief.<sup>4</sup> Prior work on incumbent approval in the aftermath of natural disasters (Healy and Malhotra 2013) would lead us to expect the public authorities' initial inability to contain the spread of the bacterium and the sluggish implementation of the replanting and compensation programs to generate an electoral penalty for the Democratic Party. During the outbreak, all major parties shifted positions (ranging from advocating to opposing eradication) or supported contrasting positions at the regional versus national levels (see Section A.2 of the Supplementary Material). These shifting stances partially reflect difficulties in understanding the spread of the outbreak and contributed to delays in containment—which could have led to voter disengagement and reduced turnout in affected areas. We address these additional expectations in our analysis.

## RESEARCH DESIGN

We employ an integrative, two-step multi-method research design (Goertz 2017; Seawright 2016a). First, we analyze time-varying electoral, economic and social administrative data across Puglia's municipalities. In a second step, we conduct an in-depth case study based on extensive qualitative fieldwork in two affected municipalities.

## Quantitative Analysis

Our identification strategy exploits the geographic variation and timing of the Xylella outbreak. We rely on official data provided by the regional government's Geographic Information Service (SIT Puglia 2022), which tracked the time of infection across municipalities starting 6 months after the bacterium was first isolated.<sup>5</sup> As Figures 1c and 1d illustrate, while some (139 out of 257) municipalities in Puglia were declared infected between April 2014 and May 2019, others (118) were not touched by the bacterium by the end of 2022. This setting allows us to employ a DID strategy to compare the pre- and post-infection change in the outcomes between infected and uninfected municipalities,

<sup>4</sup> At the national level, League, Democratic Party, and Five Star Movement have alternated in office to form shifting coalitions and share public responsibility for adopted measures. Table A.1.1 in the Supplementary Material provides a timeline of political incumbents at the national and regional levels.

<sup>5</sup> Municipalities are declared infected after the regional task force's active monitoring identifies the presence of the bacterium in the area.

and thus estimate the average treatment effect on treated (ATT) units.

Our main model examines how the outbreak affected the share of valid votes for different political blocs and turnout in national elections for the lower chamber (*Camera dei Deputati*) based on official electoral data (Ministero dell'Interno 2024). We exploit two aspects of the timing of the outbreak and elections to estimate our two-way fixed-effect (TWFE) model: (1) Xylella was first detected in October 2013, almost a year after the February 2013 parliamentary election and (2) the bacterium had reached all but six (133) of the eventually infected municipalities by April 2016, almost 2 years before the next national election was held in March 2018. We use the following equation:<sup>6</sup>

$$Y_{i,t} = \beta X_{i,t} + \mu_i + \lambda_t + L_{p(i)}(t) + \varepsilon_{i,t}, \quad (1)$$

where

- $Y_{i,t}$  measures the electoral outcome for municipality  $i \in \mathcal{I}$  in election year  $t \in \mathcal{T} := \{2001, 2006, 2008, 2013, 2018, 2022\}$ ;
- $X_{i,t} := \mathbb{1}_{\mathcal{I}_{inf} \times \mathcal{T}_{post}}(i, t)$ ; (i)  $\mathcal{I}_{inf} \subset \mathcal{I}$  denotes the subset of infected municipalities and (ii)  $\mathcal{T}_{post} := \{2018, 2022\}$ , that is,  $\mathcal{T}_{post}$  the subset of post-infection election years;
- $\mu_i$  and  $\lambda_t$  are municipality- and year-specific intercepts;
- $(p, t) \mapsto L_p(t)$  is a province-level linear time trend,<sup>7</sup> while  $i \mapsto p(i)$  maps municipality  $i$  onto the group of municipalities defining the province to which  $i$  belongs; and
- $\varepsilon_{i,t}$  is an error term, which we allow to be correlated within individual municipalities across years.

To avoid a staggered DID setting and the well-documented theoretical difficulties this would pose for TWFE estimation (see, e.g., De Chaisemartin and d'Haultfoeuille 2020), we exclude the six municipalities infected after 2018 from the sample used to estimate Equation 1. This allows us to interpret the coefficient  $\beta$  as an estimate of the ATT while retaining the flexibility of the TWFE specification, which lends itself to natural extensions for HTE analysis and further robustness checks.

We estimate four additional models that we describe in detail in Section B.1 of the Supplementary Material. First, we estimate TWFE event-study equations (Equation B.1.1 in the Supplementary Material) to test the pre-treatment parallel-trends assumption underlying our DID design. Second, we estimate staggered

DID equations, following the methodology proposed by Callaway and Sant'Anna (2021),<sup>8</sup> to examine the outbreak's economic and sociocultural consequences using yearly measurements of municipal-level indicators. Third, we test our hypothesis about the moderating effect of public services and validate our treatment measure by estimating interaction specifications (Equation B.1.2 in the Supplementary Material) that generalize the binning estimator suggested by Hainmueller, Mummolo, and Xu (2019). Finally, we run a set of additional empirical tests that we describe in the "Robustness Checks" section.

## Qualitative Analysis

We conduct an in-depth qualitative study of a "positive case" (a municipality where the DID analysis reveals that the Xylella outbreak increased far-right support) and a "negative case" (a comparable municipality where we detected no electoral consequences). Our approach differs from common mixed-methods strategies in two respects. First, it aims to identify the most suitable cases for ethnographic fieldwork to reveal the mechanisms underlying the causal effect identified in the quantitative analysis. This objective differs from enhancing model specification (Lieberman 2005) or identifying intermediate variables and refining estimates of causal effects (Humphreys and Jacobs 2023; Weller and Barnes 2014). It allows us to be sensitive to mechanistic understandings of causality by uncovering the motives, perceptions, and meanings behind the political choices of those affected by the outbreak. Second, our case selection procedure incorporates the key features of the DID's dynamic potential outcome causal framework, unlike static frameworks based on linear regression or matching (Galvin and Seawright 2021; Seawright 2016b).

To select our cases, we estimate the TWFE event-study model (Equation B.1.1 in the Supplementary Material) 133 times, each time including one treated municipality and all control municipalities. This estimation helps us identify affected municipalities that exhibit similar pre-treatment trends in far-right vote share to those in the control group (i.e., those with pre-treatment event-study coefficients not significantly different from zero at a 0.05  $p$ -value threshold). Since their behavior closely resembles the natural baseline represented by the control group, we can assume that municipalities in this set would have continued behaving similarly in the absence of Xylella. From this set, we select a municipality that had a high estimated treatment effect in the individual model as the positive case, and one that had a zero estimated treatment effect as the negative case. We ensure that these cases are comparable across multiple baseline dimensions, including population, timing of infection, olive tree

<sup>6</sup>  $x_i \mapsto 1_A(x)$  denotes the indicator function of set  $A$ , which maps  $x$  to 1 if and only if  $x \in A$ , and to 0 otherwise.

<sup>7</sup> While we opt for province linear time trends as a parsimonious method to account for local time trends in voting behavior, in Figures B.3.1a and B.3.1b in the Supplementary Material, we also plot the event-study coefficients from the main TWFE models with (i) no time trend and (ii) linear and quadratic time trends. This confirms the robustness of our results to different time trend specifications.

<sup>8</sup> As a robustness check, Figures B.6.1a and B.6.1b in the Supplementary Material visualize estimates obtained from other popular staggered DID methodologies (i.e., Athey et al. 2021; De Chaisemartin and d'Haultfoeuille 2020; Sun and Abraham 2021).

prevalence, and geographic location, all measured before the Xylella outbreak.<sup>9</sup> We deliberately remain blind to any measure of public service provision to further probe the relevance of this moderator.<sup>10</sup>

Assessing if (and how) public service deprivation shapes the electoral consequences of the outbreak is a key objective of the design. However, we select our cases based on the estimated treatment effect rather than the values of public service deprivation (i.e., distance from public service hubs) we use in our quantitative analysis to explore HTEs for two reasons. First, while the measure of distance to public service hubs is a solid proxy for large-N cross-case analyses, it may not fully capture public service deprivation at the case level. For instance, prior work suggests that public service deprivation may also include limited access to services provided *within* the municipality (Cremaschi et al. 2024).<sup>11</sup> The second reason is that the extent to which public service deprivation translates into a narrative of having been left behind by the state in a specific case depends on historical and contextual factors that the measure of distance to public service hubs may not fully capture. We choose cases based on the estimated treatment effect to overcome some limitations of the quantitative measure of the moderator and explore the mechanism that we theorize, which highlights the importance of a preexisting community narrative of feeling left behind by the state rooted in previous experience of public service deprivation.

In April 2023, we conducted 3 weeks of fieldwork in the two selected municipalities (which we refer to as Querceto and Prosopo to protect the identities of our informants and town residents). Our primary data collection method was interviewing, supplemented by direct observation and examining local documents such as magazines and history books. We stayed in the positive case of Querceto and visited the negative case of Prosopo daily. We interviewed 30 people, including local and national politicians, farmers, entrepreneurs in the food service and agricultural products sectors, casual olive growers, as well as other community leaders and key informants (e.g., the town's priest, the librarian, the local historian).<sup>12</sup> We selected our interviewees by contacting the local administration,

local party chapters, and farmers' associations and asking for referrals to other relevant individuals.<sup>13</sup> Our semi-structured interviews focused on participants' perspectives on how the outbreak affected their communities, the changes it brought about, and the role of national and local political elites.<sup>14</sup> To avoid priming participants, we did not include questions about public services in our interview guide, allowing the relevance of this moderator to be uncovered in the conversation.

## QUANTITATIVE EVIDENCE

### Electoral Outcomes

Our statistical analysis consistently indicates that municipalities affected by the Xylella epidemic cast more votes for far-right parties after the outbreak. [Table 1](#) summarizes the main results on the political consequences of the outbreak obtained through our DID electoral analysis. We present ATT estimates based on [Equation 1](#) for four key political blocs and voter turnout.<sup>15</sup> The outbreak exhibits a significant and sizeable average effect on the percentage of valid votes cast for the far right of about 2.2 percentage points (column 4). The rest of the table addresses additional expectations.

There are two main take-aways from [Table 1](#). First, in line with the notion that political incumbents might be punished for poorly managing disasters (Healy and Malhotra 2013; see also Margalit 2019b), we would expect to find less support for the center-left Democratic Party. While our results indicate vote losses for this party, they are only significant at the 0.10 level and are comparable in magnitude to the losses experienced by other political blocs. We also explore Xylella's impact on vote shares in regional elections.<sup>16</sup> The results presented in [Figure B.5.1](#) in the Supplementary Material do not provide evidence that the epidemic affected the vote share of regional incumbent or far-right parties in regional elections. In [Section B.5](#) of the Supplementary Material, we explain this result by stressing the second-order nature of regional elections (Reif and Schmitt 1980) and voters' inability to accurately attribute responsibility for various policies to different territorial levels of government

<sup>9</sup> Section C.1 of the Supplementary Material describes the procedure and [Table C.1.1](#) in the Supplementary Material reports descriptive statistics on the two selected cases.

<sup>10</sup> As shown in [Figure C.2.1](#) in the Supplementary Material, the positive case lies on the 80th (38 minutes) and the negative case on the 46th (22 minutes) percentile of the distribution of distance to public service hubs.

<sup>11</sup> In [Section B.14](#) of the Supplementary Material, we explore this possibility and show that Xylella had similar heterogeneous effects on voting for the far right with respect to services provided at the municipal level such as police and garbage collection.

<sup>12</sup> All interviewees signed an informed consent form before the interview; afterwards, they restated that we could use the information they shared. All interviews were conducted *in situ* in April 2023, recorded and transcribed verbatim. We reference them as "Interviews" and provide a participant ID number, location, and profile (e.g., farmer, mayor). We cite documents retrieved from local

and community archives as "Archival material," and provide the type of material, publication year, and a numeric ID. Finally, we reference direct observations and informal conversations as "Field notes," and provide the location when relevant. [Section C.5](#) of the Supplementary Material lists all the interviews and [Section C.6](#) of the Supplementary Material describes the archival documents.

<sup>13</sup> [Section C.4](#) of the Supplementary Material provides additional details on the recruitment process.

<sup>14</sup> [Section C.3](#) of the Supplementary Material reports our interview protocol.

<sup>15</sup> [Table B.20.1](#) in the Supplementary Material reports the list of parties included in each political bloc for all elections in our sample.

<sup>16</sup> In [Section B.5](#) of the Supplementary Material, we discuss why focusing on national rather than municipal elections is more appropriate for testing our argument.

**TABLE 1. TWFE DID Estimates of the ATT on National Electoral Outcomes**

	Far left	Center left	Center right	Far right	Turnout
	1	2	3	4	5
ATT	-1.871* (0.874)	-1.371+ (0.770)	-2.410+ (1.436)	2.197*** (0.666)	3.739*** (0.791)
Municipality FE	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓
Province LT	✓	✓	✓	✓	✓

Note: Outcomes measured in percentage-point shares. Estimates are based on 251 municipalities and 6 election years ( $N = 1,506$ ). Standard errors are clustered at the municipality level. \*\*\* $p < 0.001$ ; \*\* $p < 0.01$ ; \* $p < 0.05$ ; + $p < 0.1$ .

(Arceneaux 2005; de Benedictis-Kessner 2018; Wilson and Hobolt 2015).

Second, all parties flip-flopped on how to deal with the outbreak, which could have produced political disengagement, manifested in either reduced turnout or a protest vote for an anti-establishment challenger party (De Vries and Hobolt 2020). However, column 5 of Table 1 indicates that the outbreak increased turnout by an average of 3.8 percentage points.<sup>17</sup> While mainstream parties from both the center left and center right experienced electoral losses (-2.4 and -1.4 percentage points, respectively, significant at the 0.10 threshold), the far-left bloc (including far-left parties and the anti-establishment Five Star Movement) lost 1.9 percentage points (significant at the 0.05 threshold).<sup>18</sup> These results suggest that the increased far-right support we detect cannot be explained as simply the expression of a generic protest vote. Overall, our findings thus far support our argument that exposure to a plant disease epidemic boosted electoral support for far-right parties in Puglia.

### Inspecting Parallel Trends

We employ a TWFE event-study specification to verify the parallel-trends assumption (Equation B.1.1 in the Supplementary Material). Figure 2 displays the results using two different measures of far-right vote share: (1) the share over the total number of valid votes (Figure 2a), which corresponds to the measure used in Table 1 and (2) the share over the number of votes cast for the right-wing bloc (Figure 2b). The figures, which plot the ATT on the share of votes in each year (taking the 2013 election as the baseline), confirm that treated and control municipalities had very similar voting behaviors before the outbreak. Figures B.2.1a, B.2.1b, and B.2.1c in the Supplementary Material also confirm the presence of parallel trends before the

outbreak in turnout, vote for the left, and vote for the center right, respectively.

The event study also helps us explore the dynamic effect of the Xylella outbreak on far-right support. To ease interpretation, we complement classic event-study plots with a graph of the mean outcome value for the control group over time. The combined plot in Figure 2a establishes that while all municipalities in Puglia experienced an increasing time trend in vote shares for the far right starting in 2013, those affected by Xylella were disproportionately more likely to vote for these parties in 2022. While considering the share of valid votes is important for calibrating the outbreak's electoral consequences, this outcome measure might obfuscate electoral movements that were already occurring within the right-wing electoral bloc at the start of the outbreak. Figure 2b indicates that the far-right vote share had already increased in the 2018 election at the expense of center-right parties. These results suggest that the Xylella outbreak first radicalized right-wing voters, and then generated a more general increase in far-right support.

### Robustness Checks

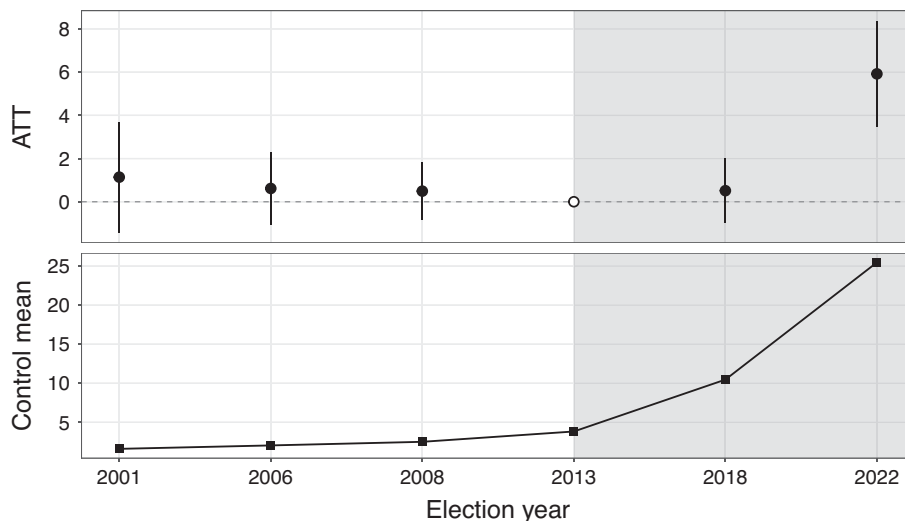
In the Supplementary Material, we confirm the robustness of our key findings in eight steps. First, while not strictly necessary for the validity of our DID identification strategy, we show that treated and control municipalities are balanced on key covariates (Table B.19.1 in the Supplementary Material). Second, we increase our confidence that olive tree damage is driving the electoral effects we observe by demonstrating that the treatment effect increases with olive tree prevalence in two fully saturated interaction models (Figures B.4.1 and B.4.2 in the Supplementary Material). Third, we obtain consistent results when we replace the binary treatment indicator with a continuous variable measuring the length of exposure to Xylella in each election (Table B.4.1 in the Supplementary Material).

Fourth, we rule out the possibility that compositional effects are driving our results by simulating a very conservative counterfactual scenario in which young, potentially progressive citizens have *not* emigrated from affected municipalities (see Figure 3b), thus providing a lower bound to our ATT estimates

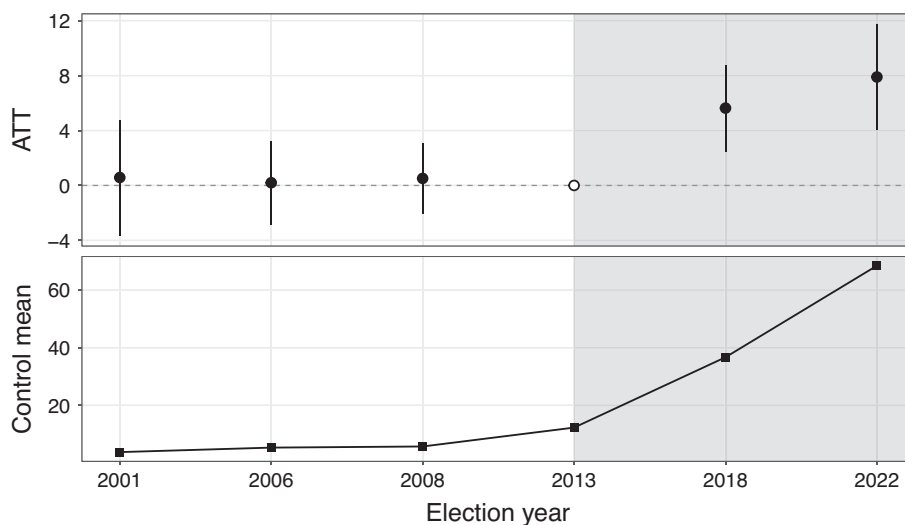
<sup>17</sup> Figure B.2.1a in the Supplementary Material establishes that turnout remained higher in affected areas but decreased in control municipalities.

<sup>18</sup> Frequent changes in parties in the far-left bloc prevent us from conducting a party-by-party analysis. In Section B.21 of the Supplementary Material, we discuss issues related to classifying the Five Star Movement and report robustness tests.

**FIGURE 2. TWFE Event Study of Far-Right Vote Share, 2001–22**



(a) Far-Right Vote Share Over the Total Number of Valid Votes



(b) Far-Right Vote Share Over the Number of Votes Cast for the Right-Wing Bloc

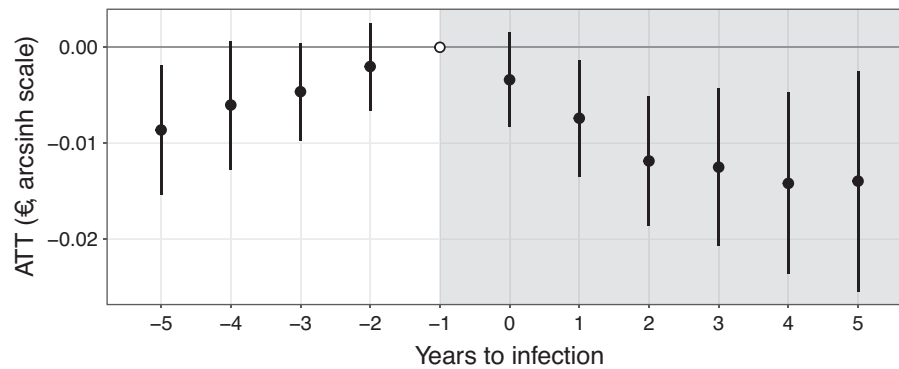
(Section B.8 of the Supplementary Material). Fifth, we dismiss the possibility that our results are driven by Puglia-specific electoral dynamics, spatial spillovers, or olive market general equilibrium effects within the region by using municipalities in Calabria (another southern region that exhibited parallel trends to our treated municipalities) as an alternative control group (Figure B.9.1 in the Supplementary Material).

Sixth, we conduct randomization inference tests, taking into account the randomness generated by treatment assignment rather than the sampling of municipalities in our study, by randomly simulating the treatment assignment (Figure B.16.1 in the Supplementary Material) or using an epidemic-like procedure (Figure B.16.2 in the Supplementary Material). Seventh, we account for potential spatial correlation in the

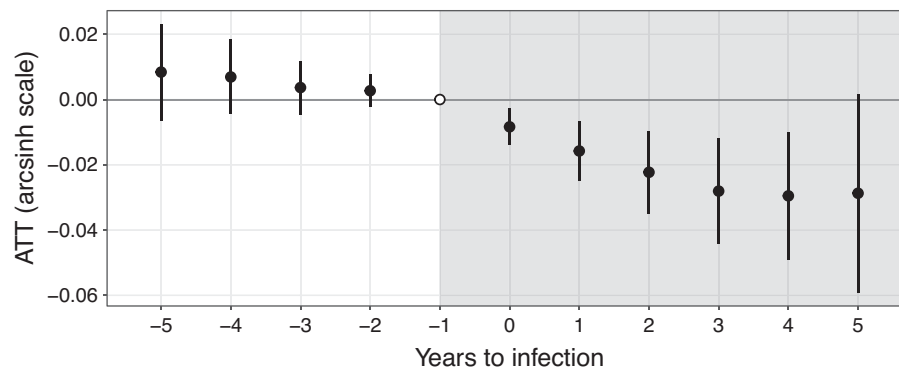
error term by demonstrating that our estimates remain statistically significant even after clustering standard errors at the level of wide, spatially defined, clusters (Figure B.17.1 in the Supplementary Material). Finally, we perform appropriate checks on the statistical power ensured by our sample and on Type S(ign) as well as Type M(agnitude) errors in ATT estimation, and find strong evidence of the statistical soundness of our study (Table B.18.1 in the Supplementary Material).

### Economic and Sociocultural Outcomes

The economic and sociocultural hardship that affected communities experienced as a result of Xylella is an important part of our explanation of why the outbreak increased far-right support. We quantitatively examine

**FIGURE 3. Staggered Event-Study Plots for Two Indicators of Economic and Sociocultural Hardship**

(a) Pre-Tax Income Per capita, 2008–20



(b) Italian Residents Aged 20 to 35, 2002–19

this intuition by replicating the DID analysis on two municipal-level indicators: (1) per capita pre-tax income (MEF 2022) and (2) youth emigration (measured as the number of Italian residents aged 20–35 using data by ISTAT 2022). Figure 3 plots estimates from staggered DID event-study models of these two yearly measures. Each graph depicts the annual ATT, taking the year before the municipality was infected as the reference.

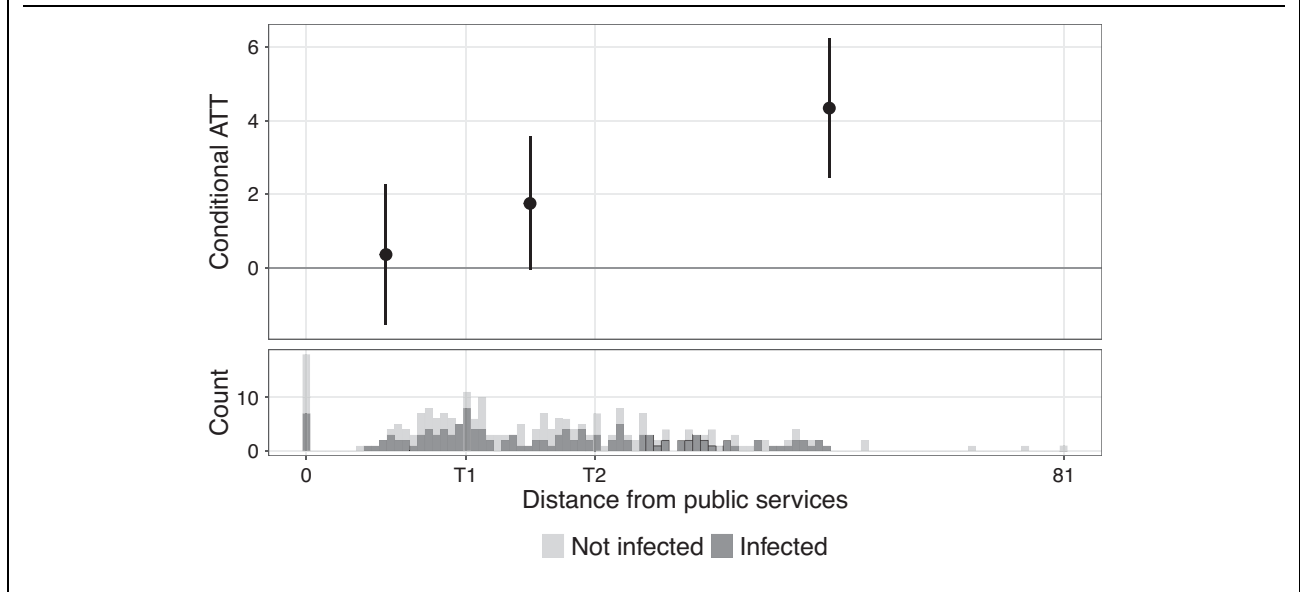
Figure 3a documents the outbreak's negative effects on pretax per capita income. It indicates a sharp and persistent economic deterioration following infection, with an average decrease of about 1% in the third year of the infection and beyond compared to baseline. The estimate captures the aggregate general equilibrium average impact on affected municipalities, and therefore also uncovers second-order effects on the local economy in addition to income losses incurred by those directly employed in the olive farming and processing sector. While these estimates confirm that the epidemic generated negative *economic* effects, the magnitude of these effects is moderate compared to the estimated *electoral* effects. The moderate effect on income is likely explained by the slow (but overall effective) implementation of compensation policies for large olive entrepreneurs, the redirection of labor to other sectors, and the relatively small income losses experienced by the large number of smallholders.

Figure 3b demonstrates that the population of young adults (aged 20–35) rapidly decreased in the years after the outbreak, with peak reductions of around 3% from baseline after a few years. This suggests that, faced with declining prospects, young people increasingly moved away from affected municipalities. Figure B.7.1 in the Supplementary Material reports the results of a staggered DID event study of an additional indicator of sociocultural hardship: the model provides suggestive evidence that the beginning of the outbreak coincided with an increase in the number of suicides. The results point to substantial social and psychological distress generated by the outbreak (cf. Case and Deaton 2020). Overall, these results provide support, sustained by our in-depth case analysis, that the effects of the Xylella outbreak extend beyond the economic realm into the sociocultural sphere.

### The Moderating Effect of Public Service Deprivation

Building on insights from geography (Barca 2009; Barca, McCann, and Rodriguez-Pose 2012; Rodriguez-Pose 2018), we use a municipal-level measure of driving distance (in minutes) to public service hubs—municipalities or clusters of neighboring municipalities featuring (i) a nationally connected train station, (ii) a hospital offering services beyond an emergency room,

**FIGURE 4. Xylella’s Conditional Effect on Far-Right Support, across Terciles of Distance from Public Service Hubs**



and (iii) a high school—to proxy for access to public services before the Xylella outbreak.<sup>19</sup> Figure B.10.1 in the Supplementary Material depicts the classification of Italian municipalities based on our public service deprivation measure. It highlights variation in deprivation across municipalities in Puglia that is substantially orthogonal to the spread of Xylella.<sup>20</sup>

We estimate a HTE specification as in Equation B.1.2 in the Supplementary Material, using our indicator of public service provision as the moderator. Figure 4 plots the outbreak’s conditional average treatment effect (CATT) on far-right vote shares across different levels of access to local public services. It reveals substantial variation in the effects of the shock. The outbreak’s effect is not significantly different from zero in municipalities in the first tercile of our public service measure (shortest distance to local public services); it becomes statistically significant and sizeable in the second tercile (CATT = 1.8) and more than doubles in size in the third tercile (CATT = 4.3), when the distance to public services is greatest.

We ran four robustness tests to check the relevance of the CATT. First, we use a residualized version of the baseline moderator (Figure B.11.1 in the Supplementary Material). The residuals come from regressing the distance from public services on a set of preinfection covariates which capture community dimensions that may be correlated with the moderator, such as income, rurality, tourism relevance, education, age composition, and social capital. The results remain substantively unchanged, which mitigates concerns that the moderating effect of public service provision could be entirely driven by its correlation with other potentially relevant dimensions of treatment effect heterogeneity. Second, in Section B.12 of the Supplementary Material, we estimate high-dimensional HTEs using new machine-learning methods (Wager and Athey 2018). Again, we find that distance from public services has a moderating effect as well as a high degree of relevance in explaining treatment effect heterogeneity. Third, the results from an HTE model on average municipal income (Section B.13 of the Supplementary Material) rule out the possibility that greater access to local public services suppresses an increase in far-right support by providing an economic buffer. Fourth, in Section B.14 of the Supplementary Material, we replicate the HTE results using an alternative measure of public service deprivation. Overall, these results suggest that public service provision is a key dimension of heterogeneity in the effects of the outbreak. In the next section, we explore how this happens—and how a preexisting community narrative of being left behind by the state matters.

## QUALITATIVE EVIDENCE

We leverage qualitative evidence from two highly affected municipalities to further examine the outbreak’s economic and sociocultural consequences.

<sup>19</sup> The Italian government 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 a decline in local provision of public services (Barca, Casavola, and Lucatelli 2014, 7). The data on the hubs are based on indicators collected up to the beginning of 2011 (Agenzia per la Coesione Territoriale 2014). Prior work on territorial inequalities and policy makers in Italy has widely used this measure (Barbera and Zabatinò 2022; Carrosio 2020; Cotella and Vitale Brovarone 2020; Lucatelli, Monaco, and Tantillo 2019; Moscarelli 2023). Section B.10 of the Supplementary Material provides additional details of the measure.

<sup>20</sup> Table B.19.1 in the Supplementary Material illustrates that the average distance from public services is balanced across treated and control municipalities.

**FIGURE 5. Trends in the Vote Share of Far-Right Parties (Raw Means) in Selected Municipalities vs. the Control Group Mean, 2001–22**

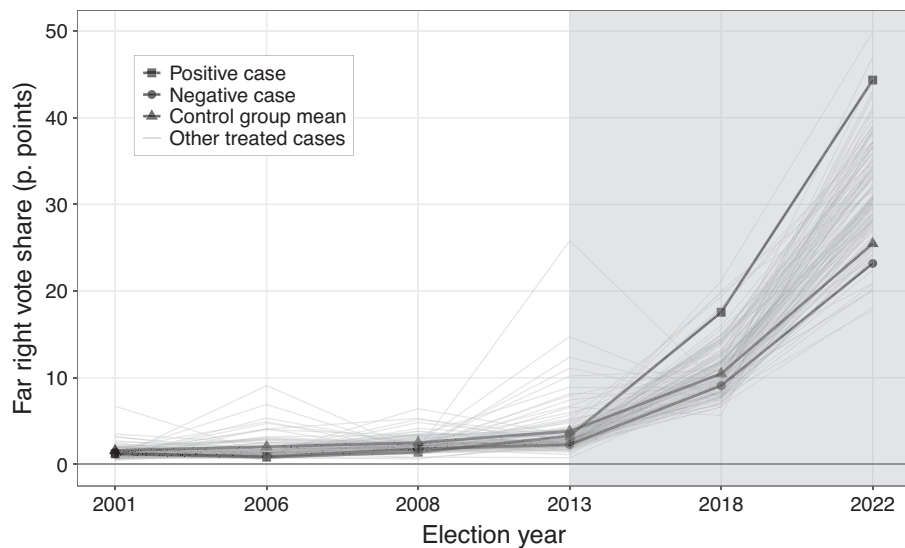


Figure 5 illustrates far-right voting trends in both the positive case of Querceto and the negative case of Prosopo, alongside other outbreak-affected municipalities and raw election-specific means in control municipalities. Before the outbreak, both municipalities exhibited electoral behavior similar to those in the control group. Afterwards, Querceto experienced a substantial increase in far-right vote shares compared to the control municipalities, while Prosopo maintained the control's trend. Analyzing distinctions and similarities between these two communities helps better understand the mechanism through which public service deprivation moderates the outbreak's electoral effect; the mechanism is rooted in a community narrative that acts as an interpretative lens to make sense of the outbreak and the associated hardships.<sup>21</sup>

Querceto and Prosopo are situated approximately 20 kilometers apart in the backcountry of Salento, the southernmost part of Puglia. Over the past half-century, olive cultivation has gained prominence in this area, gradually replacing tobacco and vineyards. The primary olive tree varieties, Ogliarola and Cellina (the

ones most susceptible to Xylella), were used to produce *olio lampante*, a bitter oil primarily used for lighting. Residents interviewed for this study recalled how, just before the epidemic, farmers were investing to transform their production methods to extract higher-quality, more lucrative olive oil.<sup>22</sup> Xylella abruptly halted this transformation. Most olive mills (three in Querceto and three in Prosopo) and other related businesses in the olive industry closed and sold their machinery to foreign producers.<sup>23</sup> Laborers involved in olive harvesting and processing were forced to seek work in other sectors.<sup>24</sup> As we evidence in this section, both Querceto and Prosopo experienced major impacts on community life and local identity. In what follows, we present our qualitative evidence in three steps. First, we explore how Querceto and Prosopo residents view the consequences of the outbreak. We then examine whether these municipalities feature a historically rooted narrative of neglect by the state. Finally, we document how residents employ this narrative to make sense of the outbreak.

### Exploring the Consequences of the Outbreak

Residents in affected areas described how the epidemic profoundly transformed their living environment. We conducted our fieldwork in the spring, when the landscape would have historically been verdant and alive; it

<sup>21</sup> Classic work in cultural sociology suggests that community narratives, as part of an area's culture, should not be understood as a "latent variable" but rather as a "repertoire" or "toolkit" that people can rely on and use (DiMaggio 1997; Small, Harding, and Lamont 2010; Swidler 1986). The presence (or absence) of a specific community narrative shapes individual cognition and actions by facilitating (or impeding) specific interpretations of experiences and circumstances. However, the presence of a specific community narrative does not necessarily translate into a stable individual attitude, value or trait that traditional survey questions aim to capture. This partly explains why scholars have highlighted the limits of survey research for studying how narratives (and culture more generally) inform behavior (Jerolmack and Khan 2014) and suggest using a diversified array of methods including interviewing and ethnography (Small and Cook 2021; Vaisey 2014).

<sup>22</sup> Interviews. ID-15-Prosopo-Farmers'-Association-Representative; ID-17-Querceto-Farmers'-Association-Representative; ID-18-Querceto-Farmers'-Association-Representative.

<sup>23</sup> Interviews. ID-1-Querceto-Local politician; ID-2-Prosopo-Librarian.

<sup>24</sup> Interviews. ID-1-Querceto-Local Politician; ID-2-Prosopo-Librarian; ID-7-Priest-Querceto; ID-15-Prosopo-Farmers'-Association-Representative; ID-26-Querceto-Small-Olive-Producer.

is now a forest of withered trees interspersed with brambles and overgrown with weeds. A Querceto resident expressed how dead trees looked “like skeletons” and instilled “sadness” and “fear.”<sup>25</sup> A Prosopo inhabitant explained that he now constantly felt like “walking in an open-air cemetery.”<sup>26</sup>

Other prevailing sentiments were nostalgia and affection. Residents of both towns recalled how their older acquaintances and relatives would tear up when discussing or seeing withered olive trees.<sup>27</sup> A Querceto politician noted that for many, olive trees “were not just plants.”<sup>28</sup> Having planted them many decades ago, elders were attached to the olive trees as if they were their children.<sup>29</sup> Prosopo’s mayor shared that some even gave the trees human names.<sup>30</sup> We encountered expressions of affection and nostalgia in three poems published in Querceto’s local newspaper, both before and after the outbreak.<sup>31</sup>

Since many residents owned some land with trees (one Querceto resident jokingly referred to himself as “the sole person in town without any olive trees”),<sup>32</sup> community members perceived the outbreak as a loss that impacted everyone.<sup>33</sup> In both towns, the outbreak disrupted established routines. In spring, many residents would traditionally have been busy preparing the land to plant new olive trees—now considered a custom of the past.<sup>34</sup> An agricultural tools salesman, whose office was covered with photos of previous harvests, noted how traditional marriages were often based on families’ olive assets, as these formed part of the dowry.<sup>35</sup>

For many, one of the most cherished lost customs was the enjoyment of their own olive oil.<sup>36</sup> The widespread tradition of producing oil for one’s family instilled a sense of pride and community beyond sheer economic value. According to Prosopo’s librarian, an essential aspect of Salento’s identity was the possession of at least 100 liters of self-produced oil for the year.<sup>37</sup> A popular saying attests to past oil abundance: “olive oil could be used for washing one’s feet.”<sup>38</sup> A Prosopo resident described how his mother would have felt dishonored to discover that he and the other town residents were buying oil from northern Puglia.<sup>39</sup> A Querceto resident described witnessing their mothers

“saving olive oil and frying with [cheaper] seed oil” as “a stab in the heart.”<sup>40</sup>

The epidemic also deeply impacted community life. Prosopo residents shared stories of the town emptying during the fall in the past, when families relocated to countryside homes to harvest olives.<sup>41</sup> Each family would take their harvested olives to the mill to produce their oil. Querceto residents recounted queuing at the olive mill as a lost moment of communal exchange.<sup>42</sup> According to a Querceto politician, the disappearance of these seasonal activities left a void in town meeting places.<sup>43</sup> He also mentioned that the loss of vegetation had led to the closure of social spaces linked to other countryside activities like the hunting club, and explained that depopulation had led to the shutdown of clubs such as those of A.C. Milan and Juventus F.C. supporters.<sup>44</sup> The loss of landscape and cultural and social heritage led the mayors of Querceto and Prosopo to state that the damage to the olive trees constituted the loss of a “symbol of the area.”<sup>45</sup>

### Examining the Preexisting Community Narrative

While Querceto and Prosopo residents shared similar accounts of the economic and sociocultural hardships caused by the outbreak, their descriptions of local access to public services were starkly different. Shortly after our arrival, we were invited to a public assembly in Querceto, where the mayor inaugurated a modest new auditorium. Following a blessing by the town’s priest, the mayor outlined the achievements of his administration. During the question-and-answer session, an elderly woman took the floor to voice her grievances: “Excuse me, Mr. Mayor, you’ve listed a lot of money spent by this administration, but you haven’t mentioned the young people leaving the town or the many elderly people who remain. With all this money you’ve spent, how is it possible that we still don’t have a functioning elderly community center?”<sup>46</sup> Some days later, an interviewee cited the woman’s speech as an example of how everyone noticed the neglect of the town.<sup>47</sup> He emphasized that national politics had historically neglected Querceto.<sup>48</sup> In interviews and casual conversations, other residents also related that they viewed Querceto as a neglected place.<sup>49</sup>

Local representatives also voiced discontent regarding access to public services in Querceto. A municipal

<sup>25</sup> ID-8-Querceto-Local-Politician.

<sup>26</sup> ID-2-Prosopo-Librarian.

<sup>27</sup> Field notes Prosopo. Interview. ID-26-Querceto-Small-Olive-Producer.

<sup>28</sup> Interview. ID-1-Querceto-Local-Politician.

<sup>29</sup> ID-26-Querceto-Small-Olive-Producer; ID-2-Prosopo-Librarian.

<sup>30</sup> Interview. ID-3-Prosopo-Local-Politician.

<sup>31</sup> Archival material. Local-Newspaper-Querceto-1993; Local-Newspaper-Querceto-2017-1; Local-Newspaper-Querceto-2017-2.

<sup>32</sup> Field notes.

<sup>33</sup> Field notes and interviews. ID-1-Querceto-Local-Politician; ID-2-Prosopo-Librarian.

<sup>34</sup> Interview. ID-1-Querceto-Local-Politician.

<sup>35</sup> Interview. ID-6-Querceto-Agricultural-Shop-Owner.

<sup>36</sup> Field notes in Prosopo and Querceto.

<sup>37</sup> Interview. ID-2-Prosopo-Librarian.

<sup>38</sup> Interview. ID-6-Querceto-Agricultural-Shop-Owner.

<sup>39</sup> ID-2-Prosopo-Librarian.

<sup>40</sup> Interview. ID-6-Querceto-Agricultural-Shop-Owner.

<sup>41</sup> Interviews. ID-2-Prosopo-Librarian; ID-3-Prosopo-Local-Politician; Field notes in Querceto.

<sup>42</sup> Interviews. ID-1-Querceto-Local-Politician; ID-12-Querceto-Big-Olive-Producer.

<sup>43</sup> Interview. ID-1-Querceto-Local-Politician.

<sup>44</sup> Interview. ID-1-Querceto-Local-Politician.

<sup>45</sup> Interviews. ID-3-Prosopo-Local-Politician; ID-8-Querceto-Local-Politician.

<sup>46</sup> Field notes.

<sup>47</sup> Interview. ID-14-Querceto-Tourism-Entrepreneur.

<sup>48</sup> Interview. ID-14-Querceto-Tourism-Entrepreneur.

<sup>49</sup> Field notes and interviews. ID-9-Querceto-Prior; ID-30-Querceto-Local-Politician.

councilor affiliated with the far-right Brothers of Italy party stated: “Opportunities here are not the same as in northern Italy. We suffer a gap in services and infrastructure.”<sup>50</sup> He emphasized the malfunctioning of the local health and waste collection systems, describing them as “falling apart.”<sup>51</sup> The mayor, affiliated with the far-right League,<sup>52</sup> called Querceto a “godforsaken town,” citing the absence of a police station, hospital, and garbage collection center as well as a lack of government funds to restore the town’s archaeological site.<sup>53</sup> He also complained about the absence of a reliable transport system: “we pay taxes like people in Milano, but we need to drive to Lecce to use the train, and it takes us half an hour to cover just 30 km for how roads are badly maintained. Most trains don’t even reach Lecce but only arrive in Bari [about 200 km away].”<sup>54</sup>

The mayor said his primary motivation for becoming politically engaged was to address Querceto’s enduring neglect. “I believe that we [Querceto’s politicians] must steal from politics what can benefit our community;”<sup>55</sup> the robbery metaphor communicated the need to use every means available to secure the necessary state resources. He traced Querceto’s history of public service deprivation back nearly 80 years when, in the aftermath of World War II, a senator from Querceto was expelled from his party and lost his seat. The senator from the neighboring town exploited the opportunity to centralize public services in his own town, leaving Querceto behind. This long-standing narrative was consistently recounted by local politicians from different political parties and a historian; it also appeared in the local newspaper and a historical book.<sup>56</sup> Many shared the mayor’s perspective; some referred to it as one of the “many trains that Querceto has missed.”<sup>57</sup>

Conversations and interviews in Prosopo rarely (if ever) mentioned a lack of public services or feelings of neglect. In fact, some elements of Prosopo residents’ community narrative were the opposite of those used by Querceto residents. This was somewhat surprising to us because while our theory predicts that a negative case like Prosopo would not feature a narrative of being

left behind by the state, it would not necessarily expect the opposite narrative of positive experiences with public service provision. A local historian suggested that the presence of a railway since the nineteenth century had played a pivotal role in establishing a religious organization in Prosopo, which had bolstered the town’s development.<sup>58</sup> The story of the monks’ arrival “by the railway” even featured in the title of a book sold at the town newsstand.<sup>59</sup> Several participants recalled how a sentimental relationship between the mayor at the time and a prominent provincial politician had brought significant public resources to the town in the 1980s.<sup>60</sup>

Interviewees offered these accounts without prompting, which increases our confidence that in Prosopo a community narrative of feeling left behind by the state is not prominent. The divergent perceptions of citizens’ access to services in the two municipalities is also reflected by differences that we observed during our stay. In Prosopo, the town librarian received us in a castle owned by the municipal administration that had been carefully renovated to host public events. In Querceto, the library was closed throughout our stay, and we never received a response when we reached out using the contact information provided on the door. Querceto’s municipal administration held its public meetings in a modest auditorium that was used during the day as an elderly center.

The starkly contrasting accounts we uncovered in the two municipalities suggest that previous experiences of public service deprivation in Querceto have become ingrained in a community narrative of being left behind, and that this was not the case in Prosopo. This narrative serves as a framework for interpreting the outbreak as another example of being abandoned by the ruling elites.

### Understanding the Community Narrative as an Interpretative Lens

The two towns’ distinct preexisting community narratives align with our argument that such accounts shape how residents interpret the outbreak. Indeed, we found that the towns differ significantly in how they interpret the outbreak. Section C.7 of the Supplementary Material provides additional qualitative evidence that residents of both Querceto and Prosopo were similarly dissatisfied with how authorities managed the epidemic. Here, we illustrate that many Querceto residents believe the ruling elites abandoned them during the outbreak due to a lack of interest in the affected areas. In our interviews and conversations, without any prompting, many attributed the sluggish containment measures to this geographically targeted neglect.<sup>61</sup> One

<sup>50</sup> Interview. ID-1-Querceto-Local-Politician.

<sup>51</sup> Interview. ID-1-Querceto-Local-Politician.

<sup>52</sup> In both Querceto and Prosopo, municipal administrations were made up of “civic lists” (*liste civiche*) with no explicit party affiliation. Yet, voters in both towns viewed the two administrations as ideologically different (Querceto’s as right leaning and Prosopo’s as left leaning). The mayor of Prosopo had no formal party affiliation. In Section C.8 of the Supplementary Material, we discuss why we do not think these differences can account for the divergent electoral consequences of Xyllella that we observe in both towns.

<sup>53</sup> Interview. ID-8-Querceto-Local-Politician.

<sup>54</sup> Interview. ID-8-Querceto-Local-Politician.

<sup>55</sup> Interview. ID-8-Querceto-Local-Politician.

<sup>56</sup> Interviews and archival material. ID-8-Querceto-Local-Politician; ID-9-Querceto-Prior; ID-30-Querceto-Local-Politician; ID-19-Querceto-Local-Politician; ID-25-Querceto-Local-Historian; Local-Newspaper-Querceto-2021; Local-History-Book-Querceto-2020.

<sup>57</sup> Interviews. ID-8-Querceto-Local-Politician; ID-9-Querceto-Prior; ID-30-Querceto-Local-Politician.

<sup>58</sup> Interview. ID-2-Prosopo-Librarian; ID-16-Prosopo-Local-Historian.

<sup>59</sup> Archival material. Local-History-Book-Prosopo-2001.

<sup>60</sup> Interviews. ID-2-Prosopo-Librarian; ID-9-Querceto-Prior; ID-16-Prosopo-Local-Historian.

<sup>61</sup> Field notes.

participant expressed: “They really do not care about Salento, an insignificant peninsula for the nation.”<sup>62</sup> Residents stressed how a place’s political relevance shapes the state’s response: “Things would have been different if it had started in Bari [the capital of Puglia].”<sup>63</sup> Another remarked: “Try driving up to Bari. You will notice they already have their [Xylella-resistant] plantations ready, and we do not. Have you ever seen anyone coming down here to check how things are?”<sup>64</sup> Querceto’s mayor also highlighted this point: “Had it happened in another part of Italy, the attention would have been greater, but no one ever cared about this small land.”<sup>65</sup> The widespread perception that the national government had allowed other olive oil-producing regions such as Toscana and Liguria to exploit the crisis in Salento helps explain why the outbreak generated electoral effects at the national, but not regional, level.<sup>66</sup>

While many Querceto residents attributed the disaster to neglect by the ruling elites, others interpreted it as a conspiracy against their community.<sup>67</sup> The town priest noted: “Some people have even experienced the outbreak as if there was someone who wanted this and made it happen. With which objective? It is not clear. But people perceive it like this.”<sup>68</sup> A municipal councilor mentioned: “The fact that the epidemic stopped before Bari gave rise to suspicions. Of course, I don’t believe in these suspicions.”<sup>69</sup> The mayor of Querceto said: “Some say it was political because multinational companies had interests in replanting trees, but I am not the one who can tell.”<sup>70</sup> In casual conversations, several people embraced elements of such conspiracy theories. For example, some said that planes had distributed the bacterium because the infection had spread along straight lines.<sup>71</sup> They blamed people from Bari, those from other oil-producing regions, or global elites seeking to profit from international trade.<sup>72</sup>

In Prosopo, where residents and authorities did *not* embrace a narrative of state neglect, the outbreak was not interpreted as a geographically targeted abandonment by elites or a conspiracy against their community. While some participants mentioned that conspiracy theories had circulated at the beginning of the outbreak, they quickly died down and were perceived as irrelevant in the longer term.<sup>73</sup> As we show in Section C.7 of the Supplementary Material, citizens of both Prosopo and Querceto often blamed the hardship associated with the outbreak on politicians’ inability to

adequately deal with it.<sup>74</sup> However, residents of Prosopo did not maintain that this failure was because Salento was affected instead of a more politically important territory. When we tried to probe potential feelings of belonging to the periphery or of geographically concentrated abandonment by political elites, which we detected in Querceto, by asking if the outcome would have been different if the outbreak had occurred in another part of Italy, one Prosopo resident replied: “The problem was that it happened here in Salento. Because Salento is full of olive trees. In another place, it would have caused less damage.”<sup>75</sup> Others saw the outbreak as an unfortunate event for which no one could ultimately be blamed; as one interviewee explained, “They [politicians] just could not anticipate this.”<sup>76</sup>

These differing interpretations of the outbreak in Querceto versus Prosopo suggest that residents relied on different community narratives to make sense of their experiences. In Querceto, residents interpreted the epidemic through the lens of being left behind by the state. In Prosopo, which did not feature a “left behind” community narrative, the outbreak was perceived as an unpreventable disaster that had to be managed, but not as a sign of targeted neglect of the community by the ruling political elite.

Querceto residents’ interpretation of the outbreak as a collective abandonment by political elites allowed far-right rhetoric to resonate more strongly within the community. We found little evidence that mobilizing grievances related to disaster management drove the electoral success of far-right parties. At the end of our interviews and conversations, we shared our quantitative results with local politicians from different parties; they unanimously responded that this evidence could not be caused by the Xylella outbreak.<sup>77</sup> While the outbreak was salient in everyday life, local politicians did not consider it a relevant campaign issue.<sup>78</sup> When we asked interviewees if any political party had behaved worse or better than others during the crisis, the most common reaction in both towns was that “they [politicians] all had done badly.”<sup>79</sup> Overall, our evidence suggests that the outbreak increased the appeal of far-right politicians’ national messages highlighting place-based economic and social grievances with a promise to restore the status of peripheral areas.

<sup>62</sup> Interview. ID-29-Querceto-Small-Olive-Producer.

<sup>63</sup> Interview. ID-29-Querceto-Small-Olive-Producer.

<sup>64</sup> Interview. ID-26-Querceto-Small-Olive-Producer.

<sup>65</sup> Interview. ID-8-Querceto-Local-Politician.

<sup>66</sup> Field notes and interview. ID-2-Prosopo-Librarian.

<sup>67</sup> Field notes.

<sup>68</sup> Interview. ID-7-Priest-Querceto.

<sup>69</sup> Interview. ID-1-Querceto-Local-Politician.

<sup>70</sup> Interview. ID-8-Querceto-Local-Politician.

<sup>71</sup> Field notes.

<sup>72</sup> Field notes.

<sup>73</sup> Interviews. ID-2-Prosopo-Librarian; ID-3-Prosopo-Local-Politician.

<sup>74</sup> Interviews. ID-2-Prosopo-Librarian; ID-15-Prosopo-Farmers’ Association-Representative; ID-22-Prosopo-Small-Olive-Producer; ID-20-Prosopo-Small-Olive-Producer; ID-23-Prosopo-Big-Olive-Producer.

<sup>75</sup> Interview. ID-22-Prosopo-Small-Olive-Producer.

<sup>76</sup> Interview. ID-21-Prosopo-Small-Olive-Producer.

<sup>77</sup> Interviews. ID-1-Querceto-Local-Politician; ID-8-Querceto-Local-Politician; ID-19-Querceto-Local-Politician. Field notes.

<sup>78</sup> Interviews. ID-1-Querceto-Local-Politician; ID-8-Querceto-Local-Politician; ID-19-Querceto-Local-Politician. Field notes.

<sup>79</sup> Field notes-Restaurant-Owner-Querceto. Interviews. ID-2-Prosopo-Librarian; ID-5-Querceto-Agricultural-Shop-Owner; ID-20-Prosopo-Small-Olive-Producer; ID-23-Prosopo-Big-Olive-Producer; ID-26-Querceto-Small-Olive-Producer.

## CONCLUSION

Given the economic and social repercussions of the escalating risk of plant disease epidemics worldwide, this study investigates their political consequences. We assess the aftermath of the 2013 *Xylella* outbreak in Italy, which decimated centuries-old olive groves in Puglia, a region globally renowned for its olive oil production. The study advances the literature on the political consequences of economic shocks by drawing attention to plant disease epidemics as collective economic shocks.

We exploit geographic and temporal variation in the infection for causal identification and find that far-right parties gained a 2.2-percentage-point excess vote share in the subsequent national elections of 2018 and 2022. We quantitatively document the economic and sociocultural hardship caused by the decline in economic activity and the erosion of community life through youth emigration. Several robustness checks further support the link between the epidemic and increased support for far-right parties. Our findings are inconsistent with a set of alternative explanations, such as rewarding or punishing incumbents for immediate disaster relief or casting a generic protest vote. Our qualitative fieldwork in two severely affected municipalities corroborates the intuition that the outbreak generated sociocultural and economic hardship in affected communities. By comparing an affected case where the outbreak increased far-right electoral support with an equally affected case where it did not, our qualitative analysis suggests that a preexisting community narrative of being left behind by the state moderates the electoral consequences of the epidemic. This narrative appears to be rooted in adverse experiences with public service delivery over many years.

The abrupt nature and geographic concentration of the *Xylella* outbreak made this case especially suited for exploring the underlying mechanisms through in-depth qualitative fieldwork. The qualitative evidence deepened our mechanistic understanding of the economic and sociocultural effects of the outbreak, which allowed us to determine how residents in affected communities made sense of the outbreak—as well as the motives behind their electoral choices (Cramer Walsh 2012). While integrating case-level evidence into statistical analysis based on modern causal inference approaches may not appear to be straightforward, we developed a new procedure for selecting individual cases that allows researchers to integrate the key features of a dynamic potential outcome causal framework into a DID setting. This research design template is a potentially promising avenue to help future multi-method research develop rigorous causal explanations.

A key reason why plant disease epidemics increase support for the far right is that they are a fundamentally collective experience for affected communities. They uproot local economies and erode the community life linked to the affected crop. The far-reaching consequences of plant disease epidemics resemble those typically associated with economic shocks—such as

trade, deindustrialization or technological disruption—that prior work has convincingly demonstrated to disrupt traditional patterns of electoral and party competition (e.g., Margalit 2019a; Rodrik 2021; Walter 2021). In addition to establishing how the collective implications of these shocks shape their political consequences, our evidence suggests that the ways in which shocks interact with preexisting community conditions are important for understanding the heterogeneity in the political effects we observe. Future work should probe the relevance of community narratives as a key mechanism moderating the electoral effects of economic shocks, and explore other plant disease outbreaks.

Our results also advance the ongoing debate on whether cultural or economic factors drive far-right support in the aftermath of an economic shock (Margalit 2019b; Mutz 2018; Rodrik 2021). We argue that shocks not only produce adverse consequences for individuals, but may also generate socio-tropic concerns about the fate of one's community. The current literature would benefit from shifting away from debating whether economic or cultural factors *matter* to exploring how they interact—and under which conditions (Ballard-Rosa et al. 2021; Bolet 2021; Cramer 2016; Cremaschi et al. 2024).

## SUPPLEMENTARY MATERIAL

To view supplementary material for this article, please visit <https://doi.org/10.1017/S0003055425000073>.

## DATA AVAILABILITY STATEMENT

Research documentation and data that support the quantitative findings of this study are openly available at the American Political Science Review Dataverse: <https://doi.org/10.7910/DVN/3QAAQ9O>.

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## CONFLICT OF INTEREST

The authors declare no ethical issues or conflicts of interest in this research.

## ETHICAL STANDARDS

The authors declare the human subjects research in this article was reviewed and approved by the Bocconi Ethics Committee, IRB certificate number FA000594, March 20, 2023. The authors affirm this article adheres to the principles concerning research with human participants laid out in APSA’s Principles and Guidance on Human Subject Research (2020).

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