ECONSTOR
Make Your Publications Visible.

A Service of
ZBW
Leibniz-Informationszentrum Wirtschaft
Leibniz Information Centre for Economics

Colantone, Italo; Di Lonardo, Livio; Margalit, Yotam; Percoco, Marco

Working Paper

The Political Consequences of Green Policies: Evidence from Italy

Working Paper, No. 028.2022

Provided in Cooperation with:
Fondazione Eni Enrico Mattei (FEEM)

Suggested Citation: Colantone, Italo; Di Lonardo, Livio; Margalit, Yotam; Percoco, Marco (2022) : The Political Consequences of Green Policies: Evidence from Italy, Working Paper, No. 028.2022, Fondazione Eni Enrico Mattei (FEEM), Milano

This Version is available at:
https://hdl.handle.net/10419/267493

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

WWW.ECONSTOR.EU

Mitglied der Leibniz-Gemeinschaft

October 2022

FONDAZIONE ENI ENRICO MATTEI

Working Paper

028.2022

The Political Consequences of Green Policies: Evidence from Italy

Italo Colantone, Livio Di Lonardo, Yotam Margalit, Marco Percoco

The Political Consequences of Green Policies: Evidence from Italy

By Italo **Colantone** (Bocconi University, Baffi-Carefin Research Center and CESifo)
Livio **Di Lonardo** (Bocconi University, Dondena Research Center)
Yotam **Margalit** (Tel Aviv University, Department of Political Science)
Marco **Percoco** (Bocconi University, GREEN Research Center)

Summary

For many governments, enacting green policies is a priority, but such policies often impose on citizens substantial and uneven costs. How does the introduction of green policies a˙ect voting? We study this question in the context of a major ban on polluting cars introduced in Milan, which was strongly opposed by the populist right party Lega. Using several inferential strategies, we show that owners of banned vehicles—who incurred a median loss of €3,750—were significantly more likely to vote for Lega in the subsequent elections. Our analysis indicates that this electoral change did not stem from a broader shift against environmentalism, but rather from disaffection with the policy's uneven pocketbook implications. In line with this pattern, recipients of compensation from the local government were not more likely to switch to Lega. The findings highlight the central importance of distributive consequences in shaping the political ramifications of green policies.

Keywords: environmental politics, green policies, distributional consequences

JELClassification: P100, D700, Q500

Address for correspondence:
Italo Colantone, Associate Professor, Bocconi University
Director, Bachelor in International Politics and Government
Via Roentgen 1, 20136 Milano
e-mail: italo.colantone@unibocconi.it

The opinions expressed in this paper do not necessarily reflect the position of Fondazione Eni Enrico Mattei

Corso Magenta, 63, 20123 Milano (I), website: www.feem.it, e-mail: working.papers@feem.it

The Political Consequences of Green Policies: Evidence from Italy*

Italo Colantone† Livio Di Lonardo‡ Yotam Margalit§ Marco Percoco¶

August 8, 2022

Abstract

For many governments, enacting green policies is a priority, but such policies often impose on citizens substantial and uneven costs. How does the introduction of green policies affect voting? We study this question in the context of a major ban on polluting cars introduced in Milan, which was strongly opposed by the populist right party Lega. Using several inferential strategies, we show that owners of banned vehicles—who incurred a median loss of €3,750—were significantly more likely to vote for Lega in the subsequent elections. Our analysis indicates that this electoral change did not stem from a broader shift against environmentalism, but rather from disaffection with the policy's uneven pocketbook implications. In line with this pattern, recipients of compensation from the local government were not more likely to switch to Lega. The findings highlight the central importance of distributive consequences in shaping the political ramifications of green policies.

*We thank Guido Ardizzone, Maria Carmela Attolini, Charlotte Sophia Bez, Lorenzo Cavaglià, Enrico Cavallotti, Nicolò Cobianchi, Yuri Filippone, Lilia Patrignani, and Shir Raviv for excellent research assistance. We thank Paolo Agnolin, Hans-Georg Betz, Vincenzo Galasso, Laura Grigolon, Marc Guinjoan, Jens Hainmueller, Ro'ee Levy, Gian Maria Mallarino, Henrique Marques, Elena Marseglia, Alessandro Olper, Vinicius Diniz Schuabb, Piero Stanig, and seminar participants at Bocconi University, Haifa, Namur, Stanford, Tel Aviv, Verona and Yale for insightful comments. The usual disclaimer applies.

†Bocconi University, Baffi-Carefin Research Center, and CESifo. E-mail: italo.colantone@unibocconi.it

‡Bocconi University, Dondena Research Center. E-mail: livio.dilonardo@unibocconi.it

§Tel Aviv University, Department of Political Science. E-mail: ymargalit@tau.ac.il

¶Bocconi University, GREEN Research Center. E-mail: marco.percoco@unibocconi.it

Introduction

The existential threat posed by climate change and environmental degradation is growing ever more present. While some of the harsh impacts are already being felt—extreme temperatures, massive wildfires, devastating floods—addressing this threat poses a formidable challenge on two main fronts: technological and political. On the former, much has been written, particularly on the difficulty of developing cost-effective low carbon technologies to replace the reliance on fossil fuels. Yet even where progress is made on the technological front, the political challenge remains a major barrier to progress.

In France, for example, President Macron introduced in October 2018 a carbon tax hike, with the aim of incentivizing motorists to make environment-friendly behavioral changes. Yet widespread demonstrations and road blockades soon erupted across the country, sparking the 'Yellow Vests' movement that protested against the policy, arguing that it disproportionately burdened working class households. As the demonstrations spread nationally, the government abandoned the proposed policy change. Elsewhere, the Chilean government confronted mass demonstrations in 2019 due to rising metro fares, prompted by the government's decision to power the national network with renewable energy.

These examples highlight a larger issue: while governments in many countries increasingly view environmental protection as a central priority, advancing green policies is often politically challenging. One reason is that these policies often entail high transition costs that are unevenly distributed. What is the political effect of introducing green policies? How does their distributional impact shape environmental attitudes and voting behavior?

The growing adoption of environmental policies can instigate a backlash, one that we conjecture is particularly well aligned with the right-wing populist agenda. That is because green policies are fast becoming synonymous with scientific expertise, technocratic management and involvement of multilateral international institutions, all frequent targets

of populist ire (Bonikowski and Gidron, 2016). Indeed, there is evidence that right-wing populist parties and candidates often take a skeptical stance on environmental issues. For instance, UKIP leader Nigel Farage described the fight against climate change as "one of the biggest and stupidest collective misunderstandings in history".[1] US President Donald Trump repeatedly expressed climate change skepticism.[2] In a study of thirteen populist right parties—among them the Austrian Freedom Party, the Danish DPP, France's Front National, and the Swiss People's Party—the authors conclude that the parties' positions on global warming are "clearly anti-environmental" and that eleven of the parties are "overwhelmingly against environmental taxes" (Gemenis, Katsanidou, and Vasilopoulou, 2012).[3] As green policies often place high costs on citizens, in taking such a stance parties may hope to attract a sizable swath of discontented voters. Whether that approach succeeds in doing so is an open question.

To address this issue, our study exploits a quasi-natural experiment to provide insight on whether and how the introduction of green policies with uneven costs affects vote choice, as well as environmental attitudes and behavior. Specifically, we focus on the *Area B* policy advanced in July 2018 in the city of Milan by the social democratic mayor Giuseppe Sala. The policy restricted certain polluting vehicle models from circulating within a large area that covers over 70% of the city of Milan, and where 97% of the city population resides. The policy entailed significant economic losses for owners of the banned car models, who reported a median cost of €3,750, corresponding to about 17% of residents' median annual gross income.

The policy drew a sharp rebuke from opposition politicians, most vocally from repre-

[1] Bloomberg.com (11/20/2016), Jess Shankelman, "Global Trumpism seen harming efforts to reduce climate pollution."

[2] Vox.com (06/01/2017), Dylan Matthews, "Donald Trump has tweeted climate change skepticism 115 times. Here's all of it."

[3] The authors refer to these parties as radical right, but all of them are classified as populist by Norris and Inglehart (2019).

sentatives of the populist right party Lega. Massimiliano Bastoni, Lega representative in the regional council, summarized his party's criticism of the policy and its political backers by warning "...This initiative will create only inconveniences and disasters, depressing the economy and penalizing the weaker social segments... Could you expect anything different from the radical-chic left, that just claims to be the people's friend, but is actually not?"[4] In subsequent elections held the following year, such criticism became a prominent feature of Lega's attack on the incumbent leftist Democratic Party (PD) and its environmental policy approach.

We investigate the electoral impact of the Area B policy, and use this case study to provide insight into the broader political dynamics surrounding the introduction of green policies. To do so, we utilize an original survey with a targeted sampling design that we conducted among residents of Milan. The survey collected detailed information about respondents' car ownership, environmental views and political behavior. Employing a set of inferential strategies, we estimate the electoral impact of the introduction of the Area B ban. Specifically, we exploit arbitrary discontinuities in the rules dictating the car models that would be covered by the ban, and employ a difference-in-differences estimation to identify the policy's effect on voting behavior.

Our analysis reveals that the introduction of the Area B ban by the Social Democrats led to an increase in support for the populist right party Lega in the following elections. Specifically, owners of banned cars were 13.5 percentage points more likely to vote for Lega in the European Parliament elections of 2019. This effect, treatment on treated, was even larger when focusing on the likelihood of switching to Lega among affected car owners who had not voted for the party in previous elections.

To investigate the mechanisms underlying this electoral shift, we collected information

[4] Facebook.com (02/22/2019), Lega Lombarda - Salvini Premier Page, "Sala regala ai milanesi solo disagi e disastri."

about respondents' views on a host of environmental issues. In addition, we embedded in the survey two studies that enabled us to track residents' propensity to obtain information about, or expend money on, local and global environmental initiatives. Notably, we found no attitudinal or behavioral differences between car owners that were affected by the ban and owners that were not. If anything, affected car owners exhibited slightly more environment-friendly attitudes. In other words, the adverse pecuniary impact of the Area B policy did not shift those car owners to Lega by leading them to adopt the party's relatively skeptical view on green issues.

Instead, our results suggest that the shift to Lega reflects disaffection with the pocketbook implications of the policy. Owners of vehicles affected by the Area B ban seem to object to being singled-out by the mayor's approach of placing the bulk of the cost of his environmental policy on a narrow sub-set of residents. More generally, they tend to think that the government—by spreading the costs across all residents via the tax system—and big businesses, should take greater responsibility in advancing environmental action.

The electoral response to the policy closely tracked its distributional impact. Affected car owners who received compensation from the municipality for their costs were not more likely than unaffected car owners to shift their support to Lega. Due to the way compensation was dispensed, requiring residents to submit a formal application, we cannot ascertain that this differential electoral response represents a causal effect of the compensation scheme. Still, our evidence is very much consistent with the idea that schemes aimed at offsetting costs incurred by residents help alleviate the political backlash from green policies.

To be clear, our research design does not seek to provide an estimate of the general equilibrium effects of the Area B policy. Put differently, the finding of an increase in support for Lega among those adversely affected by the policy does not preclude a possible net gain for the ruling Democratic Party, which may have been rewarded by voters who were unaffected by the traffic ban and liked the policy. Rather, our focus is specifically on analyzing how the

losers from the green policy react politically. Given that many green policies entail significant distributional consequences, this is an important constituency to study.

Our work contributes to a growing stream of research that focuses on domestic, rather than interstate, dynamics surrounding environmental politics (Bechtel and Urpelainen, 2015; Bernauer and Gampfer, 2015). Notably, much of this work analyzes the determinants of public support for green policies (Kotchen, Turk, and Leiserowitz, 2017; Kono, 2020; Gaikwad, Genovese, and Tingley, 2022), with a particular focus on the influence of parties' stance or other elite cues on the environmental positions voters take (e.g., Birch, 2020; Guber, 2013). However, very little research analyzes how the actual introduction of green policies affects electoral outcomes (but see Stokes, 2016). Our findings add to this strand of work by showing that the introduction of a green policy that imposes large and unevenly distributed costs on citizens has a substantial impact on the voting behavior of those affected by the policy. The findings highlight the central importance of the way environmental policies are designed, including the provision of measures to spread out the transition costs, in countering the potential political blowback from these policies.

Our evidence also relates to the discussion over the possibility that an anti-green shift could hurt left-wing parties (Kono, 2020). By this view, green policies may create a schism in the support base of the left between a more environmentally-minded middle class and a more pocketbook-minded working class. While we find that the Social Democrats' introduction of Area B led to an increase in support for the populist right party Lega, our analysis indicates that the shift was, in fact, not a result of left-leaning voters abandoning their party. Instead, Lega's green-skeptical stance appears to have primarily mobilized 'on the fence' voters, i.e., people who had previously voted, but not for any of the main political parties. These findings suggest that even without a reckoning among traditional left voters, right-wing populists can attract new voters by spearheading the opposition to the green agenda.

Finally, our analysis speaks to the broader literature on the political implications of struc-

tural change, be it globalization or automation (e.g., Colantone and Stanig, 2018; Anelli, Colantone, and Stanig, 2021). A shared characteristic of the green transition and these other phenomena is that they often entail strong distributive repercussions, generating winners and losers. But an important feature of many green policies is that, arguably more than in other cases, people are asked to pay some cost for a certain good—e.g., cleaner air or less catastrophic climate events—that they themselves will benefit from, and that is potentially essential to their own well-being. In other words, the benefits from green policies could be more salient to the individuals, and the causal chain between policies and benefits more transparent (e.g., cleaner air as a result of a traffic ban). People may thus view green policies as vital to their own interest, and support these policies even at a substantial pecuniary cost. This makes the politics surrounding environmental action far from obvious, and potentially different from other policies. Our finding that owners of banned car models swung in a significant manner toward supporting the party most opposed to the Area B policy is pertinent beyond this specific case study. Indeed, our evidence speaks to the broader question of how advancing costly green initiatives is likely to play out politically among those asked to shoulder the bulk of the transition costs.

The Politics of Environmental Policy

Despite a strong scientific consensus that environmental degradation is leading to severe economic and ecological damage, policymakers are struggling to adopt the swift policy measures experts are describing as necessary to deal with the looming catastrophe. Most notably, advancing actions toward reduced reliance on fossil fuels and a mitigation of greenhouse gas emissions is proving a formidable political challenge.

To understand the nature of this challenge, much of the earlier research on the politics of environmental protection has focused on the international perspective, viewing it primarily

as a collective action problem between states (e.g., Ostrom, 2010; Stern, 2007). These studies view the mitigation of climate change, specifically the reduction in greenhouse-gas emissions, as a global collective good, whose production requires cooperation between countries and is therefore characterized by free-riding concerns (see review by Keohane and Victor, 2016).

Later studies have pointed instead to the importance of the domestic debate surrounding environmental policy, arguing that a focus on the international level alone ignores key obstacles that are crucial to understanding the political feasibility of environmental policies (e.g., Bernauer and Gampfer, 2015; Bechtel and Urpelainen, 2015). This view holds that in choosing whether or not to support policies such as carbon pricing or regulations on emissions, politicians are primarily responding to the preferences of their constituents, and doing so largely irrespective of the actions other countries are taking (Colgan, Green, and Hale, 2021).

Consequently, the literature on the domestic politics of climate change has mostly focused on detecting the chief determinants of citizens' willingness to support and pay for environment-friendly policy (for a review, see Drews and Bergh, 2016). These determinants include personal beliefs and knowledge about climate change, ideological orientations and values, as well as personal experiences with extreme weather events (Inglehart, 1995; Egan and Mullin, 2017; Hazlett and Mildenberger, 2020; Hoffmann et al., 2021).

Other scholars expanded this line of investigation, utilizing survey experiments to assess how the features of the policy's design affect public support for domestic and global climate mitigation efforts. A key finding in their analyses is that considerations regarding the potential costs of the policy play a crucial role in shaping people's preferences (Bechtel and Scheve, 2013; Tingley and Tomz, 2014; Kotchen, Turk, and Leiserowitz, 2017). These studies highlight two major difficulties in promoting politically viable green policies. First, some policies geared toward environmental protection require a massive upfront outlay, while the benefits are disputed or felt only in the distant future (Hovi, Sprinz, and Underdal, 2009).

Second, the distribution of the costs of green policies is often highly uneven, with significant distributive consequences felt not only across but also *within* countries (Aklin and Mildenberger, 2020; Vona, 2019; Maestre-Andrés, Drews, and Bergh, 2019; Beiser-McGrath and Bernauer, 2020). This problem is exacerbated by the fact that environmental policies are often regressive, imposing a heavier burden on low-income individuals (see Markkanen and Anger-Kraavi, 2019 for an overview).

Several studies have thus explored how such distributive conflicts play out in shaping the choice of policy. For example, analyzing roll-call votes from U.S. congress, scholars find that representatives whose constituencies are expected to bear the brunt of the costs (e.g., areas with a high degree of carbon-intensive employment) are less likely to support environment-friendly legislation (Kono, 2020; Cragg et al., 2013). Notably, the implicit assumption underlying these findings—that the distributive costs of environmental measures will translate into an electoral response—has hardly been tested. Are politicians right to worry about an electoral backlash if they support climate policies that impose high costs on their constituents? To what extent do voters' responses vary as a function of how the burden of costs is distributed?

We know little about these issues, as not much empirical attention has been given to the question of how the introduction of green policies with distributional costs affects citizens' preferences and voting behavior. A notable exception is Stokes (2016), who uses the spatially uneven consequences of a renewable energy policy in Ontario, Canada, as a natural experiment. She shows that voters living in proximity to wind energy projects were more likely to retrospectively punish the incumbent provincial government for liberalizing the installation of wind turbines. Specifically, she documents a NIMBY effect that persists 3 km from wind turbines, resulting in a 4 to 10% drop in vote share for the incumbent party in precincts with a proposed or operational turbine, as compared to similar precincts without one. These findings shed light on the electoral impact of distributional conflicts induced by green poli-

cies on a geographical basis. While the green policy Stokes examined generated aggregate gains in terms of lower carbon emissions, it also created geographically-concentrated losers, namely residents living near the wind turbines who suffered from noise and the unaesthetic impact of the turbines on the landscape.

The findings by Stokes (2016) speak directly to cases in which environmental policies entail distributional consequences that are geographic-based. An important question that remains open is what the electoral consequences are when the costs of the green policy are spread unevenly across individuals without a geographic dimension. That is indeed the case for many green policies (e.g., carbon taxes), and most prominently for vehicle bans such as the one we study in this paper. In our setting, losers (i.e., owners of banned cars) reside next to citizens who are not harmed by the policy, as they all live in the same area. Hence, the political conflict the Area B policy instigates is not a NIMBY-type of problem. The relevant unit of analysis is therefore individuals rather than electoral precincts, necessitating the use of data at the individual level. As a result, our research design allows us to also evaluate the mechanisms through which the distributional consequences of the policy translate into voting behavior.

The Area B Policy and the Political Context

Studies conducted over the past decade by the European Environment Agency have placed the city of Milan consistently among the worst cities in Europe in terms of air pollution. In May 2018, Italy was referred to the EU Court of Justice due to non-compliance with the EU's air pollution limits in its Northern area, where Milan is located. In an effort to improve the quality of the air in the city, Milan mayor Giuseppe Sala announced in July 2018 the introduction of a new environmental policy: Area B.

Area B is a restricted traffic area which covers 72% of the city's territory, where 97% of

the population resides.[5] The policy identifies the most polluting categories of vehicles and bans them from accessing and circulating within the area.[6] Area B is active from Monday to Friday from 7:30 to 19:30, excluding holidays.[7]

Restrictions on the free circulation of vehicles within Area B are based on the European system of exhaust emissions standards, the so-called "Euro categories". Starting in 1992, every several years the EU has introduced new and increasingly stringent regulations (from Euro1 to Euro6 categories) defining the maximum permitted levels of various pollutants.[8] All new vehicles produced and sold in Europe at any point in time have to comply with the most recent emission standards. That is, they have to belong to the current active Euro category. Figure 1 provides a graphical representation of the evolution of standards from 1993 onwards.[9]

The implementation of Area B began on February 25, 2019. In the first stage of the policy, the traffic ban applied to the following car models: Diesel-Euro0, 1, 2 and 3 (i.e., cars produced until the end of 2005), and Petrol-Euro0 (produced before January 1993). These car models are identified in yellow in Figure 1. Diesel-Euro4 cars, identified in red, were added to the list of banned vehicles on October 1, 2019. These will constitute our main focus in the empirical analysis, where the aim is to compare owners of affected cars to owners of relatively-similar-yet-unaffected cars.[10] Specifically, our treatment group will

[5] See the map in Figure SI-1 in the Online Appendix.

[6] Area B is not a congestion-charge type of policy, hence vehicles not covered by the ban are not required to pay any entry fee to access the area, and vehicles that are banned cannot get access upon payment of a fee.

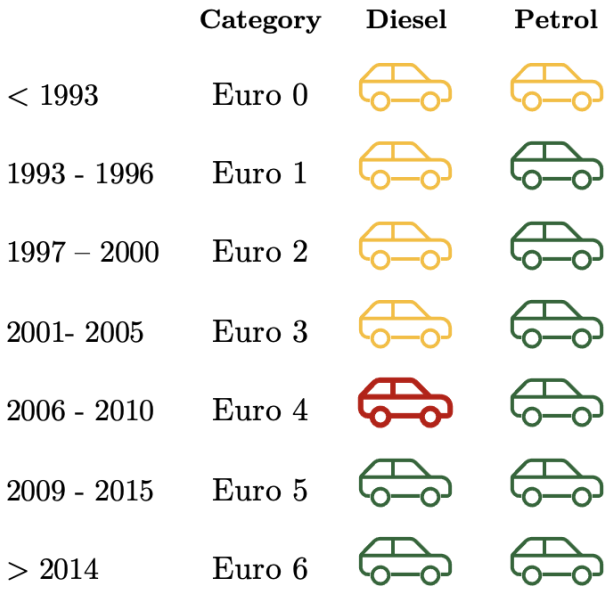
[7] To ease the transition, in the first year of the policy's introduction banned vehicles were allowed 50 days of access to Area B.

[8] These include nitrogen oxides, total hydrocarbon, non-methane hydrocarbons, carbon monoxide, and particulate matter, measured in emitted grams per kilometer.

[9] In three years (e.g., 2009) there is an overlap between two Euro categories, in which case both standards are legal. This means that the production of older car models can continue, while all new models need to comply with the newest standards in order to be approved and launched on the market.

[10] According to official data from the Italian government agency for mobility, the traffic ban affected a total of 118,259 vehicles, of which 34,302 were Diesel-Euro4. Overall, in 2019 there were 684,384 vehicles registered in Milan.

Figure (1) Area B Traffic Ban



Notes: Graphical representation of the impact of Area B. Yellow and red cars are banned, while green cars can still circulate.

consist of owners of Diesel-Euro4 cars, while the control group will consist of Petrol-Euro4, Diesel-Euro5, and Petrol-Euro5 car owners.[11]

In parallel with the traffic ban, a compensation scheme for the owners of banned vehicles was devised. In 2019, and then again in 2020, city residents affected by the ban could apply for compensation from the Municipality of Milan. The Municipality financed each call for applications with a budget of respectively €3 million and €8.5 million. While the 2019 call was open only to low-income car owners, with an adjusted household income below €25,000 per year (€28,000 if aged 65+), in the second year the income criterion was dropped, and hence the call was effectively open to all residents. The compensation scheme foresees a variety of monetary incentives for affected car owners to purchase a new or second-hand car,

[11] Diesel-Euro4 cars were not affected by the emissions scandal known as Dieselgate, which erupted in 2015. Indeed, this scandal involved only cars belonging to the Diesel-Euro5 group and, among those, only cars produced by Volkswagen. Shortly after, Volkswagen offered owners of such cars a technical fix that would reduce emissions below legal thresholds. This fix was provided free of charge.

a new moped or e-bike, or public transit yearly passes.[12]

The Political Context and the Debate Revolving Area B

Although the need for action had been made clear by the legal procedures at the EU level, the design and introduction of Area B was, and still remains, highly controversial, with supporters and opponents of the policy divided along partisan lines. On the left, mayor Sala, from the Democratic Party, emphasized the need to take immediate action and enact the Area B policy. On the right, representatives of Lega, widely considered the least environmentally-conscious party in the Italian parliament, championed the opposition to Area B and embarked on a signature-gathering initiative to abolish the policy.[13]

The Governor of Lombardy (Milan's region) and prominent Lega member, Attilio Fontana, highlighted how Area B would place a disproportionate burden on the shoulders of relatively poorer citizens, who would suffer greatly from a reduction in their mobility. In his words: "Area B penalizes the weaker in society. Milan is becoming a city for the rich only".[14] Along similar lines, Lega member of parliament, Fabrizio Cecchetti, accused the Democratic Party and mayor Sala as living "in their radical-chic world, without realizing what the real needs of Milan citizens are".[15] Instead of Area B, Lega proposed some alternative measures to deal with the problem of pollution, ranging from increasing investment in public transportation to providing free filters with an improved technology to every vehicle owner, so as to reduce emissions without banning car circulation.

The intense political debate on the Area B policy has not lost much relevance in the Milan

[12] The average disbursed contribution was €2,328 in 2019, and €3,557 in 2020. Notably, these figures are very close to the median cost reported by our treated respondents due to Area B (€3,750).

[13] The partisan division on the policy also translated into a confrontation between different institutions, with the municipal government clashing with the Lega-led regional government.

[14] Affaritaliani.it (02/26/2019), "Area B, Fontana accusa: "Milano rischia di diventare città solo per ricchi"".

[15] Lanotteonline.it (02/20/2019), "Milano: Cecchetti, Lega prosegue raccolta firme contro Area B".

political debate. Since the initial implementation of the policy, with spurring demonstrations, protests, and legal actions, Area B has remained an electorally salient issue within the city, along with environmental issues in general.

The electoral trends of the last decade in Italy have seen the emergence of a strong and heterogeneous populist front, at the expense of more traditional parties on both sides of the left-right political space. Within this context, Lega has been one of the most successful forces. Under the leadership of Matteo Salvini, this populist right party went from being a regional party to being competitive on the whole national territory. It redefined its political platform by reducing its emphasis on federalism, and by focusing instead on opposition to immigration, austerity policies, regulations that could disrupt economic activities, and any limitation of sovereignty coming from European institutions. Pertinently, environmental concerns have received little attention in Lega's new political platform. As an important case in point, in 2016 Lega members were the only Italian representatives in the European Parliament who voted against the ratification of the Paris Agreement. This new direction for the party appeared to pay electoral dividends: at the 2018 national elections Lega received a vote share of 17.4% (5.7 million votes), and at the 2019 elections for the European Parliament it received 34.3% (9.2 million votes), becoming the largest party in Italy.

At the same time, the social democratic party PD, which was part of the government coalitions between 2013 and 2018, saw its support dwindle. Pundits attribute this decline to a growing anti-elite sentiment in the Italian public, coupled with a fractured party leadership and an incoherent platform on a range of issues. Among the few issues on which the Democratic Party did adopt a clear progressive stance was climate change and protection of the environment. The national government led by the Democratic Party was a major proponent of Paris Agreement, on which it signed in 2016. Exploiting the absence of a strong green party in the Italian political arena, the PD made the fight against climate change and the transition to a greener economy one of its signature issues in both the 2018 and 2019 party

manifestos.

Empirical Approach and Data

To assess the impact of the Area B car ban on residents' environmental views and voting behavior, we administered a web-based survey of 1,073 car owners in Milan. The survey was carried out by YouGov in January 2021.[16] All survey respondents reside within Area B.[17] Within our sample, 293 respondents owned a Diesel-Euro4 car at the time in which the Area B policy was announced (July 2018), and constitute our "treatment" group of residents affected by the ban. As the main control group we consider 412 owners of cars in three model categories—Petrol-Euro4, Petrol-Euro5, and Diesel-Euro5 cars—which are similar to Diesel-Euro4 cars in terms of emission category or fuel type, but were not covered by the traffic ban.[18] As another type of control group, we also interviewed 303 owners of new cars in the Euro6 category (both Diesel and Petrol). These car owners serve as a useful placebo test, for reasons we detail below.

Finally, 65 respondents did not know the fuel or emission category of their car, and were only able to report whether or not their car was affected by the Area B ban. Since these cars could be outside our target group of comparison (e.g., they could be older car models covered by the ban that we do not consider in our analysis), we estimate all specifications once without and once with those 65 respondents. In the latter case, we allocate respondents to treatment and control based on their self-report on whether or not their car was affected

[16] The survey has received IRB approval. It was administered to the YouGov panel according to the standard YouGov policy on privacy protection and participants' informed consent. More details on compliance with the Principles for Human Subjects Research can be found in the Online Appendix.

[17] Moreover, all respondents reside outside of Area C, which corresponds to the very center of the city. In Area C, cars can only circulate upon the payment of a congestion fee, and restrictions for polluting vehicles have been in place since 2012.

[18] In Online Appendix C we discuss the possibility that respondents misreported the effect of vehicle ban on their car. For reasons we lay out, it is highly unlikely that misreporting had any significant impact on our results.

by the ban. Our findings are robust to using either approach.

In cases where respondents owned more than one car, the survey question explicitly noted that the answers should pertain to their main personal car, i.e., the one they used most often. Thus, we classify a respondent as treated if their main personal car at the time the policy was announced was included in the Area B ban.[19]

To identify the effect of the Area B policy, our main analysis focuses on the owners of four car types: Diesel-Euro4 (treated), Petrol-Euro4, Diesel-Euro5, and Petrol-Euro5 cars. In selecting these four groups, our aim is to compare affected car owners to owners of relatively-similar-yet-unaffected cars. We do so by estimating difference-in-differences specifications of the following form:

$$Outcome_i = \alpha + \beta Diesel_i + \gamma Euro4_i + \delta Diesel * Euro4_i + \theta X_i + \varepsilon_i, \tag{1}$$

where i denotes individual respondents, $Outcome_i$ is either vote choice or individual attitudes and behavior. $Diesel_i$ is an indicator equal to one if respondent i owned a diesel car at the time of the Area B policy announcement; $Euro4_i$ is an indicator that equals one if respondent i owned a Euro4 car at the time of policy announcement. These two fixed effects are meant to control for any potential differences in individual types that are related to owning diesel vs. petrol, and Euro4 vs. Euro5.[20] The $Diesel * Euro4_i$ term identifies the treated car owners, i.e., those who owned a Diesel-Euro4 car. Finally, X_i is a vector of individual controls, including age, gender, education, and income.

The δ coefficient captures the treatment effect of the policy. It can be interpreted in two

[19] Clearly, since the announcement of the policy, many treated respondents may have changed their car and purchased instead a model that is not covered by the ban. That is of course part of the treatment. What matters for our purposes is the model of the car that was owned at the time of policy's announcement.

[20] In particular, diesel cars are typically more expensive to purchase, but involve lower fuel costs (Grigolon, Reynaert, and Verboven, 2018). Hence, individuals who buy diesel cars tend to be people who drive more. In turn, this characteristic could be related to different types of jobs and lifestyles that may be non-orthogonal to voting behavior and preferences.

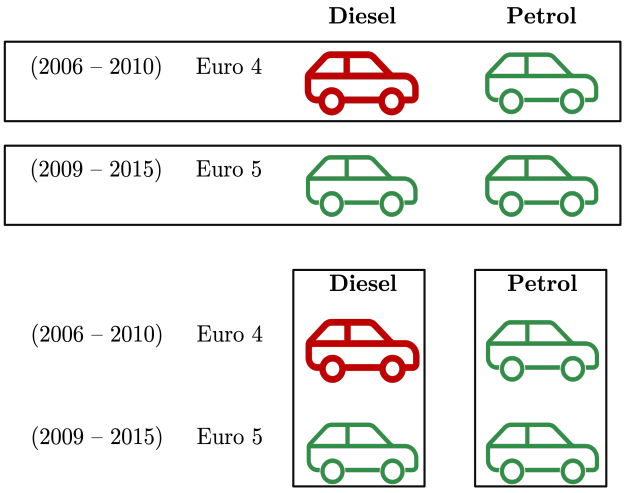
ways, visualized in Figure 2. In the first interpretation (upper panel), δ is the difference in the differences of outcomes by emission category, that is, between Diesel vs. Petrol owners of Euro4, and Diesel vs. Petrol owners of Euro5. The intuition underlying this estimation is as follows: all Euro5 owners are unaffected by the ban, so the difference between Diesel vs. Petrol owners of Euro5 models should reflect potential differences in orientation by type of fuel. In the case of Euro4 cars, Diesel owners are treated while Petrol owners are not. The difference-in-differences then captures the effect of the policy, net of any potential difference in orientations between owners of Diesel and Petrol cars (under the assumption that these different orientations play a constant role across Euro4 and Euro5).

In the second interpretation of the treatment effect (bottom panel), δ represents the difference in the differences of outcomes by the car's type of fuel, that is, between owners of Euro4 vs. Euro5 Diesel cars, and between owners of Euro4 vs. Euro5 Petrol cars. The underlying intuition in this case is as follows: all owners of petrol cars are unaffected, so the difference between Euro4 vs. Euro5 among petrol owners should reflect only differences in orientation by emission category (e.g., older vs. newer cars). However among owners of Diesel cars, only those who owned Euro4 models were treated by the ban, while owners of Euro5 models were not. Thus, the difference-in-differences captures the effect of the Area B policy, net of any potential difference in orientations between Euro4 and Euro5 owners (in this case, under the assumption that the different orientations play a constant role across Diesel and Petrol).

Table 1 compares the characteristics of the different groups of car owners in terms of their age, gender, education, and income. These are the same variables that we use as controls in the main analysis (i.e., vector X_i in Equation 1).[21] As the table makes clear, there are some differences across groups. In particular, Diesel-Euro4 car owners (i.e., the treatment

[21] In Table SI-13 we also show a comparison between our sample and census data referring to the city of Milan.

Figure (2) Difference-in-Differences Approach



Notes: Graphical representation of the impact of Area B. Red cars are banned, while green cars can still circulate.

group), are on average more educated, somewhat wealthier and under-represented among the very young and 55+ age groups.[22] Reassuringly, earlier studies (e.g., Colantone and Stanig, 2018) show that individuals with these characteristics tend to be *less* likely to support a radical-right party such as Lega. Hence, the composition of the treatment group should in fact work against finding a pro-Lega effect of the policy.[23] In line with this observation, our treatment effects are more precisely estimated when including individual-level controls.

Figure 3 shows descriptive evidence on the self-reported costs incurred by treated car owners due to the Area B policy. These costs were substantial, with about 16% reporting losses between 1.5 and 2.5 thousand euros; over 22% between 2.5 and 5 thousand, and another 19% above 5 thousand euros. Less than 10% reported no losses as a consequence

[22] Note that our research design led us to exclude from the survey owners of older banned cars (i.e., Diesel-Euro0-3 and Petrol-Euro0). Those individuals presumably have relatively lower income, and thus could arguably display a stronger political reaction to the policy. By excluding them from the treatment group, we are possibly underestimating the overall effect of the policy on support for Lega.

[23] We also tested this proposition more formally. First, we predicted support for Lega among participants in the control group using a model that consisted only of the controls (age, gender, education (four levels) and income (16 levels)). We then used the estimated parameters to predict Lega support among all observations. We then compared the predicted probabilities of support among the two groups, finding that the treated were significantly less likely (16.8%) than the control (23.7%) to support Lega based on their demographic characteristics.

Table (1) Descriptive Statistics of the Sample

	Full Sample	Diesel Euro 4	Diesel Euro 5	Petrol Euro 4	Petrol Euro 5
Age					
18-24	2.7	1.4	1.7	2.5	2.3
25-34	10.8	6.1	13.3	15.5	19.4
35-44	34.7	43.3	21.7	31.9	23.5
45-54	31.3	41.9	35	22.9	26.4
55+	20.5	7.2	28.3	27.0	28.2
Gender					
Male	52.2	69.3	61.7	43.4	44.7
Female	47.8	30.7	38.3	56.6	55.3
Education					
High school diploma	33.7	16	36.7	48.4	41.2
Bachelors	27.2	30.7	27.5	23.0	27.1
MA or higher	38.5	52.6	35	27.9	30.6
Unknown	0.6	0.7	0.8	0.8	1.2
Income					
Less than 15,000€ per year	6.9	4.4	5.8	18.9	11.8
From 15,000€ to 29,999€ per year	20.3	7.8	24.2	29.5	30
From 30,000€ to 44,999€ per year	21.7	30	16.6	19.7	21.2
From 45,000€ to 69,999€ per year	14.9	14.7	20	9	12.9
Above 70,000€ per year	26.8	38.6	20	5.7	11.8
No Answer / DK	9.3	4.4	12.5	17.2	12.4
N	1073	293	120	122	170

Notes: Descriptive statistics on the composition of the sample, overall and by type of car. All figures are shares, summing up to 1 within each column, by section.

of the introduction of the car ban, perhaps because their car had already an ex-ante market value close to zero. Overall, treated car owners reported a significant cost as a result of the Area B policy, with the mid-point of the median category indicating a hefty loss of €3,750.

Results

Voting

Our main interest is in the impact of the Area B policy on individual vote choices. We focus on the May 2019 elections to the European Parliament, the sole elections that took place in Milan between the Area B policy announcement (July 2018) and the time of the survey (January 2021). At the time of these elections, the policy had been announced for almost a year. Importantly, EU Parliament elections tend to be fought largely on national political issues, by the same parties competing at the national elections (see, e.g., Reif and

FONDAZIONE ENI ENRICO MATTEI WORKING PAPER SERIES

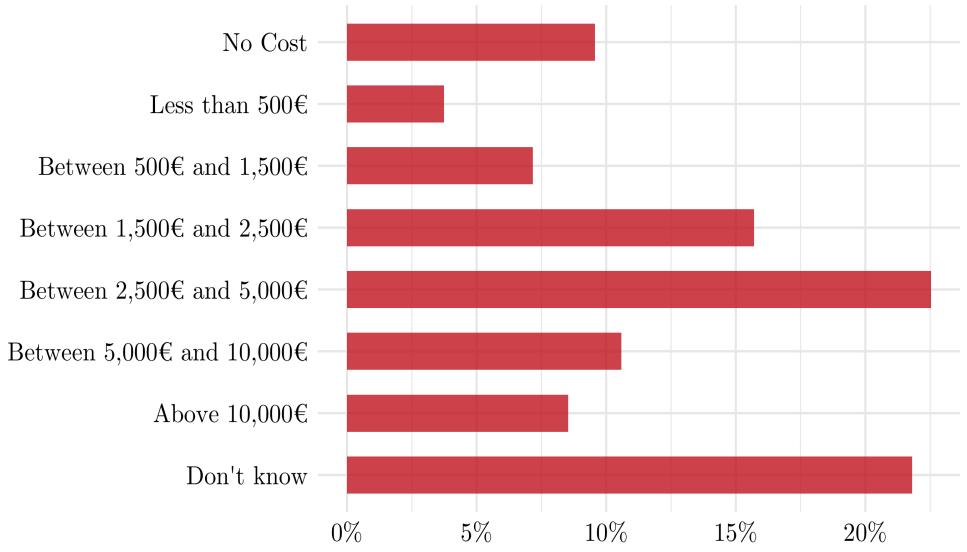
"NOTE DI LAVORO"

Our Working Papers are available on the Internet at the following address:
https://www.feem.it/pubblicazioni/feem-working-papers/

"NOTE DI LAVORO" PUBLISHED IN 2022

1. 2022, Daniele Crotti, Elena Maggi, Evangelia Pantelaki, Urban cycling tourism. How can bikes and public transport ride together for sustainability?
2. 2022, Antonio Acconcia, Sergio Beraldo, Carlo Capuano, Marco Stimolo, Public subsidies and cooperation in research and development. Evidence from the lab
3. 2022, Jia Meng, ZhongXiang Zhang, Corporate Environmental Information Disclosure and Investor Response: Empirical Evidence from China's Capital Market
4. 2022, Mariagrazia D'Angeli, Giovanni Marin, Elena Paglialunga, Climate Change, Armed Conflicts and Resilience
5. 2022, Davide Antonioli, Claudia Ghisetti, Massimiliano Mazzanti, Francesco Nicolli, The economic returns of circular economy practices
6. 2022, Massimiliano Mazzanti, Francesco Nicolli, Stefano Pareglio, Marco Quatrosi, Adoption of Eco and Circular Economy-Innovation in Italy: exploring different firm profiles
7. 2022, Davide Antonioli, Claudia Ghisetti, Stefano Pareglio, Marco Quatrosi, Innovation, Circular economy practices and organisational settings: empirical evidence from Italy
8. 2022, Ilenia Romani, Marzio Galeotti, Alessandro Lanza, Besides promising economic growth, will the Italian NRRP also produce fewer emissions?
9. 2022, Emanuele Ciola, Enrico Turco, Andrea Gurgone, Davide Bazzana, Sergio Vergalli, Francesco Menoncin, Charging the macroeconomy with an energy sector: an agent-based model
10. 2022, Emanuele Millemaci, Alessandra Patti, Nemo propheta in Patria: Empirical Evidence from Italy
11. 2022, Daniele Valenti, Andrea Bastianin, Matteo Manera, A weekly structural VAR model of the US crude oil market
12. 2022, Banchongsan Charoensook, On Efficiency and Stability in Two-way Flow Network with Small Decay: A note
13. 2022, Shu Guo, ZhongXiang Zhang, Green credit policy and total factor productivity: Evidence from Chinese listed companies
14. 2022, Filippo Bontadini, Francesco Vona, Anatomy of Green Specialisation: Evidence from EU Production Data, 1995-2015
15. 2022, Mattia Guerini, Fabio Vanni, Mauro Napoletano, *E pluribus, quaedam*. Gross domestic product out of a dashboard of indicators
16. 2022, Cinzia Bonaldo, Fulvio Fontini, Michele Moretto, The Energy Transition and the Value of Capacity Remuneration Mechanisms
17. 2022, Giovanni Marin, Francesco Vona, Finance and the Reallocation of Scientific, Engineering and Mathematical Talent
18. 2022, Anna Laura Baraldi, Erasmo Papagni, Marco Stimolo, Neutralizing the Tentacles of Organized Crime. Assessment of Anti-Crime Measure in Fighting Mafia Violence
19. 2022, Alexander Golub, Jon Anda, Anil Markandya, Michael Brody, Aldin Celovic, Angele Kedaitiene, Climate alpha and the global capital market
20. 2022, Jlenia Di Noia, Agent-Based Models for Climate Change Adaptation in Coastal Zones. A Review
21. 2022, Alberto Gabino Martínez-Hernández, System Dynamics modelling and Climate Change Adaptation in Coastal Areas: A literature review
22. 2022, Pietro De Ponti, Matteo Romagnoli, Financial Implications of the EU Emission Trading System: an analysis of wavelet coherence and volatility spillovers
23. 2022, Laura Cavalli, Mia Alibegovic, Davide Vaccari, Andrea Spasiano, Fernando Nardi, Sustainability assessment of the public interventions supported by the ReSTART project in the CITI4GREEN framework
24. 2022, Filippo Maria D'Arcangelo, Giulia Pavan, Sara Calligaris, The Impact of the European Carbon Market on Firm Productivity: Evidence from Italian Manufacturing Firms.
25. 2022, Enrico Turco, Davide Bazzana, Massimiliano Rizzati, Emanuele Ciola, Sergio Vergalli, Energy prices shocks and macroeconomic stabilization policies in the MATRIX model
26. 2022, Mario Gilli, Filippo Giorgini, Citizens Protests: causes and consequences. A Research on Regime Change and Revolutionary Entrepreneurs

Figure (3) Cost of the Area B Policy



Notes: Each bar represents the share of treated respondents reporting Area B costs in the range displayed on the left of the figure.

Schmitt, 1980; Eijk, Franklin, and Marsh, 1996). Moreover, given that EU elections do not have direct consequences on the composition of national parliaments and governments, voters tend to vote less strategically than in national elections (Hobolt and Wittrock, 2011). Taken together, these two features make EU Parliament elections a good thermometer for parties' electoral support and future prospects (Marsh, 1998).

Our main dependent variable is an indicator that takes the value 1 if the respondent reports voting for Lega, and zero otherwise. We also investigate potential treatment effects on support for other parties. In particular, to assess potential anti-incumbent effects, we examine support for the Democratic Party, the party of the city's mayor.

To account for individual trajectories over time, we also collected information on respondents' vote choice in three earlier elections that were held in Milan before the Area B policy was announced: legislative and regional elections held in March 2018, and municipal elections that took place in June 2016. This information allows us to: (1) control for past

vote choice in the main analysis; (2) analyze the treatment effect on voters' likelihood of switching parties; and (3) run placebo analyses on pre-trends (i.e., choices made before the treatment occurred).

Table (2) Voting for Lega in EU Elections of 2019

	Dep. var.: Vote for Lega EU 2019					
	(1)	(2)	(3)	(4)	(5)	(6)
Diesel X Euro 4	0.119	0.183*	0.154*	0.115*	0.094	0.146*
	(0.075)	(0.079)	(0.078)	(0.047)	(0.052)	(0.060)
Diesel	−0.093	−0.105	−0.082	−0.024	0.003	−0.001
	(0.056)	(0.057)	(0.055)	(0.036)	(0.040)	(0.049)
Euro 4	−0.048	−0.048	−0.019	0.007	0.026	−0.028
	(0.058)	(0.059)	(0.059)	(0.033)	(0.036)	(0.043)
Age		0.002	0.001	0.001	0.003**	0.002
		(0.002)	(0.002)	(0.001)	(0.001)	(0.001)
Female		0.189**	0.167**	0.147**	0.173**	0.201**
		(0.039)	(0.038)	(0.028)	(0.030)	(0.035)
Past Lega Vote				0.812**	0.779**	0.730**
				(0.034)	(0.040)	(0.045)
Education F.E.	No	Yes	Yes	Yes	Yes	Yes
Income F.E.	No	Yes	Yes	Yes	Yes	Yes
Past Lega Vote	No	No	No	L2018	R2018	M2016
Observations	602	602	665	583	551	533
R^2	0.005	0.130	0.153	0.601	0.577	0.494

Notes: Columns 2-6 report estimates from regression models that include controls for age and gender, as well as fixed effects for education levels and income brackets. Column 3 includes respondents that did not report their car's fuel and/or emission category. Columns 4-6 include dummies for past Lega vote in legislative, regional, and municipal elections, respectively. Robust standard errors in parentheses. *p<0.05; **p<0.01.

Table 2 reports estimates of Equation 1 on voting. The dependent variable is a vote for Lega in the 2019 elections. The specification in column 1 does not include individual-level controls. These are introduced in column 2, which reports our benchmark estimates where we control for respondents' age, gender, education and income. In column 3, we re-estimate the benchmark specification, this time including in the sample the additional respondents

who were unable to report the type of fuel and/or emission category of their car. We assign these respondents to treatment or control based on their self-reports of whether or not their car was affected by the ban. In columns 4-6, we replicate the benchmark specification of column (2) and add to it indicators that denote a vote for Lega in one of the three previous elections, respectively.[24]

The treatment effect in Equation 1 is captured by the parameter δ, i.e., the coefficient on the interaction term $Diesel * Euro4$. This coefficient is positive across the board, and precisely estimated when including individual controls. The only exception is column 5, where the coefficient is only significant at the 10% level. In terms of magnitude, the average estimated effect is 13.5 percentage points, a substantively sizable shift considering that the baseline rate of support for Lega in the sample was 24.4%. Put differently, owning a car affected by the vehicle ban raised the probability of voting for Lega in the subsequent elections by 55% above the baseline rate. Given the standard errors, the actual increase in vote for Lega could of course be smaller, albeit still statistically significant.[25]

Interestingly, the indicators for Diesel and Euro4 are never significant, showing no systematic differences in voting preferences as a function of the type of fuel or emission category itself. In contrast, the three indicators for past Lega vote in columns 4-6 are positive and highly significant, as one would expect. In fact, their estimated coefficients suggest a relatively high degree of persistence in support for Lega.

So far we have examined the empirical relationship between owning a car banned by the Area B policy and vote for Lega. Next, we use the information on voting preferences in earlier elections to analyze the probability of the policy leading residents to *switch* their votes from other parties to Lega. Results are reported in Figure 4. In panel [a] we focus on respondents

[24] The results are robust to jointly controlling for Lega vote in the three previous elections. See column 1 of Table SI-1.

[25] Our findings are robust to restricting the control group to Diesel-Euro5 owners only, and to controlling for the number of kilometers driven per year, as well as for the frequency of car use (see, respectively, Tables SI-8, SI-9, and SI-10.

who: (1) voted both in the legislative elections of 2018 and in the EU elections of 2019; and (2) did not vote for Lega in the legislative elections of 2018. The dependent variable is an indicator equal to one if the respondent switches to Lega in the first elections after the Area B policy is introduced. From left to right, the specifications in the three coefficient plots follow columns 1-3 of Table 2, i.e., excluding individual controls, including them (our benchmark specification), and including respondents with missing car details. Panel [b] and [c] replicate the same approach as in panel [a], but focus on switching from regional elections of 2018 and municipal elections of 2016, respectively. Consistent with the previous analysis, the coefficient on the interaction term $Diesel * Euro4$ is positive and significant in all specifications. Note that the indicators for Diesel and Euro4 are never significant.

The benchmark estimates indicate that being affected by the traffic ban raises the probability of switching to Lega by about 15 percentage points when using the two elections of 2018 as the baseline, and by 18.6 points if the baseline is the municipal elections of 2016. These effects are substantively large, implying more than a two-fold increase in the probability of switching above the baseline rate.[26]

To examine whether this effect was unique to Lega, Table 3 shows the electoral impact of the policy on the three other major parties competing in the 2019 elections: the center-left Democratic Party; the mainstream-right Forza Italia; and the populist left Five Star Movement. For each party, we report the benchmark specification with controls, as in column 2 of Table 2, and three additional specifications where we control for past vote in each earlier election.[27] The estimated treatment effects are never statistically different from zero, suggesting that the policy had no discernible impact on voting for these parties. The null result on the Democratic Party is particularly interesting, as it suggests that voters

[26] See Tables SI-8-SI-10 for robustness checks as described in footnote 25. Moreover, in Table SI-11 we show that our findings are robust to including in the analysis respondents who voted in the European elections of 2019 but did not vote in the earlier elections, thus potentially switching from "non vote" to vote for Lega.

[27] Results are robust to controlling for past vote in the three previous elections jointly. See columns 2-4 of Table SI-1.

did not penalize the party of the incumbent mayor, who was directly accountable for the introduction of the traffic ban.

The question these findings raise, then, is where the switchers to Lega came from. To address this question, Figure 5 provides descriptive evidence on the electoral flows in our sample, from the legislative elections of 2018 to the EU elections of 2019.[28] As the figure shows, only a tiny fraction of Lega voters in 2019 did not vote in the earlier elections; 3% of switchers toward Lega came from the Democratic Party; 18% were previously voters of the Five Star Movement, and 16% were former supporters of Forza Italia. An additional 7% of the Lega vote came from Brothers of Italy, another populist right party. The bulk of switchers, 49%, came from "Other" parties, namely small outfits that were not specified in our list of eight possible options.

To further tease out this finding, in Figure SI-12 we provide a full list of the "other" parties, by elections, along with their official vote share in the city of Milan and their ideological position. The extreme right is well represented in the group (e.g., the well-known "CasaPound"); other ideological positions are also represented, including the extreme left (e.g., "Potere al Popolo").

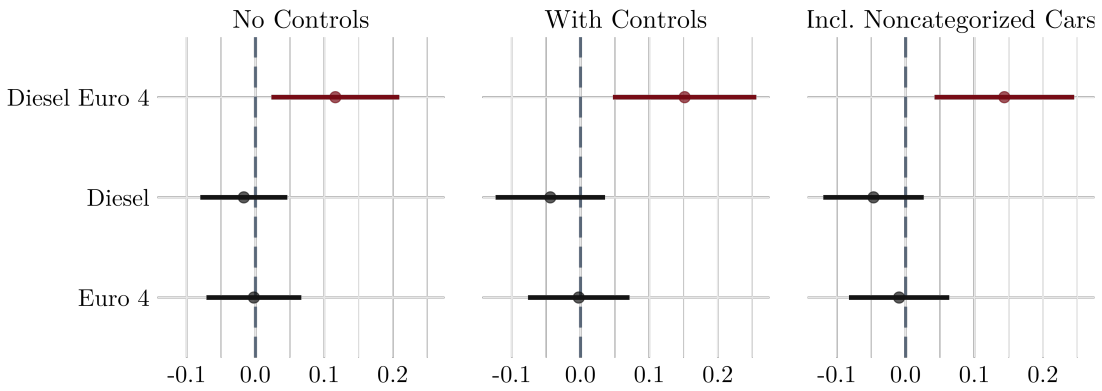
Overall, our evidence indicates that the response to the Area B policy was not a shift of center-left Democratic voters toward Lega. Rather, it seems to reflect a coalescence of people who had voted before, but not for any of the main parties.[29] These voters rallied in support of the populist right party that represented the most visible and vocal opposition to the new policy that adversely affected them.

[28] We see very similar patterns when we focus instead on the regional elections of 2018 or on the municipal elections of 2016 as the baseline. See Figures SI-2-SI-3.

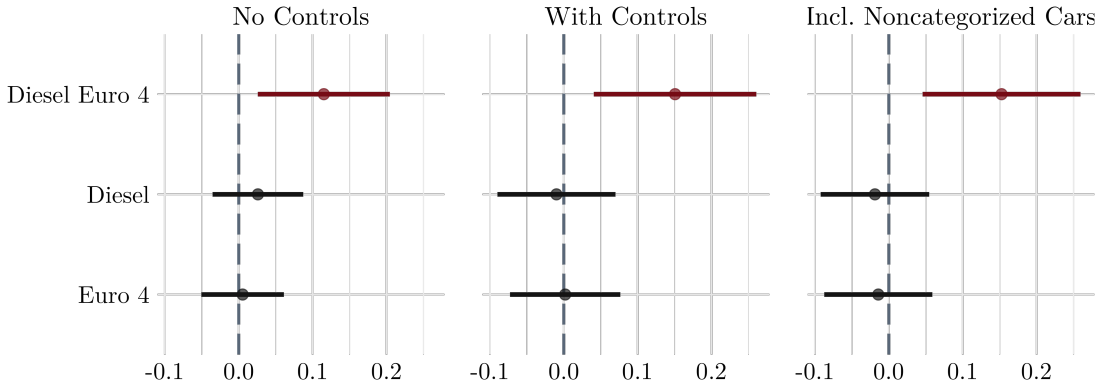
[29] Note that choosing the option "other" parties in the survey was not a substitute for "no answer" or "don't remember", for which there were specific options available. For instance, for the legislative elections of 2018, the share of respondents who declare voting for "other" parties is 5%, very close to the official cumulative vote share for these parties: 4.7%.

Figure (4) Switching to Lega in 2019

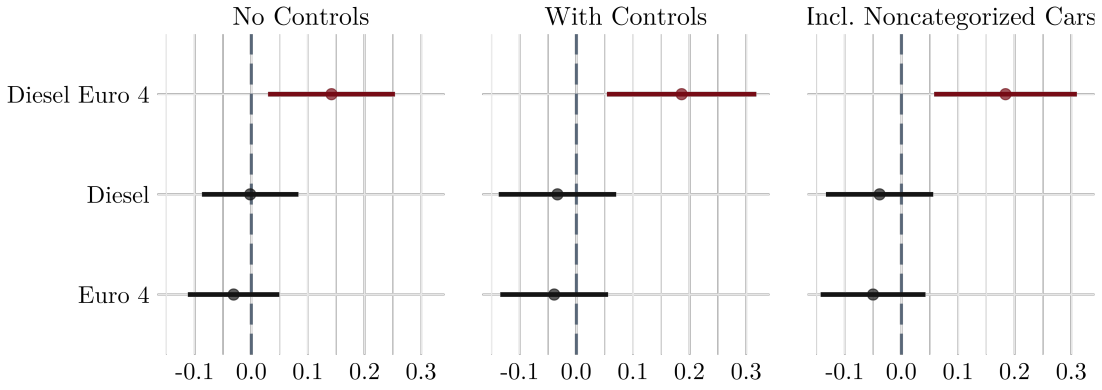
(a) From Legislative Elections 2018



(b) From Regional Elections 2018



(c) From Municipal Elections 2016



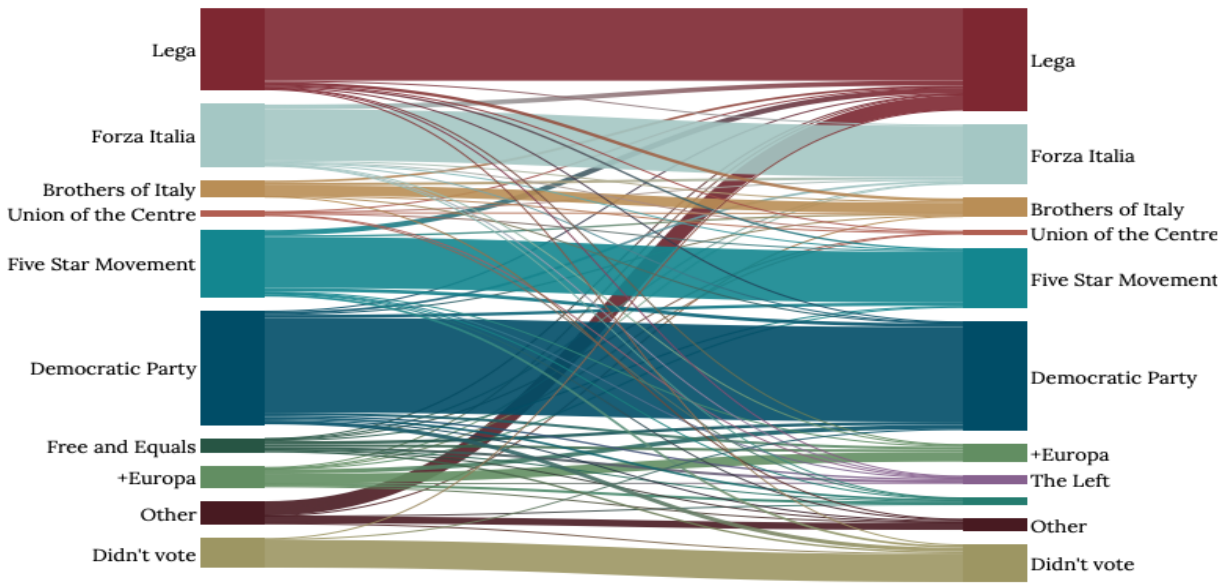
Notes: Coefficient estimates refer to regressions where the dependent variable is an indicator for vote switching to Lega in 2019. Each panel refers to a different earlier election, and reports three different specifications, as in columns 1-3 of Table 2. The bars are 95% CIs. Full results in Table SI-2.

Table (3) Voting for Other Major Parties in EU Elections of 2019

	Dep.var.: Vote for Other Parties EU 2019											
	Voting for Democratic Party				Voting for Forza Italia				Voting for Five Star Movement			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Diesel X Euro 4	0.067	0.033	0.056	0.017	−0.052	0.003	0.051	−0.005	−0.090	−0.005	0.012	−0.011
	(0.081)	(0.053)	(0.057)	(0.064)	(0.058)	(0.032)	(0.039)	(0.041)	(0.069)	(0.038)	(0.039)	(0.041)
Diesel	−0.007	−0.032	−0.026	−0.040	0.030	−0.038	−0.070	−0.007	0.054	0.020	0.025	0.022
	(0.056)	(0.035)	(0.041)	(0.044)	(0.044)	(0.028)	(0.036)	(0.035)	(0.052)	(0.029)	(0.034)	(0.032)
Euro 4	0.069	−0.002	0.002	0.076	−0.063	0.001	−0.021	−0.020	0.021	−0.003	−0.058*	−0.024
	(0.063)	(0.043)	(0.048)	(0.054)	(0.037)	(0.025)	(0.028)	(0.030)	(0.051)	(0.027)	(0.027)	(0.030)
Age	0.008**	0.002	0.003*	0.006**	-0.002	0.000	-0.001	-0.000	-0.005**	-0.001	-0.001	-0.002
	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Female	-0.062	0.001	-0.008	-0.025	-0.097**	-0.020	-0.014	-0.046*	0.006	0.003	0.014	0.017
	(0.036)	(0.022)	(0.024)	(0.026)	(0.032)	(0.018)	(0.023)	(0.023)	(0.033)	(0.018)	(0.019)	(0.021)
Past Vote		0.782**	0.726**	0.739**		0.847**	0.753**	0.738**		0.770**	0.845**	0.808**
		(0.038)	(0.040)	(0.039)		(0.035)	(0.043)	(0.044)		(0.042)	(0.038)	(0.043)
Education F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Income F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Lagged Vote	No	L2018	R2018	M2016	No	L2018	R2018	M2016	No	L2018	R2018	M2016
Observations	602	583	551	533	602	583	551	533	602	583	551	533
R^2	0.290	0.724	0.708	0.700	0.262	0.800	0.714	0.728	0.135	0.692	0.680	0.685

Notes: All columns report estimates from regression models that include controls for age and gender, as well as fixed effects for education levels and income brackets. Columns 2-4, 6-8, and 10-12 include dummies for past vote in legislative, regional, and municipal elections, respectively. Robust standard errors in parentheses. *p<0.05; **p<0.01.

Figure (5) Electoral Flows from Legislative 2018



Notes: The figure reports electoral flows from the legislative elections of 2018 (left side) to the EU elections of 2019 (right side).

More generally, our results highlight the fact that the introduction of green policies may induce a backlash in different ways. In addition to an anti-incumbent response, as found by Stokes (2016), the backlash may also take the form of rising support for green-skeptical parties. This could occur even without a drop in support for the incumbent, and nonetheless hamper the political basis of environmental action.

Robustness

To further substantiate a causal interpretation of our findings, we perform several placebo tests. The first test is one where we analyze the impact of the policy in a similar way as we have done before, only in this case we compare owners of Euro5 and the newer Euro6 cars, i.e., all cars that were not affected by the Area B ban.

Table 4 reports estimates of the following specification:

$$Vote_Lega_EU2019_i = \alpha + \beta Diesel_i + \gamma Euro5_i + \delta Diesel * Euro5_i + \theta X_i + \varepsilon_i. \quad (2)$$

Compared to the baseline specification in Equation 1, here the δ parameter would capture potentially different voting behavior by owners of Diesel-Euro5 cars, compared to owners of Petrol-Euro5 cars and owners of Euro6 cars, both Diesel and Petrol. As noted, none of these cars were affected by the Area B traffic ban. Hence, in this case Diesel-Euro5 car owners constitute a "fake" treatment group. If we were to find a positive and significant estimate of the δ parameter, it would be concerning as it would suggest the presence of a general shift toward Lega among owners of relatively older diesel cars, independent from the impact of the Area B policy. Reassuringly, that is not the case: the δ estimates reported in Table 4 are not statistically distinguishable from zero, showing a pattern that is very different from the one we observe with the real treatment group.

As a second robustness test, we focus on pre-trends. In Figure 6 we return to the baseline estimation of Equation 1, where we compare Diesel-Euro4 car owners, affected by the traffic ban, to unaffected owners of Petrol-Euro4 and Euro5 cars, both Diesel and Petrol. As before, we examine the probability of vote switching toward Lega from one election to the other, similar to the analysis presented in Figure 4. However, in this case we consider vote switching over elections that were held *before* the announcement of the Area B policy. Specifically, in the left panel the dependent variable is an indicator variable that equals one if the respondent switches to Lega in the legislative elections of 2018, coming from a vote to another party in the municipal elections of 2016; in the right panel the dependent variable captures switching to Lega from the municipal elections of 2016 to the regional elections of 2018. Positive and significant estimates of the δ parameter would raise concerns, as they would point to a shift toward Lega by Diesel-Euro4 car owners that pre-dates the announcement of the Area B

Table (4) Vote Lega EU 2019 - EURO 5-6

	Placebo Test: Euro 5-6	
	(1)	(2)
Diesel X Euro 5	−0.005	−0.025
	(0.076)	(0.077)
Diesel	−0.089	−0.066
	(0.051)	(0.056)
Euro 5	0.002	0.018
	(0.054)	(0.054)
Age		0.000
		(0.002)
Female		0.059
		(0.039)
Education F.E.	No	Yes
Income F.E.	No	Yes
Observations	495	495
R^2	0.011	0.093

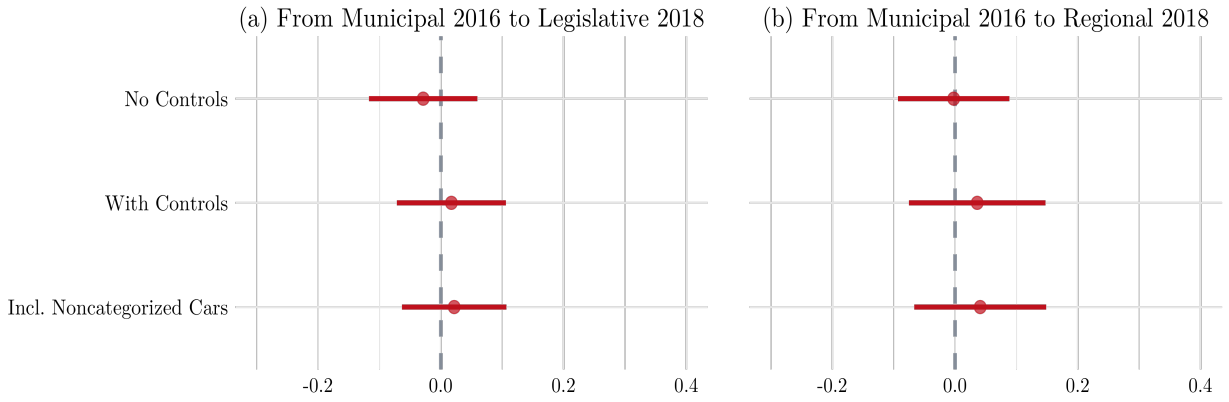
Notes: Estimates of Equation 2.
Robust standard errors in parentheses.
*p<0.05; **p<0.01.

policy. This would constitute a violation of the parallel trends assumption of the diff-in-diff analysis. Reassuringly, the δ estimates reported in Figure 6 are always close to zero and well below statistical significance.

Mechanisms

Having analyzed the treatment effects of Area B on voting, we now turn to investigate possible mechanisms through which the traffic ban may have raised support for the populist right party Lega. We focus on two potential mechanisms, that are not mutually exclusive. First, exposure to the traffic ban may have induced a shift toward less environment-friendly attitudes and behavior, which in turn translated into higher support for Lega, a party widely recognized for its skepticism toward the environmental agenda (Atkins and Menga, 2022;

Figure (6) Vote Switching Before Area B



Notes: Treatment effect estimates from regressions where the dependent variable is an indicator for vote switching to Lega before Area B. Each panel considers switching between different elections and reports results from three different specifications, as in columns 1-3 of Table 2. The bars are 95% CIs. Full results in Table SI-3.

Bulli, 2019; Valbruzzi et al., 2019).

A second potential mechanism holds that being affected by the traffic ban may have generated hostility not to environmentalism in general, but specifically to a green policy approach that places disproportionate costs on a narrow group of people. Such a shift in views could tilt voters toward Lega, the most vocal opponent of the Area B policy. Importantly, and as noted earlier, Lega did not actually deny the need for taking some action to reduce air pollution in the city of Milan; instead, its criticism centered on the specific design of the Area B policy, which concentrated heavy losses on some, particularly less well-off citizens.

Evidence in line with the first mechanism could be read with pessimism regarding the prospects of the green agenda. Indeed, if citizens adversely affected by a specific green policy tend to become more generally opposed to environmentalism, in attitudes or behavior, this would create new hurdles in the effort to advance the green transition. Evidence in line with the second mechanism would be somewhat more encouraging, as it would suggest that measures that soften the distributional implications of green policies would increase their

public acceptability.

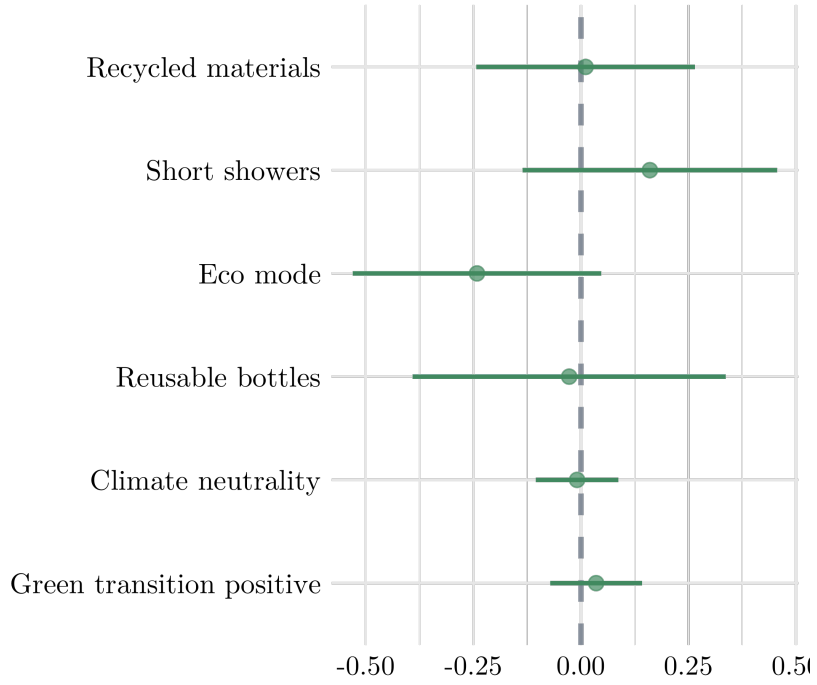
To evaluate the first mechanism, we examine the impact of the Area B policy on residents' environmental views and behavior. The top panel of Figure 7 reports estimated treatment effects based on the specification outlined in Equation 1, with individual controls as in the benchmark specification of column 2 in Table 2. The dependent variables are reported on the left of the panel, beside each δ coefficient estimate. Beginning at the top of the figure, the first four rows focus on the policy's impact on environment-friendly behavior. Specifically, the dependent variables reflect respondents' report of how frequently—on a five-point scale ranging from 'never' to 'always'—they carry out each of the following: (1) buy products made using recycled materials and/or packaged without plastic; (2) take short showers to preserve water; (3) use home appliances in Eco mode; and (4) use reusable bottles for water. All the estimated effects are non-significant, indicating no systematic differences in behavior between car owners in the treatment and control groups.

Turning to attitudes, the dependent variable in row 5 is an indicator that equals 1 if the respondent partially or fully agrees with the statement that the government and local institutions should adopt emission-reducing initiatives aimed at achieving climate neutrality in Italy by 2050. In row 6 we consider agreement with the statement that adoption of green policies against pollution and climate change will have a 'very positive' impact on citizens. In both cases the estimated effects are very small and not statistically distinguishable from zero, indicating no systematic differences in attitudes on those issues between treated and non-treated respondents.

To further understand how Area B affected locals' environmental stance, we also embedded in the survey two more behavioral measures. These were designed to shed light on the impact of Area B on respondents' concern with environmental action at the global versus the local level. Indeed, incurring high costs due to Area B could in theory have turned residents against local air quality concerns while maintaining interest in, and support for,

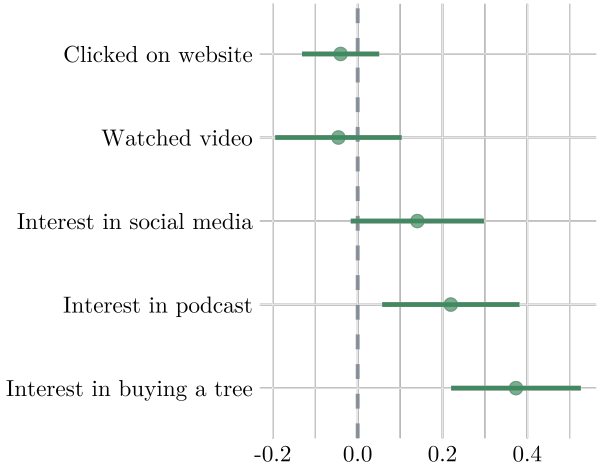
Figure (7) Environmentalism

(a) Environment-friendly behavior and attitudes

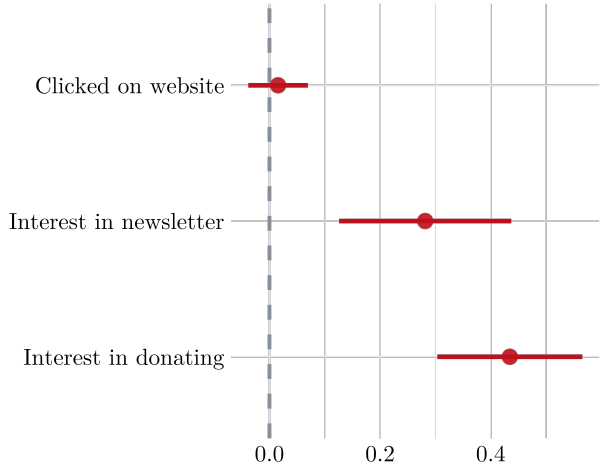


Environmental Action at:

(b) Global Level (ZeroCO2)



(c) Local Level (Genitori Antismog)



Notes: All panels of this figure report estimated treatment effects according to the benchmark specification of column 2 in Table 2. Dependent variables are indicated on the left of each panel, in correspondence of each coefficient. The bars are 95% CIs. Full results in Tables SI-4-SI-6.

climate action at the global scale.

The first set of quasi-behavioral measures is based on a collaboration with ZeroCO2, a company that offers customers the option of reducing their carbon footprint by paying for the planting of trees in their name in various parts of the world, an action that helps reduce CO2 concentration in the atmosphere.[30] After providing information about the company and its services, we prompted respondents with the option to: (1) click on the company's website; (2) watch a short video (40 seconds) about the company; express interest in: (3) following the company's page on social media (e.g., Instagram); (4) listening to the company's podcast on environmental sustainability; or (5) planting a tree at a price of €13.6 (discounted by 15% compared to the normal price of €16 charged by ZeroCO2 for pine trees). If people adversely affected by the Area B policy grew consequently more hostile to environmentalism, we would expect them to exhibit less interest in the services offered by ZeroCO2.

Panel [b] of Figure 7 displays the estimated treatment effects on five indicators based on the survey items just described. All estimates refer to the benchmark specification outlined in Equation 1. As the figure shows, treated respondents were as likely as others to click on ZeroCO2's website, and to watch the video about the company. However, they were more likely to express an interest in purchasing a tree, as well as in listening to the company's podcast or in following the company on social media.[31]

Very similar evidence emerges from a second study embedded in the survey. In this case, we investigate potential shifts in attitudes and behavior concerning environmental action at the local level, within a context that is more closely related to the Area B policy. Specifically, we drew respondents' attention to Genitori Antismog (Italian for "antismog parents"), a nonpartisan association that has been active in Milan for about twenty years,

[30] When customers purchase a tree, they can monitor through pictures the tree's growth over several years.

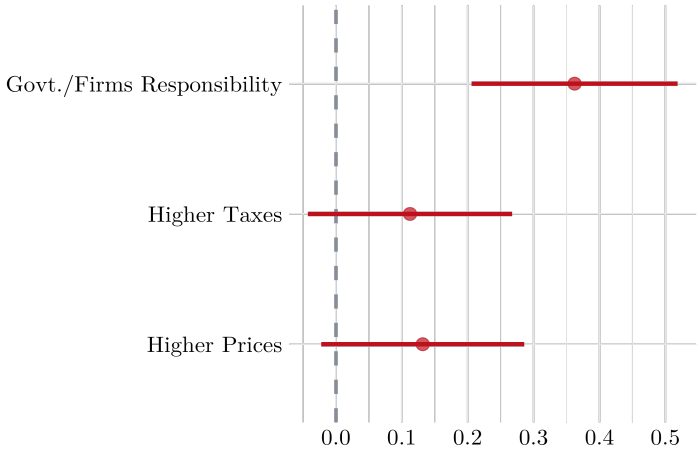
[31] ZeroCO2 allowed us to obtain information on how many respondents actually purchased a tree from a dedicated web-page that was accessible only by our survey participants, directly from the YouGov platform. Only one respondent actually purchased a tree from the dedicated link we provided in the survey. However, more individuals may have done so from the ZeroCO2 website after completing the survey.

and has two main goals: (1) encourage politicians to tackle air pollution in Milan by acting as a watchdog on legislative initiatives; and (2) informing citizens on environmental issues, with specific attention to children via collaborations with local schools. In this case, we prompted respondents with the options to: (1) click on the association's website; and express interest in: (2) subscribing to its newsletter; or (3) donating money to the association. Panel [c] of Figure 7 displays the estimated treatment effects on these three outcomes, using the benchmark specification. As the figure shows, treated respondents were as likely as others to click on the association's website, but were significantly more likely to express interest in subscribing to the newsletter and donating to the association.

In sum, these results indicate that owning a car banned by the Area B policy did not make residents more hostile to environmental issues in terms of attitudes or behavior. If anything, treated respondents appear to display a higher degree of interest in environmental action, suggesting that personal exposure to the ban may have increased their awareness of, or concern with, environmental issues. Overall then, an anti-green shift in attitudes and behavior does not seem to be the main channel through which exposure to Area B translated into higher support for Lega.

Next, we examine the second mechanism: disaffection from a policy approach that places the transition costs on a small segment of residents, leading them to vote for Area B's chief opposition. To assess this explanation, in the top row of Figure 8 the dependent variable is an indicator that takes the value 1 if the respondent partially or fully agrees with the statement that preserving the environment is the "responsibility of governments and big firms more than of citizens". The treatment effect is positive and precisely estimated, indicating that those hurt by the car ban were a whopping 36 percentage points more likely to share this view. In the central row, the dependent variable is an indicator that equals one if the respondent is ("fairly" or "very") willing to pay higher taxes in order to finance public initiatives aimed at preserving the environment. The treatment effect is again positive, but

Figure (8) Prices, Taxes, and Responsibility



Notes: Treatment effect estimates according to the benchmark specification of column 2 in Table 2. Dependent variables are indicated on the left of the figure, in correspondence of each coefficient. The bars are 95% CIs. Full results in Table SI-7.

imprecisely estimated. The same applies to the bottom row, where the dependent variable is an indicator denoting if the respondent is willing to pay more for environment-friendly goods and services (13.2 pp, p<0.1).

Overall, car owners affected by the ban appear more likely to support an active role of government and big firms for environmental action, even if this entails higher taxes, or higher prices to be paid for environment-friendly goods and services. These findings suggest a preference for a different approach to green policies, such as financing them in a more progressive fashion, perhaps through the general tax system.

Relatedly, in line with Lega's stance on these issues, the political reaction of affected drivers appears to reflect dissatisfaction with the pocketbook losses they incurred. Table 5 provides further evidence consistent with this interpretation. Specifically, in column 1 we augment the benchmark specification of column 2 in Table 2 with an indicator variable *Compensated*, which is equal to 1 for treated respondents who had received economic support from the municipality of Milan for substituting their cars (and zero otherwise). In columns 2-4 we proceed in the same way with the benchmark specification used in Figure 4, where

Table (5) Compensation

	EU Parliament 2019			
	Vote for Lega	Switch to Lega	Switch to Lega	Switch to Lega
	(1)	(2)	(3)	(4)
Diesel X Euro 4	0.207**	0.165**	0.167**	0.204**
	(0.079)	(0.053)	(0.056)	(0.067)
Compensated	−0.254**	−0.144**	−0.181**	−0.167**
	(0.055)	(0.052)	(0.035)	(0.050)
Diesel	−0.110	−0.045	−0.012	−0.035
	(0.057)	(0.040)	(0.040)	(0.052)
Euro 4	−0.048	−0.001	0.005	−0.038
	(0.059)	(0.037)	(0.037)	(0.048)
Age	0.001	0.001	0.003**	0.002
	(0.002)	(0.001)	(0.001)	(0.001)
Female	0.171**	0.150**	0.198**	0.182**
	(0.039)	(0.028)	(0.031)	(0.035)
Education F.E.	Yes	Yes	Yes	Yes
Income F.E.	Yes	Yes	Yes	Yes
Switch from:		L2018	R2018	M2016
Observations	602	483	450	452
R^2	0.145	0.235	0.326	0.232

Notes: In column 1 the dependent variable is an indicator for voting Lega in the EU elections of 2019. In columns 2-4 the dependent variables are indicators for switching to Lega from the legislative 2018, regional 2018, and municipal elections 2016, respectively. All regressions include individual controls, as in the benchmark specification of column 2 in Table 2. Robust standard errors in parentheses. *p<0.05; **p<0.01.

we consider vote switching toward Lega from earlier elections.

As the table shows, the treatment effect remains positive and precisely estimated in all columns. At the same time, the compensation dummy is always negative and significant, and has a similar magnitude as the treatment effect. This suggests that treated respondents who received economic support were not more likely than respondents in the control to shift to Lega. However, this finding should be interpreted with caution, as receiving support required a formal application process, which may raise an issue of selection into compensation.

For instance, awareness of the existence of a compensation scheme, as well as willingness to apply for it, may vary along partisan lines. Moreover, individuals who were able to navigate successfully the application process could be more educated and/or familiar with the procedures of public administration.

Still, it is highly unlikely that the compensation mechanism was targeted at the incumbent's constituency. Indeed, the 2019 compensation call by the municipality was restricted to low-income residents, who are if anything closer to Lega than the Democratic Party (De Sio, 2018; Guiso et al., 2017). Moreover, the 2020 call was open to all residents. Therefore, by the time of the survey, in January 2021, any affected car owner could have applied for compensation. Overall then, with the due caveats in mind, our results are consistent with the idea that devising proper compensation schemes, that are sufficiently advertised and widely accessible to citizens, may be a useful way to increase the acceptability and political sustainability of green policies.

Our findings are also consistent with the view that issues related to social justice and fairness are central to populist mobilization (see, e.g., Altomonte, Gennaro, and Passarelli 2019; Betz 2019). In this respect, Lega's opposition to the Area B policy seems to have been appealing to the narrow segment of citizens who felt they were bearing a disproportionate share of the policy's cost. Along with the pecuniary grievance, affected citizens may have also perceived the policy as singling them out as those most responsible for pollution in the city. This sentiment may have reinforced the shift toward Lega, a party that explicitly criticized the inherently unfair design of the policy. As emphasized for instance by Betz (2021), Franzese (2019), Frieden (2019) and Gidron and Hall (2017), when it comes to social justice and populism, issues of recognition, dignity, and status also play a prominent role.

Conclusion

Despite momentous consequences at stake, political leaders are struggling to take the actions needed to deal with the threat of environmental degradation and climate change. One common explanation is that many of the necessary actions entail substantial transition costs, and place burdens on the public that politicians fear would generate significant political blowback. Yet we know strikingly little on citizens' actual electoral response when costs are imposed on them due to environmental policies. This study offers new insight on this question.

Examining the impact of Area B, a vehicle ban in Milan, we find that car owners who incurred sizable pecuniary losses due to the ban were significantly more likely in the next elections to vote for Lega, a populist right party and chief critic of the policy. Also, for affected residents who voted for other parties in earlier elections, the likelihood of switching to Lega was significantly higher.

These findings highlight the electoral incentives politicians may see in opposing certain green policies and criticizing their economic repercussions. In cases where voters face pecuniary losses from such policies, the electoral implications can be significant. The agenda associated with right-wing populist parties—skepticism toward scientific expertise, disdain of multilateral efforts, and its mantle as representing the interests of the common people—situates them well to gain from a potential backlash against green policies.

Notably, our evidence indicates that the electoral shift to Lega did not happen because affected car owners adopted a more hostile stance toward environmental issues in general. In fact, we find some evidence that, if anything, those car owners adopted more environment-friendly views. This pattern is consistent with recent evidence regarding members of the aforementioned "Yellow Vests" movement in France. Using survey evidence, Gilets et al. (2019) find that despite their opposition to the fuel tax, Yellow Vest activists expressed

significant concern with ecological issues and supported various green policies. What they demanded, however, was greater fairness in the way such policies were designed and implemented.[32] Our results also suggest that political opposition to green policies does not necessarily stem from a general disregard of the environmental threat.

Our analysis indicates that the electoral shift induced by Area B reflected a pocketbook response and disaffection with the policy approach perceived to impose the high transition costs on a narrow subset of the public. In line with this pattern, we find that car owners that received financial assistance from the municipality to defray the costs of the car ban were not more likely to switch to Lega than unaffected car owners.

One possible, perhaps contentious implication of these findings, is that if policymakers seek to make meaningful progress on central environmental goals (e.g., 1.5C target), they should be very cognizant of the political trade-offs that green policies entail. Whereas some policies may offer a desirable environmental benefit, if they trigger a political backlash that puts in power parties opposed to the green agenda, advancing these policies may prove detrimental to the broader cause of environmental protection.

In fact, it is hard to overstate the importance of considering the political aspects of the transition to a greener economy. Take for example the workers employed by companies that extract, refine, distribute and produce electricity from fossil fuels. In 2019, that number in the U.S. alone was approximately 2.8 million (Hanson, 2021). This figure is comparable on a per capita basis also in other countries, such as Australia and the UK. If the livelihoods of these workers and their families will come under threat due to a transition to cleaner energy sources, without sufficient policies in place to cushion the blow, the political backlash could be substantial. Indeed, as our findings show, even when dealing with a green policy designed to provide a tangible improvement to residents' well being, those made to incur sizable economic sacrifices responded electorally in a swift and clear manner.

[32] See Douenne and Fabre (2022) for additional analysis of the Yellow Vests movement.

In the coming years, transitioning toward a greener economy will necessitate policies that entail different costs to different groups of people. To build and maintain political support for environmental action, the design of the distributional repercussions of those policies will be crucial, as without broad popular backing the battle for environmental protection will be that much harder.

References

Aklin, Michaël and Matto Mildenberger (2020). "Prisoners of the wrong dilemma: why distributive conflict, not collective action, characterizes the politics of climate change". In: *Global Environmental Politics* 20.4, pp. 4–27.

Altomonte, Carlo, Gloria Gennaro, and Francesco Passarelli (2019). "Collective Emotions and Protest Vote". In: *CESifo Working Paper* No. 7463.

Anelli, Massimo, Italo Colantone, and Piero Stanig (2021). "Individual vulnerability to industrial robot adoption increases support for the radical right". In: *Proceedings of the National Academy of Sciences* 118.47, e2111611118.

Atkins, Ed and Filippo Menga (2022). "Populist ecologies". In: *Area* Forthcoming.

Bechtel, Michael M and Kenneth F Scheve (2013). "Mass support for global climate agreements depends on institutional design". In: *Proceedings of the National Academy of Sciences* 110.34, pp. 13763–13768.

Bechtel, Michael M and Johannes Urpelainen (2015). "All policies are Glocal: International environmental policy making with strategic subnational governments". In: *British Journal of Political Science* 45.3, pp. 559–582.

Beiser-McGrath, Liam F and Thomas Bernauer (2020). "How Do Pocketbook and Distributional Concerns Affect Citizens' Preferences Over Costly Policies? Evidence from experiments on support for carbon taxation". In: *Mimeo*.

Bernauer, Thomas and Robert Gampfer (2015). "How robust is public support for unilateral climate policy?" In: *Environmental Science & Policy* 54, pp. 316–330.

Betz, Hans-Georg (2019). "Populist mobilization across time and space". In: *The Ideational Approach to Populism: Concept, Theory, and Analysis*. Ed. by Kirk A Hawkins, Ryan E Carlin, Levente Littvay, and Cristóbal Rovira Kaltwasser. London: Routledge, pp. 181–201.

— (2021). "The Politics of Recognition vs. Redistribution". In: *Fair Observer*.

Birch, Sarah (2020). "Political polarization and environmental attitudes: a cross-national analysis". In: *Environmental Politics* 29.4, pp. 697–718.

Bonikowski, Bart and Noam Gidron (2016). "Multiple traditions in populism research: Toward a theoretical synthesis". In: *APSA Comparative Politics Newsletter* 26.12, pp. 7–14.

Bulli, Giorgia (2019). "Environmental Politics on the Italian Far Right: Not a party issue?" In: *The Far Right and the Environment*. Routledge, pp. 88–103.

Colantone, Italo and Piero Stanig (2018). “The trade origins of economic nationalism: Import competition and voting behavior in Western Europe”. In: *American Journal of Political Science* 62.4, pp. 936–953.

Colgan, Jeff D, Jessica F Green, and Thomas N Hale (2021). “Asset revaluation and the existential politics of climate change”. In: *International Organization* 75.2, pp. 586–610.

Cragg, Michael I, Yuyu Zhou, Kevin Gurney, and Matthew E Kahn (2013). “Carbon geography: the political economy of congressional support for legislation intended to mitigate greenhouse gas production”. In: *Economic Inquiry* 51.2, pp. 1640–1650.

De Sio, Lorenzo (2018). *Il ritorno del voto di classe, ma al contrario (ovvero: se il PD è il partito delle élite)*. CISE Working Paper.

Douenne, Thomas and Adrien Fabre (2022). “Yellow vests, pessimistic beliefs, and carbon tax aversion”. In: *American Economic Journal: Economic Policy* 14.1, pp. 81–110.

Drews, Stefan and Jeroen CJM Van den Bergh (2016). “What explains public support for climate policies? A review of empirical and experimental studies”. In: *Climate Policy* 16.7, pp. 855–876.

Egan, Patrick J and Megan Mullin (2017). “Climate change: US public opinion”. In: *Annual Review of Political Science* 20, pp. 209–227.

Eijk, Cees Van der, Mark Franklin, and Michael Marsh (1996). “What voters teach us about Europe-wide elections: What Europe-wide elections teach us about voters”. In: *Electoral Studies* 15.2, pp. 149–166.

Franzese, Robert J. (2019). “"The Comparative and International Political Economy of Anti-Globalization Populism"”. In: *Research Encyclopedia of Politics*.

Frieden, Jeffry (2019). “The Politics of the Globalization Backlash: Sources and Implications.” In: *Meeting Globalization’s Challenges*. Ed. by Maurice Obstfeld and Luis Catão. Princeton: Princeton University Press.

Gaikwad, Nikhar, Federica Genovese, and Dustin Tingley (2022). “Creating Climate Coalitions: Mass Preferences for Compensating Vulnerability in the World’s Two Largest Democracies”. In: *American Political Science Review*, Forthcoming.

Gemenis, Kostas, Alexia Katsanidou, and Sofia Vasilopoulou (2012). “The politics of anti-environmentalism: positional issue framing by the European radical right”. In:

Gidron, Noam and Peter A. Hall (2017). “The Politics of Social Status: Economic and Cultural Roots of the Populist Right”. In: *British Journal of Sociology* 68, S57–S84.

Gilets, Collectif d’enquête sur les, Camille Bedock, Zakaria Bendali, Antoine Bernard de Raymond, Anne-Gaëlle Beurier, Pierre Blavier, Loïc Bonin, Amaïa Courty, Magali Della

Sudda, Gauthier Delozière, et al. (2019). "Investigating a protest movement in the heat of the moment". In: *Revue Française de Science Politique* 69.5, pp. 869–892.

Grigolon, Laura, Mathias Reynaert, and Frank Verboven (2018). "Consumer valuation of fuel costs and tax policy: Evidence from the European car market". In: *American Economic Journal: Economic Policy* 10.3, pp. 193–225.

Guber, Deborah Lynn (2013). "A cooling climate for change? Party polarization and the politics of global warming". In: *American Behavioral Scientist* 57.1, pp. 93–115.

Guiso, Luigi, Helios Herrera, Massimo Morelli, Tommaso Sonno, et al. (2017). *Demand and supply of populism*. Centre for Economic Policy Research London, UK.

Hanson, Gordon H (2021). "The China Shock's Lessons for the Green Economy". In: *Foreign Affairs*.

Hazlett, Chad and Matto Mildenberger (2020). "Wildfire exposure increases pro-environment voting within democratic but not republican areas". In: *American Political Science Review* 114.4, pp. 1359–1365.

Hobolt, Sara Binzer and Jill Wittrock (2011). "The second-order election model revisited: An experimental test of vote choices in European Parliament elections". In: *Electoral Studies* 30.1, pp. 29–40.

Hoffmann, Roman, Raya Muttarak, Jonas Peisker, and Piero Stanig (2021). "Climate Change Experiences Raise Environmental Concerns and Promote Green Voting". In: *Nature Climate Change* 12, pp. 148–155.

Hovi, Jon, Detlef F Sprinz, and Arild Underdal (2009). "Implementing long-term climate policy: Time inconsistency, domestic politics, international anarchy". In: *Global Environmental Politics* 9.3, pp. 20–39.

Inglehart, Ronald (1995). "Public support for environmental protection: Objective problems and subjective values in 43 societies". In: *PS: Political Science & Politics* 28.1, pp. 57–72.

Keohane, Robert O and David G Victor (2016). "Cooperation and discord in global climate policy". In: *Nature Climate Change* 6.6, pp. 570–575.

Kono, Daniel Yuichi (2020). "Compensating for the climate: unemployment insurance and climate change votes". In: *Political Studies* 68.1, pp. 167–186.

Kotchen, Matthew J, Zachary M Turk, and Anthony A Leiserowitz (2017). "Public willingness to pay for a US carbon tax and preferences for spending the revenue". In: *Environmental Research Letters* 12.9, p. 094012.

Maestre-Andrés, Sara, Stefan Drews, and Jeroen van den Bergh (2019). "Perceived fairness and public acceptability of carbon pricing: a review of the literature". In: *Climate Policy* 19.9, pp. 1186–1204.

Markkanen, Sanna and Annela Anger-Kraavi (2019). "Social impacts of climate change mitigation policies and their implications for inequality". In: *Climate Policy* 19.7, pp. 827–844.

Marsh, Michael (1998). "Testing the second-order election model after four European elections". In: *British Journal of Political Science* 28.4, pp. 591–607.

Norris, Pippa and Ronald Inglehart (2019). *Cultural backlash: Trump, Brexit, and authoritarian populism*. Cambridge University Press.

Ostrom, Elinor (2010). "Polycentric systems for coping with collective action and global environmental change". In: *Global Environmental Change* 20.4, pp. 550–557.

Reif, Karlheinz and Hermann Schmitt (1980). "Nine Second Order National Election: A Conceptual Framework for the Analysis of European Election Results". In: *European Journal of Political Research* 8.1, pp. 3–44.

Stern, Nicholas (2007). *The economics of climate change: The Stern review*. Cambridge University Press.

Stokes, Leah C (2016). "Electoral backlash against climate policy: A natural experiment on retrospective voting and local resistance to public policy". In: *American Journal of Political Science* 60.4, pp. 958–974.

Tingley, Dustin and Michael Tomz (2014). "Conditional cooperation and climate change". In: *Comparative Political Studies* 47.3, pp. 344–368.

Valbruzzi, Marco, Riccardo Martinelli, Angelo Vito Panaro, and Sara Soliman (2019). *Che programmi avete per le Europee? Un'analisi dei programmi elettorali dei partiti (in Italian)*. Tech. rep. Istituto Cattaneo.

Vona, Francesco (2019). "Job losses and political acceptability of climate policies: why the 'job-killing'argument is so persistent and how to overturn it". In: *Climate Policy* 19.4, pp. 524–532.

Online Appendix

A Details on Principles for Human Subjects Research

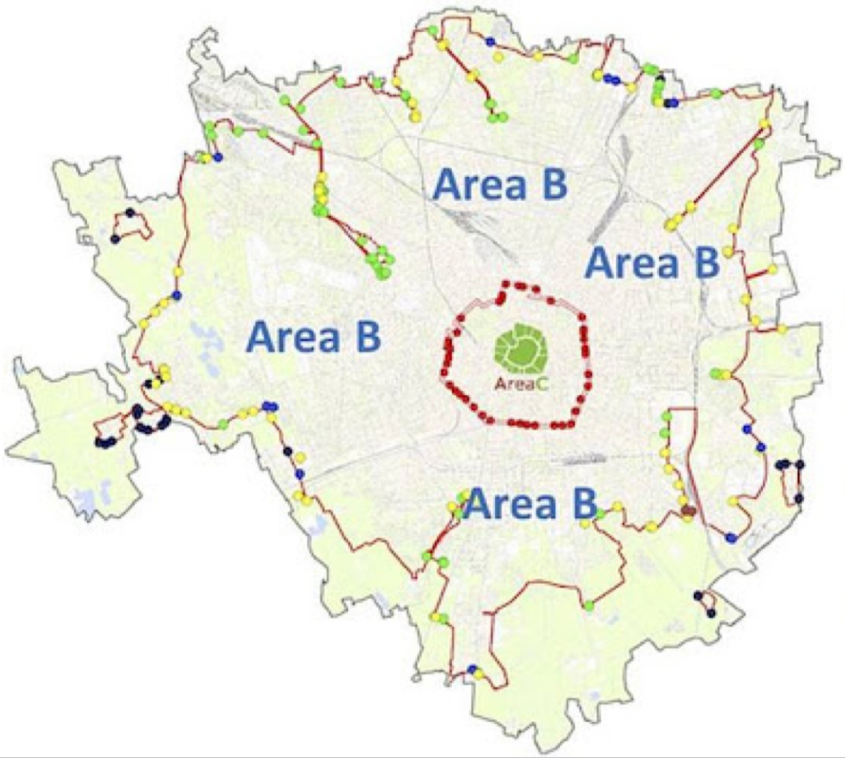
Our survey was administered by YouGov to their panel participants who reside in the city of Milan, within Area B and outside of Area C.

Concerning the Principles for Human Subjects Research, we clarify the following:

- All survey participants provided informed and voluntary consent when included in the YouGov panel, as per the YouGov policy on informed consent and privacy protection. When taking the survey used for this study, respondents were informed that their answers would be used to provide information to YouGov clients for a study regarding mobility within the city of Milan.
- When taking a survey, panel participants receive a number of YouGov points on their YouGov account. Such points can be accumulated over time and redeemed for cash and other rewards. Participants in the survey used for this study received YouGov points as compensation. YouGov reports on its website that participants receive up to 400 points for completing a 10-15 minute survey. 5000 points correspond to a $50 payout. More information can be obtained at this link: https://my.yougov.com/en-my/account/faq/
- The survey does not entail any deception.
- The survey does not ask participants to engage with any material that could impose psychological distress or harm.
- The survey was administered by YouGov, in line with YouGov policy on privacy, which can be accessed here: https://account.yougov.com/us-en/account/privacy-policy
- The survey had no impact on the political process.
- The research protocol received IRB approval before its implementation.
- In terms of relevant laws/regulations awareness, the survey has been taken in compliance with the General Data Protection Regulation (GDPR) of the European Union, that is legally binding in Italy.
- Given all the above information, we do not claim any exception to the Principles for Human Subjects Research.

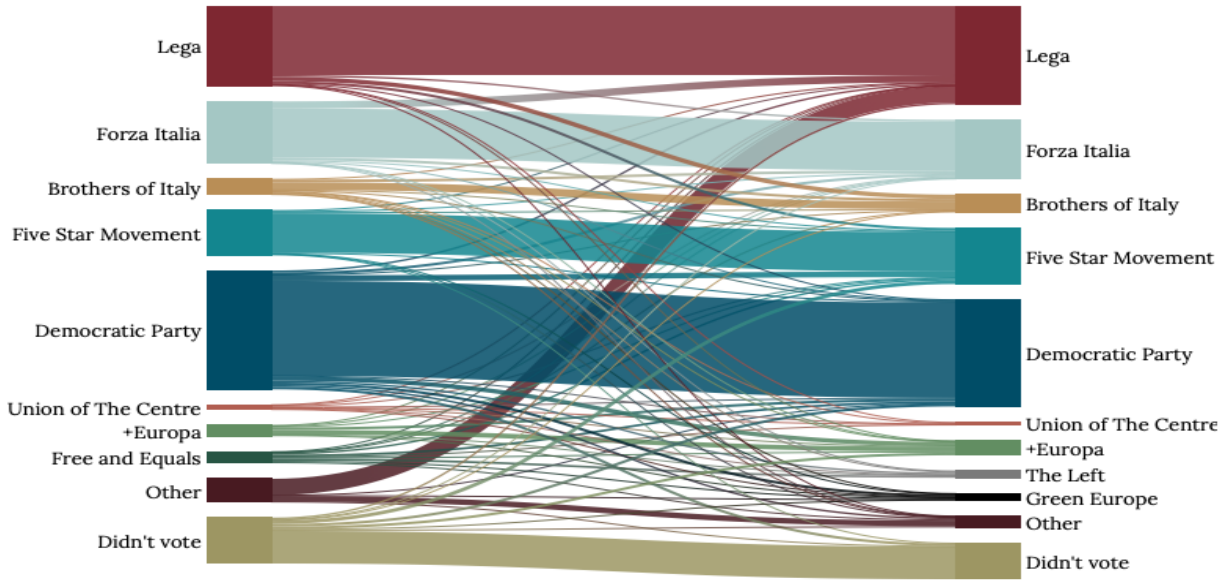
B Additional Figures and Tables

Figure (SI-1) The Area B Policy



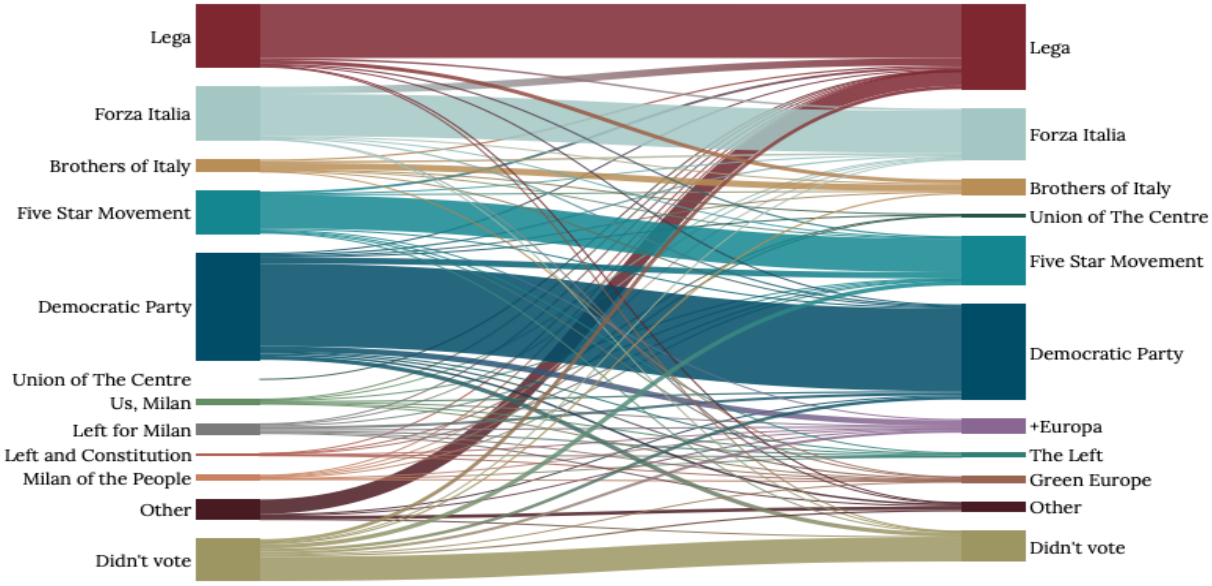
Notes: The map represents the city of Milan and is sourced from the municipality website. The large area with red borders is Area B, our focus of interest. The other outlined area in the very center of the city is Area C, excluded from our analysis.

Figure (SI-2) Electoral Flows from Regional 2018



Notes: The figure reports electoral flows from the regional elections of 2018 (left side) to the EU elections of 2019 (right side).

Figure (SI-3) Electoral Flows from Municipal 2016



Notes: The figure reports electoral flows from the municipal elections of 2016 (left side) to the EU elections of 2019 (right side).

Table (SI-1) Controlling for All Previous Votes

Dep. var:	(1) Vote for Lega	(2) Vote for Dem	(3) Vote for Forza Italia	(4) Vote for Five Star
Diesel X Euro 4	0.100*	0.017	0.018	0.023
	(0.047)	(0.053)	(0.029)	(0.034)
Diesel	0.005	-0.035	-0.041	0.015
	(0.039)	(0.037)	(0.029)	(0.028)
Euro 4	0.032	0.025	-0.013	-0.043
	(0.032)	(0.047)	(0.025)	(0.023)
Age	0.003**	0.003*	0.001	-0.000
	(0.001)	(0.001)	(0.001)	(0.001)
Female	0.174**	-0.007	-0.023	-0.007
	(0.030)	(0.021)	(0.019)	(0.016)
Vote Lega 2018	0.501**			
	(0.095)			
Vote Lega Regional	0.428**			
	(0.109)			
Vote Lega Municipal	-0.023			
	(0.102)			
Vote Dem 2018		0.377**		
		(0.090)		
Vote Dem Regional		0.222*		
		(0.090)		
Vote Dem Municipal		0.273**		
		(0.088)		
Vote Forza Italia 2018			0.611**	
			(0.099)	
Vote Forza Italia Regional			0.034	
			(0.088)	
Vote Forza Italia Municipal			0.266**	
			(0.088)	
Vote Five Star 2018				0.328**
				(0.094)
Vote Five Star Regional				0.329**
				(0.118)
Vote Five Star Municipal				0.272*
				(0.120)
Education F.E.	Yes	Yes	Yes	Yes
Income F.E.	Yes	Yes	Yes	Yes
Observations	515	515	515	515
R^2	0.653	0.794	0.846	0.772

Notes: Columns 1-4 report estimates from regression models that include controls for age and gender, as well as fixed effects for education levels and income brackets. Robust standard errors in parentheses. *p<0.05; **p<0.01.

Table (SI-2) Switching to Lega in EU Elections of 2019

	Dep. var.: Switching to Lega in 2019 from earlier elections								
	Legislative Elections 2018			Regional Elections 2018			Municipal Elections 2016		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Diesel X Euro 4	0.116*	0.151**	0.144**	0.115*	0.151**	0.153**	0.142*	0.186**	0.184**
	(0.047)	(0.053)	(0.052)	(0.046)	(0.056)	(0.054)	(0.057)	(0.067)	(0.064)
Diesel	−0.017	−0.044	−0.047	0.026	−0.010	−0.019	−0.002	−0.033	−0.039
	(0.032)	(0.040)	(0.037)	(0.031)	(0.041)	(0.037)	(0.043)	(0.053)	(0.048)
Euro 4	−0.002	−0.003	−0.009	0.005	0.002	−0.014	−0.031	−0.039	−0.050
	(0.035)	(0.037)	(0.037)	(0.028)	(0.038)	(0.037)	(0.041)	(0.048)	(0.047)
Age		0.002	0.002		0.004**	0.004**		0.003*	0.003*
		(0.001)	(0.001)		(0.001)	(0.001)		(0.001)	(0.001)
Female		0.161**	0.148**		0.216**	0.204**		0.198**	0.187**
		(0.029)	(0.028)		(0.031)	(0.030)		(0.036)	(0.035)
Education F.E.	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Income F.E.	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Observations	483	483	511	450	450	478	452	452	479
R^2	0.030	0.224	0.213	0.049	0.308	0.293	0.031	0.218	0.214

Notes: Columns 2-3, 5-6, and 8-9 report estimates from regression models that include controls for age and gender, as well as fixed effects for education levels and income brackets. Columns 3, 6, and 9 include respondents that did not report their car's fuel and/or emission category. Robust standard errors in parentheses. *p<0.05; **p<0.01.

Table (SI-3) Switching to Lega Before Area B

	Dep. var.: Switching to Lega from municipal elections 2016 to					
	Legislative Elections 2018			Regional Elections 2018		
	(1)	(2)	(3)	(4)	(5)	(6)
Diesel X Euro 4	-0.029	0.017	0.022	-0.002	0.036	0.041
	(0.045)	(0.045)	(0.043)	(0.046)	(0.056)	(0.055)
Diesel	0.036	0.025	0.018	0.010	0.029	0.021
	(0.037)	(0.037)	(0.034)	(0.039)	(0.042)	(0.039)
Euro 4	-0.009	-0.035	-0.037	-0.024	-0.057	-0.056
	(0.031)	(0.034)	(0.033)	(0.034)	(0.038)	(0.037)
Age		0.000	0.000		-0.002*	-0.002
		(0.001)	(0.001)		(0.001)	(0.001)
Female		0.042	0.042		0.020	0.019
		(0.025)	(0.024)		(0.025)	(0.024)
Education F.E.	No	Yes	Yes	No	Yes	Yes
Income F.E.	No	Yes	Yes	No	Yes	Yes
Observations	454	454	480	448	448	474
R^2	0.005	0.066	0.067	0.003	0.073	0.069

Notes: Columns 2-3 and 5-6 report estimates from regression models that include controls for age and gender, as well as fixed effects for education levels and income brackets. Columns 3 and 6 include respondents that did not report their car's fuel and/or emission category. Robust standard errors in parentheses. *p<0.05; **p<0.01.

Table (SI-4) Environment-friendly behavior and attitudes

Dep. var:	(1) Recycled	(2) Showers	(3) Eco Mode	(4) Bottles	(5) Policy	(6) Impact
Diesel X Euro 4	0.011	0.160	-0.242	-0.027	-0.009	0.035
	(0.129)	(0.150)	(0.147)	(0.185)	(0.049)	(0.054)
Diesel	0.089	-0.072	0.142	-0.041	-0.042	-0.087*
	(0.108)	(0.109)	(0.106)	(0.147)	(0.036)	(0.041)
Euro 4	0.121	0.002	0.080	0.202	0.007	-0.002
	(0.094)	(0.113)	(0.108)	(0.142)	(0.035)	(0.038)
Age	-0.008*	0.004	-0.002	-0.031**	-0.001	-0.002
	(0.003)	(0.003)	(0.003)	(0.004)	(0.001)	(0.001)
Female	-0.013	0.005	-0.070	-0.007	-0.021	-0.049
	(0.063)	(0.070)	(0.069)	(0.087)	(0.023)	(0.026)
Education F.E.	Yes	Yes	Yes	Yes	Yes	Yes
Income F.E.	Yes	Yes	Yes	Yes	Yes	Yes
Observations	705	705	705	705	705	705
R^2	0.146	0.097	0.081	0.157	0.040	0.082

Notes: The dependent variables in the first four columns reflect, respectively, respondents' report of how frequently—on a five-point scale ranging from 'never' to 'always'—they carry out each of the following: (1) buy products made using recycled materials and/or packaged without plastic; (2) take short showers to preserve water; (3) use home appliances in Eco mode; and (4) use reusable bottles for water. In column 5, the dependent variable is an indicator equal to 1 if the respondent partially or fully agrees with the statement that government and local institutions should adopt emission-reducing initiatives aimed at achieving climate neutrality in Italy by 2050. In column 6, we consider agreement with the statement that adoption of green policies against pollution and climate change will have a "very positive" impact on citizens. All columns report estimates from regression models that include controls for age and gender, as well as fixed effects for education levels and income brackets. Robust standard errors in parentheses. *p<0.05; **p<0.01.

Table (SI-5) Global Level (ZeroCO2)

Dep. var:	(1) Website	(2) Video	(3) Social	(4) Podcast	(5) Tree
Diesel X Euro 4	-0.040	-0.045	0.141	0.220**	0.373**
	(0.046)	(0.076)	(0.080)	(0.082)	(0.078)
Diesel	0.056	-0.036	0.019	-0.021	-0.065
	(0.036)	(0.056)	(0.059)	(0.060)	(0.056)
Euro 4	0.013	-0.072	0.039	-0.017	-0.070
	(0.031)	(0.056)	(0.059)	(0.061)	(0.058)
Age	-0.001	0.001	-0.012**	-0.007**	-0.006**
	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)
Female	-0.009	0.104**	-0.107**	-0.120**	-0.026
	(0.026)	(0.039)	(0.038)	(0.040)	(0.035)
Education F.E.	Yes	Yes	Yes	Yes	Yes
Income F.E.	Yes	Yes	Yes	Yes	Yes
Observations	705	705	705	705	705
R^2	0.047	0.157	0.184	0.187	0.297

Notes: The dependent variables are indicators equal to one in case the respondent: (1) clicks on ZeroCO2 website; (2) watches a short video about the company; (3) expresses interest in following the company's page on social media; (4) expresses interest in listening to the company's podcast on environmental sustainability; and (5) expresses interest in planting a tree. All columns report estimates from regression models that include controls for age and gender, as well as fixed effects for education levels and income brackets. Robust standard errors in parentheses. *p<0.05; **p<0.01.

Table (SI-6) Local Level (Genitori Antismog)

Dep. var:	(1) Website	(2) Newsletter	(3) Donation
Diesel X Euro 4	0.016	0.281**	0.434**
	(0.027)	(0.079)	(0.067)
Diesel	-0.029	-0.066	-0.027
	(0.023)	(0.056)	(0.049)
Euro 4	-0.034	0.001	-0.055
	(0.020)	(0.061)	(0.048)
Age	-0.001	-0.004*	-0.004**
	(0.000)	(0.002)	(0.001)
Female	-0.011	-0.022	-0.050
	(0.013)	(0.036)	(0.031)
Education F.E.	Yes	Yes	Yes
Income F.E.	Yes	Yes	Yes
Observations	705	705	705
R^2	0.067	0.246	0.453

Notes: The dependent variables are indicators equal to one in case the respondent: (1) clicks on Genitori Antismog website; (2) expresses interest in subscribing to the association's newsletter; and (3) expresses interest in donating money to the association. All columns report estimates from regression models that include controls for age and gender, as well as fixed effects for education levels and income brackets. Robust standard errors in parentheses. *p<0.05; **p<0.01.

Table (SI-7) Responsibility, Taxes and Prices

Dep. var:	(1) Responsibility	(2) Higher Taxes	(3) Higher Prices
Diesel X Euro 4	0.362**	0.112	0.132
	(0.080)	(0.079)	(0.078)
Diesel	-0.158**	0.035	-0.052
	(0.059)	(0.057)	(0.057)
Euro 4	-0.056	0.079	0.042
	(0.059)	(0.058)	(0.059)
Age	0.003	-0.001	-0.000
	(0.002)	(0.002)	(0.002)
Female	-0.013	-0.106**	0.003
	(0.036)	(0.037)	(0.036)
Education F.E.	Yes	Yes	Yes
Income F.E.	Yes	Yes	Yes
Observations	705	705	705
R^2	0.110	0.249	0.166

Notes: The dependent variable in column 1 is an indicator equal to one in case the respondent partially or fully agrees with the statement that preserving the environment is the "responsibility of governments and big firms more than of citizens". In column 2, the dependent variable is an indicator equal to one if the respondent is "fairly" or "very" willing to pay higher taxes in order to finance public initiatives aimed at preserving the environment. In column 3, the dependent variable is an indicator equal to one if the respondent is "fairly" or "very" willing to pay higher prices for environment-friendly goods and services. All columns report estimates from regression models that include controls for age and gender, as well as fixed effects for education levels and income brackets. Robust standard errors in parentheses. *p<0.05; **p<0.01.

Table (SI-8) Control Group Restricted to Diesel Euro5

Dep. var:	*Vote for Lega EU 2019*					*Switching to Lega in 2019 from:*		
						Legislative 2018	Regional 2018	Municipal 2016
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Diesel X Euro 4	0.072	0.158**	0.130**	0.146**	0.143**	0.158**	0.193**	0.182**
	(0.047)	(0.056)	(0.041)	(0.043)	(0.047)	(0.046)	(0.049)	(0.051)
Age		0.003	0.003	0.005**	0.005*	0.005*	0.008**	0.006*
		(0.003)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Female		0.233**	0.253**	0.273**	0.288**	0.268**	0.338**	0.318**
		(0.058)	(0.042)	(0.047)	(0.052)	(0.047)	(0.049)	(0.053)
Vote Lega 2018			0.795**					
			(0.048)					
Vote Lega Regional				0.757**				
				(0.066)				
Vote Lega Municipal					0.760**			
					(0.068)			
Education F.E.	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Income F.E.	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	376	376	370	357	349	316	309	313
R^2	0.005	0.196	0.578	0.525	0.475	0.318	0.407	0.328

Notes: Columns 2-9 report estimates from regression models that include controls for age and gender, as well as fixed effects for education levels and income brackets. Robust standard errors in parentheses. *p<0.05; **p<0.01.

Table (SI-9) Controlling for Car Use: KMs per Year

Dep. var.:	*Vote for Lega EU 2019*		*Switching to Lega in 2019 from:*	
			Legislative 2018	
	(1)	(2)	(3)	(4)
Diesel X Euro 4	0.157*	0.193*	0.107*	0.148**
	(0.080)	(0.079)	(0.054)	(0.054)
Diesel	−0.096	−0.099	−0.050	−0.045
	(0.056)	(0.057)	(0.038)	(0.041)
Euro 4	−0.066	−0.054	−0.021	−0.000
	(0.061)	(0.060)	(0.040)	(0.038)
KMs per year: less than 1k	-0.020		-0.216*	
	(0.141)		(0.098)	
KMs per year: 1k to 5k	-0.028		-0.157	
	(0.109)		(0.099)	
KMs per year: 5k to 10k	-0.092		-0.135	
	(0.103)		(0.095)	
KMs per year: 10k to 20k	-0.135		-0.154	
	(0.103)		(0.097)	
KMs per year: 20k to 30k	0.043		0.068	
	(0.109)		(0.107)	
KMs per year: more than 30k	-0.254*		-0.294**	
	(0.123)		(0.113)	
KMs per year: at least 10k		-0.052		0.010
		(0.041)		(0.030)
Education F.E.	Yes	Yes	Yes	Yes
Income F.E.	Yes	Yes	Yes	Yes
Age and Gender	Yes	Yes	Yes	Yes
Observations	602	602	483	483
R^2	0.163	0.133	0.326	0.224

Notes: All columns report estimates from regression models that include controls for age and gender, as well as fixed effects for education levels and income brackets. The control variables "KMs per year" are indicators for how many kilometers the respondent drives with their personal car, on average, per year. In columns 1 and 3, the excluded category is "don't know". Robust standard errors in parentheses. *p<0.05; **p<0.01.

Table (SI-10) Controlling for Car Use: Frequency

Dep. var.:	*Vote for Lega EU 2019*				*Switching to Lega in 2019 from:*			
						Legislative 2018		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Diesel X Euro 4	0.228**	0.190*	0.204*	0.212**	0.201**	0.160**	0.186**	0.176**
	(0.079)	(0.078)	(0.082)	(0.081)	(0.054)	(0.053)	([0.058)	([0.059)
Diesel	−0.091	−0.102	−0.090	−0.107	−0.023	−0.040	−0.034	−0.045
	(0.055)	(0.057)	(0.055)	(0.057)	(0.038)	(0.039)	(0.040)	(0.040)
Euro 4	−0.085	−0.050	−0.065	−0.062	−0.047	−0.004	−0.038	−0.016
	(0.061)	(0.059)	(0.061)	(0.060)	(0.038)	(0.036)	(0.038)	(0.040)
Car use: daily	0.171*				−0.081			
	(0.077)				(0.078)			
Car use: weekly	0.394**				0.129			
	(0.075)				(0.075)			
Car use: monthly	0.352**				0.128			
	(0.091)				(0.086)			
Car use: yearly	0.438				0.019			
	(0.227)				(0.090)			
Car use: at least weakly		−0.062				−0.088		
		(0.063)				(0.047)		
Car use for work: daily			−0.120*				−0.100**	
			(0.058)				(0.036)	
Car use for work: weekly			0.093				0.145**	
			(0.062)				(0.041)	
Car use for work: monthly			0.093				0.108	
			(0.080)				(0.079)	
Car use for work: yearly			0.030				0.059	
			(0.115)				(0.095)	
Car use for work: at least weakly				−0.075				−0.051
				(0.046)				(0.034)
Education F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Income F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Age and Gender	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	602	602	602	602	483	483	483	483
R^2	0.183	0.132	0.170	0.135	0.316	0.230	0.323	0.227

Notes: All columns report estimates from regression models that include controls for age and gender, as well as fixed effects for education levels and income brackets. The control variables "car use" are indicators for how frequently the respondent uses their personal car, in general and specifically for work. In columns 1 and 5, the excluded category is "never". In columns 3 and 7, the excluded category is "don't work". Robust standard errors in parentheses. *p<0.05; **p<0.01.

Table (SI-11) Switching to Lega in EU Elections of 2019 - Robustness

	Dep. var.: Switching to Lega in 2019 from earlier elections								
	Legislative Elections 2018			Regional Elections 2018			Municipal Elections 2016		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Diesel X Euro 4	0.125**	0.166**	0.157**	0.118*	0.159**	0.132*	0.143*	0.184**	0.164**
	(0.048)	(0.054)	(0.053)	(0.046)	(0.055)	(0.058)	(0.056)	(0.063)	(0.063)
Diesel	−0.027	−0.055	−0.057	0.024	−0.014	−0.000	−0.007	−0.036	−0.029
	(0.033)	(0.041)	(0.038)	(0.033)	(0.041)	(0.042)	(0.044)	(0.049)	(0.048)
Euro 4	−0.012	−0.015	−0.022	−0.007	−0.014	−0.022	−0.054	−0.065	−0.069
	(0.036)	(0.039)	(0.038)	(0.029)	(0.037)	(0.037)	(0.040)	(0.045)	(0.044)
Age		0.002	0.002		0.003**	0.003**		0.001	0.001
		(0.001)	(0.001)		(0.001)	(0.001)		(0.001)	(0.001)
Female		0.156**	0.143**		0.192**	0.172**		0.163**	0.145**
		(0.030)	(0.028)		(0.030)	(0.030)		(0.034)	(0.033)
Education F.E.	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Income F.E.	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Observations	486	486	514	475	475	504	492	492	522
R^2	0.028	0.214	0.204	0.044	0.270	0.239	0.024	0.190	0.174

Notes: Columns 2-3, 5-6, and 8-9 report estimates from regression models that include controls for age and gender, as well as fixed effects for education levels and income brackets. Columns 3, 6, and 9 include respondents that did not report their car's fuel and/or emission category. Compared to the baseline switching regressions, this table also includes respondents who voted in 2019 but did not vote in earlier elections, potentially switching from "non vote" to "vote for Lega". Robust standard errors in parentheses. *p<0.05; **p<0.01.

Table (SI-12) Other Political Parties

Party Name	**Orientation**	**Vote Share**
Panel A: Legislative Elections 2018		
Italia Europa Insieme	Centre-left	0.45%
Civica Popolare Lorenzin	Centre-left	0.81%
Potere al Popolo	Extreme-left	1.33%
CasaPound Italia	Extreme-right	0.71%
Il Popolo della Famiglia	Centre-right	0.30%
10 Volte Meglio	Centre	0.33%
Italia agli Italiani	Extreme-right	0.39%
Per una Sinistra Rivoluzionaria	Extreme-left	0.24%
Partito Repubblicano Italiano - ALA	Centre	0.10%
Panel B: Regional Elections 2018		
Italia Europa Insieme	Centre-left	1.34%
Civica Popolare Lorenzin	Centre-left	0.30%
CasaPound Italia	Extreme-right	0.77%
Grande Nord	Centre-right	0.14%
Partito Pensionati	Centre-right	0.27%
Panel C: Municipal Elections 2016		
Radicali, Federalisti, Laici, Ecologisti	Centre-left	1.88%
Italia dei Valori	Centre-left	0.69%
Io Corro per Milano	Civic	3.02%
Partito Pensionati	Centre-right	0.43%
Noi x Milano	Civic	1.12%
Partito Comunista dei Lavoratori	Extreme-left	0.41%
Alternativa Municipale	Civic	0.28%
Fuxia People	Civic	0.21%

Notes: Vote shares are from official government sources and refer to the city of Milan.

Table (SI-13) Comparison of the Sample with the Census

	Full Sample	**Census**
Age		
18-24	2.7	7.7
25-34	10.8	13.2
35-44	34.7	16.2
45-54	31.3	19.8
55+	20.5	43.1
Gender		
Male	52.2	48.2
Female	47.8	51.8
Education		
High school diploma	33.7	55.2
Bachelor	27.2	8.3
MA or higher	38.5	36.5
Unknown	0.6	-
Income		
Less than 15,000€ per year	6.9	35.5
From 15,000€ to 29,999€ per year	20.3	23.3
From 30,000€ to 44,999€ per year	21.7	27.6
From 45,000€ to 69,999€ per year	14.9	5.4
Above 70,000€ per year	26.8	8.2
No Answer / DK	9.3	-

Notes: Column 1 reports descriptive statistics on the full sample, as in column 1 of Table 1. Column 2 reports official figures about the city of Milan, obtained from the Italian Statistical Institute (ISTAT) website. Data on age, gender, and education are from the 2020 Census. Data on income are provided by the Ministry of Economics and Finance, for the year 2020. The income brackets in the official data are slightly different than those employed in the survey. In particular, they are as follows: "Less than 15,000€"; "From 15,000€ to 25.999€"; "From 26,000€ to 54.999€"; "From 55,000€ to 74,999€"; and "above 75,000€".

C Subjects Potentially Misreporting the Effect of the Policy

As mentioned in footnote 18 in the main text, one might be worried that our results could be driven by some subjects who may have misreported–either by mistake or deliberately–the effect of the traffic ban on their car. In particular, one could be concerned that Lega voters might have been more inclined to do so. Yet, for several reasons we believe this is highly unlikely.

First, it is important to recall that there were six categories of cars banned by Area B: Petrol-Euro0, and all the Diesel-Euro0-to-4. In our analysis, we only focus on Diesel-Euro4 car owners. That is, subjects are assigned to the treatment group only if: (1) they report that they were affected by the ban; and (2) they indicate that, at the time when Area B was announced, they owned a Diesel-Euro4 car. All subjects who owned other types of cars affected by the traffic ban are not part of our sample. It is possibile, at least in theory, that Lega voters might have been inclined to report incorrectly that they owned a car affected by the ban. However, this would have not been enough for these subjects to be assigned to the treatment group. For this to happen, the subjects would have had to correctly guess and declare the specific car category (Diesel-Euro4) that would have granted them assignment to treatment in our study. This is something they had no reason to know or even suspect. With six categories of banned cars, they had only a one-out-of-six chance of being included in the treatment group. It is hard to think that our treatment group has enough of these "lucky guessers" to drive our results.

Moreover, we also present evidence that the introduction of Area B has a significant effect on switches in voting behavior. That is, focusing on subjects who had not voted for Lega in previous elections, we find that treated subjects are more likely than controls to switch to Lega in the 2019 European elections. It seems hard to envision a scenario where our result on switches to Lega is driven by subjects who: (1) misreport whether their car was affected by the ban; (2) among six affected car types indicate the only one that would grant them assignment to treatment; and (3) had not voted for Lega in the previous elections, but did so in 2019.

In general, one could be worried about the fact that asking subjects some questions about their voting behavior or ideological leanings might have influenced their answers on questions about whether they owned a car affected by the ban, especially for Lega voters. Yet we can exclude this possibility as the questions on cars were placed early in the survey, and preceded

the questions on voting behavior and political views. Furthermore, in the survey title or the introduction there was no hint that questions about voting behavior and political preferences were to be asked. Taken together, we believe the points above should reassure the reader about the possibility that any misreporting of the effect of the policy by some subjects could have a meaningful impact on the results we report.

FONDAZIONE ENI ENRICO MATTEI WORKING PAPER SERIES

"NOTE DI LAVORO"

Our Working Papers are available on the Internet at the following address:
https://www.feem.it/pubblicazioni/feem-working-papers/

"NOTE DI LAVORO" PUBLISHED IN 2022

1. 2022, Daniele Crotti, Elena Maggi, Evangelia Pantelaki, Urban cycling tourism. How can bikes and public transport ride together for sustainability?
2. 2022, Antonio Acconcia, Sergio Beraldo, Carlo Capuano, Marco Stimolo, Public subsidies and cooperation in research and development. Evidence from the lab
3. 2022, Jia Meng, ZhongXiang Zhang, Corporate Environmental Information Disclosure and Investor Response: Empirical Evidence from China's Capital Market
4. 2022, Mariagrazia D'Angeli, Giovanni Marin, Elena Paglialunga, Climate Change, Armed Conflicts and Resilience
5. 2022, Davide Antonioli, Claudia Ghisetti, Massimiliano Mazzanti, Francesco Nicolli, The economic returns of circular economy practices
6. 2022, Massimiliano Mazzanti, Francesco Nicolli, Stefano Pareglio, Marco Quatrosi, Adoption of Eco and Circular Economy-Innovation in Italy: exploring different firm profiles
7. 2022, Davide Antonioli, Claudia Ghisetti, Stefano Pareglio, Marco Quatrosi, Innovation, Circular economy practices and organisational settings: empirical evidence from Italy
8. 2022, Ilenia Romani, Marzio Galeotti, Alessandro Lanza, Besides promising economic growth, will the Italian NRRP also produce fewer emissions?
9. 2022, Emanuele Ciola, Enrico Turco, Andrea Gurgone, Davide Bazzana, Sergio Vergalli, Francesco Menoncin, Charging the macroeconomy with an energy sector: an agent-based model
10. 2022, Emanuele Millemaci, Alessandra Patti, Nemo propheta in Patria: Empirical Evidence from Italy
11. 2022, Daniele Valenti, Andrea Bastianin, Matteo Manera, A weekly structural VAR model of the US crude oil market
12. 2022, Banchongsan Charoensook, On Efficiency and Stability in Two-way Flow Network with Small Decay: A note
13. 2022, Shu Guo, ZhongXiang Zhang, Green credit policy and total factor productivity: Evidence from Chinese listed companies
14. 2022, Filippo Bontadini, Francesco Vona, Anatomy of Green Specialisation: Evidence from EU Production Data, 1995-2015
15. 2022, Mattia Guerini, Fabio Vanni, Mauro Napoletano, *E pluribus, quaedam*. Gross domestic product out of a dashboard of indicators
16. 2022, Cinzia Bonaldo, Fulvio Fontini, Michele Moretto, The Energy Transition and the Value of Capacity Remuneration Mechanisms
17. 2022, Giovanni Marin, Francesco Vona, Finance and the Reallocation of Scientific, Engineering and Mathematical Talent
18. 2022, Anna Laura Baraldi, Erasmo Papagni, Marco Stimolo, Neutralizing the Tentacles of Organized Crime. Assessment of Anti-Crime Measure in Fighting Mafia Violence
19. 2022, Alexander Golub, Jon Anda, Anil Markandya, Michael Brody, Aldin Celovic, Angele Kedaitiene, Climate alpha and the global capital market
20. 2022, Jlenia Di Noia, Agent-Based Models for Climate Change Adaptation in Coastal Zones. A Review
21. 2022, Alberto Gabino Martínez-Hernández, System Dynamics modelling and Climate Change Adaptation in Coastal Areas: A literature review
22. 2022, Pietro De Ponti, Matteo Romagnoli, Financial Implications of the EU Emission Trading System: an analysis of wavelet coherence and volatility spillovers
23. 2022, Laura Cavalli, Mia Alibegovic, Davide Vaccari, Andrea Spasiano, Fernando Nardi, Sustainability assessment of the public interventions supported by the ReSTART project in the CITI4GREEN framework
24. 2022, Filippo Maria D'Arcangelo, Giulia Pavan, Sara Calligaris, The Impact of the European Carbon Market on Firm Productivity: Evidence from Italian Manufacturing Firms.
25. 2022, Enrico Turco, Davide Bazzana, Massimiliano Rizzati, Emanuele Ciola, Sergio Vergalli, Energy prices shocks and macroeconomic stabilization policies in the MATRIX model
26. 2022, Mario Gilli, Filippo Giorgini, Citizens Protests: causes and consequences. A Research on Regime Change and Revolutionary Entrepreneurs

"NOTE DI LAVORO" PUBLISHED IN 2022

27. 2022, Filippo Maria D'Arcangelo, Marzio Galeotti, Environmental Policy and Investment Location: The Risk of Carbon Leakage in the EU ETS

28. 2022, Italo Colantone, Livio Di Lonardo, Yotam Margalit, Marco Percoco, The Political Consequences of Green Policies: Evidence from Italy

Fondazione Eni Enrico Mattei
Corso Magenta 63, Milano – Italia

Tel. +39 02 403 36934

E-mail: letter@feem.it
www.feem.it

Fondazione Eni Enrico Mattei