ROCKWOOL Foundation Berlin
Institute for the Economy and the Future of Work (RFBerlin)

DISCUSSION PAPER SERIES 096/26

Growing the Civic Mind: Civic Education, Civic Behavior, and Political Institutions

Enrico Rubolino

www.rfberlin.com MARCH 2026

Growing the Civic Mind: Civic Education, Civic Behavior, and Political Institutions

Authors

Enrico Rubolino

Reference

JEL Codes: I21, H26, D72, Z13

Keywords: civic capital; civic education; tax morale; political participation

Recommended Citation: Enrico Rubolino (2026): Growing the Civic Mind: Civic Education, Civic Behavior, and Political Institutions. RFBerlin Discussion Paper No. 096/26

Imprint

RFBerlin
ROCKWOOL Foundation Berlin –
Institute for the Economy
and the Future of Work

Gormannstrasse 22, 10119 Berlin
Tel: +49 (0) 151 143 444 67
E-mail: info@rfberlin.com
Web: www.rfberlin.com

Growing the Civic Mind:
Civic Education, Civic Behavior, and Political Institutions

Enrico Rubolino*
CREST-ENSAE-Institut Polytechnique de Paris & University of Lausanne

March 25, 2026

Abstract

Declining civic engagement increasingly strains welfare state institutions. This paper asks whether civic values can be shaped through early educational investments. I study Tax and School, a large-scale program implemented in Italian primary and secondary schools to promote fiscal and civic responsibility. Exploiting staggered cross-municipality adoption, I find that exposure increases students' intrinsic motivation for rule compliance and reduces antisocial behaviors, particularly in socio-economically disadvantaged contexts. These student-level responses gradually aggregate into community-level outcomes: exposed municipalities later exhibit higher voter turnout and stronger support for redistributive policies. Survey evidence points to belief updating about the value of public goods and the role of government in mitigating inequality as a central mechanism. Counterfactual simulations imply that scaling the program could attenuate the secular decline in voter turnout.

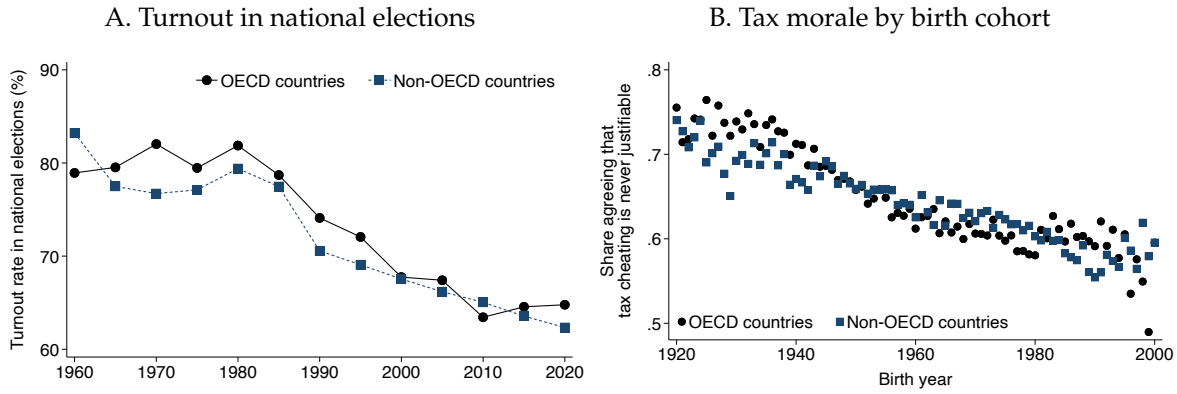
Keywords: civic capital; civic education; tax morale; political participation.
JEL Classification: I21, H26, D72, Z13

*I thank Emilia Del Bono, Fanny Landaud, Mariapia Mendola, Sauro Mocetti, Thomas Piketty, and seminar participants at the University of Essex, EU Tax Observatory (Paris School of Economics), and University of Milano-Bicocca for helpful comments. Teo Novello provided excellent research assistance. I thank Alessandra Gambadoro from the Italian Internal Revenue Agency for sharing information on the program and class material, Lucio Di Stefano and Fausto Mastroddi from the Direzione Regionale for providing examples of program implementation in specific regions, and Giancarlo Mastrone from INVALSI. I gratefully acknowledge financial support from the Swiss National Science Foundation through the "Ambizione" research grant (grant number 223523).

1 Introduction

The weakening of civic engagement places growing pressure on the social and institutional pillars of the welfare state. Figure 1 illustrates erosion in some core dimensions of civic life. Electoral participation has fallen steadily over the past decades in both OECD and non-OECD countries, converging toward historically low levels.[1] A parallel decline is visible in tax morale: the share of individuals who view tax evasion as "never justifiable" has dropped sharply across birth cohorts, with younger generations displaying levels roughly 10 percentage points lower than those born before the mid-20th century. These trends raise a pressing concern: if the decline persists, democracies may face fragile social contracts in which citizens are less willing to comply with norms, sustain cooperation, and support redistribution (Putnam 1993; Guiso et al. 2011; Luttmer and Singhal 2014; Saez 2021).

Figure 1: Global Trends in Voter Turnout and Tax Morale



Notes: Panel A plots the average voter turnout rate in national elections for OECD and non-OECD countries between 1960 and 2022. The data come from the Varieties of Democracy Project. The turnout rate is defined as the percentage of registered voters who cast a ballot in a national election, according to official electoral results. Panel B shows the share of survey respondents who report that cheating on taxes is "never justifiable", based on data from the World Values Survey. The horizontal axis indicates the respondent's year of birth.

Civic education is a popular policy lever to nurture civic values.[2] Yet, credible empirical evidence on its effectiveness remains limited (Campbell 2019). Two challenges loom large. First, identifying causal effects requires plausibly exogenous variation in exposure to civic education, a condition rarely satisfied by programs that are voluntarily adopted or targeted to specific populations.[3] Second, evaluating civic education requires data that are sufficiently rich to track not only short-run behavioral responses, but also longer-run community-level expressions of civic capital, which emerge only as treated cohorts enter adulthood and engage in civic and political life.

This paper sheds new light on the role of civic education by studying the "Tax and School"

[1] In France, voter turnout in legislative elections remained around 70–80% from 1848 onward, but has fallen below 50% since 2017, reaching its lowest level in over 150 years (Cagé and Piketty 2025). In the UK, participation was above 70% between 1885 and 1997, but has remained below that threshold since the early 2000s. In the US, despite a recent uptick, turnout in presidential elections is lower today than in the XIX century (Cagé 2024).

[2] Throughout the paper, I use the terms civic capital, civic norms, and civic values interchangeably, in the sense of "those persistent and shared beliefs and values that help a group overcome the free-rider problem in the pursuit of socially valuable activities" (Guiso et al. 2011). Although inherently broad and debated, this definition provides a workable framework for the present analysis.

[3] A key exception is Briole et al. (2025), who study a randomized civic education intervention and provide causal evidence on prosocial behaviors. I discuss below how my findings relate to and extend their results.

(*Fisco e Scuola*) program, a large-scale initiative promoted by the Italian Revenue Agency and the Ministry of Education. Launched in 2004, the program aims to instill a culture of fiscal and civic responsibility among primary and secondary school students. It combines classroom visits by tax officials, tailored pedagogical materials, and interactive activities to promote a civic narrative in which rule compliance is socially beneficial and taxation is linked to principles of solidarity and fairness. Tax officials deliver age-appropriate lessons on fiscal concepts, while teachers develop civic-oriented projects. Exploiting the program's staggered rollout across municipalities, I implement an event-study design to estimate its effects on student- and community-level outcomes.

The program aims to strengthen intrinsic motivation to comply with rules, a core component of tax morale (Luttmer and Singhal 2014). Because intrinsic motivation is latent, its empirical assessment requires behavioral measures that capture rule adherence in settings where extrinsic incentives are negligible. Following Fisman and Miguel (2007), Paccagnella and Sestito (2014), Guiso et al. (2016), and Ajzenman (2021), I use cheating in low-stakes standardized exams as a proxy.[4] This margin is particularly salient in Italy, where cheating rates exhibit a pronounced North–South gradient, reflecting long-standing territorial differences in civic norms and social capital (Putnam 1993). Based on administrative data from INVALSI standardized tests covering 3.7 million students, the event-study estimates show a sharp and persistent decline in the class-level cheating index. The average treatment effect corresponds to a reduction of 0.09 standard deviations, implying that the program closes about 16% of the baseline North-South gap in cheating.

The intervention engages students in collective projects that require shared responsibility and cooperation. Developmental psychology emphasizes such experiences as a key mechanism for reducing antisocial behavior, particularly in childhood and adolescence (see Durlak et al. (2011) and Alan (2025) for reviews). Using survey data, I find that program exposure leads to a statistically significant reduction in negative peer interactions at school, such as episodes of social exclusion, physical aggression, and theft. In contrast, I find precisely estimated null effects on test scores and on attitudes unrelated to civic norms, suggesting that the estimated effects on cheating and antisocial behavior are unlikely to reflect broader changes in school quality or academic inputs.

Teacher engagement emerges as a key moderator of such effects, consistent with evidence that teachers can curb antisocial behavior (Alan et al. 2025) and shape non-cognitive skills (Jackson 2018; Petek and Pope 2023), including the formation of social capital (Algan et al. 2013).[5] Effects are similarly stronger in schools with high parental involvement, suggesting that civic norms are more readily internalized when reinforced at home (Agostinelli et al. 2025). Finally, impacts are largest in resource-poor and socio-economically disadvantaged schools, where opportunities for building civic capital are often scarce (Kosse et al. 2020).

[4] Following Guiso et al. (2011), a valid proxy for civic capital must reflect i) a stable mapping between the latent trait (intrinsic motivation for rule compliance) and observed behavior, and ii) be unaffected by material incentives or monitoring. Cheating in INVALSI exams satisfies these conditions: it has no consequences for grades, tracking, or school funding, and thus cannot be fully rationalized by strategic incentives. School fixed effects absorb persistent differences in supervision, enforcement, and local norms regarding cheating.

[5] Cheating is unlikely to reflect a direct response by teachers in this setting. Unlike Angrist et al. (2017), the effect is concentrated in larger classes, where teacher monitoring is weaker and peer copying easier. I also find no effect on untreated cohorts within the same school, despite being taught by the same teachers.

Do these student-level effects scale up to influence the political institutions that appear increasingly strained by eroded civic engagement? Civic capital appears to influence views on the role and size of government, and can shape preferences for redistribution (Putnam 1993; Alesina et al. 2001; Alesina and Giuliano 2011; Kleven 2014; Algan et al. 2016). For instance, Stantcheva (2021) provides experimental evidence that support for more progressive income and estate taxes responds strongly to instructional videos explaining the rationale and social benefits of redistribution. Survey evidence indicates that treated cohorts become more attentive to the quality of public goods and more likely to view inequality reduction as a core government responsibility. These revised beliefs can make progressive taxation a more politically attractive instrument to finance public goods and redistribution, since the program reduces informational frictions, shapes normative beliefs about tax progressivity, and promotes activities that make redistributive preferences salient, generating social pressure on local policymakers.[6]

A natural revealed preference test is to examine whether municipalities adjust the tax instruments they directly control. Italian municipalities provide a suitable setting, as they retain discretion over property tax rates across real estate categories and set a surtax on the national income tax, which varies across brackets. The event-study estimates consistently show a gradual increase in local tax progressivity in exposed municipalities. The average increase in the property tax rate amounts to roughly one-tenth of the tax hike observed after a major local tax enforcement shock in Italy (Rubolino 2023), suggesting that civic education can influence tax policy in the same direction as a tax enforcement reform, but its impact is considerably more modest.

One of the central objectives of civic education is to strengthen citizens' willingness to participate in collective decision-making. Voter turnout provides a natural downstream test of whether early changes in rule compliance and prosocial behavior translate into civic participation. Relating program exposure with municipality-level variation in the turnout for national elections, the event-study estimates show a gradual increase in turnout, which begins around the time the most exposed cohorts become eligible to vote. This result appears robust to accounting for internal migration after treatment exposure. The implied effect is comparable in magnitude to the turnout gains associated in the literature with roughly 1.4 additional years of schooling (Kaplan et al. 2025).

Is such a predicted increase in political participation sufficient to counteract the secular decline in voter turnout shown in Figure 1? To study this question, I calibrate an overlapping generations model of civic capital with the reduced-form turnout effect. Counterfactual simulations imply that program exposure can put a brake on the long-run decline in turnout, with the largest gains occurring in municipalities that start from historically lower levels of political participation. However, the persistence of these gains hinges on the strength of a "civicness drain" (Michaeli et al. 2023): if more civic cohorts are disproportionately likely to migrate away from low-civic areas, the local stock of civic capital can erode, exacerbating inequality in political participation across communities.

[6]One example is the "*Dear Mayor, I'd like to tell you...*" competition, where student projects proposing locally financed public investments to their mayor are formally exhibited and awarded in front of local policy makers, parents, teachers, and other community members (see Appendix A2).

This paper contributes to the literature evaluating the effectiveness of civic education. Although civic education has become a standard component of modern school curricula, evidence on whether and how it shapes behavior remains mixed (Campbell 2019). To the best of my knowledge, this paper is one of the few to provide evidence on the causal effects of civic education on student behavior and community-level outcomes.

The closest contribution is Briole et al. (2025), who provide experimental evidence that empowering students through concrete civic projects can cultivate the skills and norms necessary for civic life. This paper complements and extends their findings along several dimensions. First, I document effects on a distinct set of downstream civic behaviors, including aggregate outcomes. Second, whereas Briole et al. (2025) focus on middle school students, my analysis also covers primary school cohorts, a population that has received little attention, despite growing evidence that interventions are more successful at younger ages (Cunha et al. 2010). Finally, I collect large-scale observational data from independent (and not directly involved) institutions. While this approach entails less experimental control than randomized designs, it evaluates civic education as it is implemented in practice, strengthening the external validity and policy relevance of the findings.

The large scale of the intervention and the richness of the data also make it possible to examine *where* civic education is most effective. The program appears to operate as a compensatory intervention, with effects concentrated in socio-economically disadvantaged schools. This finding aligns with an insight present in the influential article of Langton and Jennings (1968), whose conclusions have often been mischaracterized as evidence that civic education is broadly ineffective (Campbell 2019). While they found no average effect of civics courses, they documented meaningful gains among African American students, for whom civic education compensated for deficits in civic socialization at home and in the community.

I also contribute to the literature on the determinants of civic capital. Building on Putnam (1993), who linked the weak institutional performance of southern Italy to the legacy of the autocratic Norman regime, several studies have shown that contemporary norms are shaped by historical forces (Banfield 1958; Alesina and Giuliano 2015; Guiso et al. 2016). This paper suggests that schools are also a central locus of cultural transmission, in line with the long-held hypothesis that children can best develop their civic sense by learning to cooperate in practice (Dewey 1915).

Schools shape civic norms by providing a shared institutional setting in which beliefs are shaped collectively (Aghion et al. 2010; Guiso et al. 2011) and teachers can stimulate practices that foster the formation of social capital (Algan et al. 2013). Consistent with this view, prior work has shown that schooling increases civic engagement (Dee 2004; Milligan et al. 2004; Sondheimer and Green 2010; Cohodes and Feigenbaum 2025; Kaplan et al. 2025), as well as a range of non-pecuniary outcomes (Oreopoulos and Salvanes, 2011). This paper contributes to this literature by documenting that early behavioral changes aggregate into community-level effects, linking micro-level norm formation to macro-level institutional outcomes.

The remainder of the paper is organized as follows. Section 2 describes the program. Section 3 presents the data and outlines the empirical strategy. Section 4 examines the effects on student behavior, while Section 5 investigates municipality-level effects. Section 6 provides counterfactual simulations on the impact of scaling the program. Section 7 concludes.

2 The Tax and School Program

Program contents. "Tax and School" (*Fisco e Scuola*) is a civic education initiative jointly promoted by the Italian Revenue Agency and the Ministry of Education (see the program website here). Launched in 2004, the program is designed to foster a culture of fiscal and civic responsibility through a set of interactive activities delivered throughout the school year.[7] Instruction is provided jointly by teachers and trained tax officials, who visit classrooms to deliver age-tailored lessons. The program targets students in both primary (starting from third grade) and secondary schools. For younger students, the program introduces them to basic notions of fairness, legality, and the link between everyday behaviors and collective well-being; for older students, it focuses more on illustrating the functioning of the tax system, how public goods are financed, and the importance of civic participation.

The program promotes the involvement of teachers, parents, and local policymakers, following the guidelines proposed by the two organizing institutions.[8] Teachers develop civic education projects, such as debates on the value of public goods, simulations of collective decision-making, and preparation of letters or essays addressed to local authorities. Parents are involved through school-organized meetings and public presentations of student work related to the program. Each year, the Revenue Agency organizes locally a public event, which combines exhibitions and an awards ceremony attended by parents and other members of the community (see Appendix A2 for an example from the initiative "*Dear Mayor, I'd like to tell you...*"). Such activity leads students to articulate local public needs and propose policy responses to mayors. Schools also participate in guided visits to local tax offices, where students observe day-to-day operations.

Didactic material and narratives. The program develops age-specific teaching material based on the principle of "learning by playing", using stories, comics, and interactive activities to translate abstract fiscal concepts into salient social experiences.[9] Briole et al. (2025) highlights that the pedagogical style of civic education is relevant: passive, fact-based instruction may have limited effects, while an interactive approach is likely more successful. Appendix A presents examples of the didactic materials, focusing on four original illustrated books for primary school students: *The Adventures of the Tax Team*, which uses a superhero storyline to link taxation to public goods and blame tax evaders (Appendix A3); *The Castaways on the Unknown Island*, an allegorical story emphasizing shared rules and the government role (Appendix A4); *The Tax Werewolf in the Labyrinth of Taxes*, a comic that explains the meaning of taxes, fairness, and everyday compliance (Appendix A5); and *Pag & Tax in the Land of Rules*, which combines storytelling and didactic panels to introduce civic rights and duties (Appendix A6). A set of recurring narratives emerges:

- *Taxes as a prerequisite for public goods and collective well-being.* At the core of the program is

[7] Program activities can span up to 33 hours per class, corresponding to the maximum number of hours allocated to civic education across all school levels.

[8] For a detailed list of objectives, see Appendix A1 for the Memorandum of Understanding between the Revenue Agency and the Ministry of Education (available in Italian at this link).

[9] The program draws on insights from psychology and education: narratives and role models facilitate moral norm internalization (Bandura 1977), while early moral reasoning develops through stories of right and wrong (Kohlberg and Hersh 1977).

a basic public finance insight: public goods require collective financing, and voluntary contributions are insufficient in the presence of free-riding. The materials translate this abstract logic into intuitive contrasts between functioning and failing communities. In *The Adventures of the Tax Team*, illustrated in Figure 2, tax evasion is personified by a villain whose actions directly result in deteriorating roads, collapsing hospitals, and social disorder. Society without taxation is depicted as deprived of basic services, and familiar environments – schools, parks, playgrounds – are used to ground the concept of public goods in children's everyday experiences.

- *Rule compliance as a social norm.* The program aims to foster intrinsic motivation for rule compliance. Non-compliance is portrayed as socially destructive, although privately tempting. In *The Adventures of the Tax Team*, the tax evader initially enjoys admiration, only to be blamed once public services collapse. Similarly, *The Castaways on the Unknown Island* shows how the absence of shared rules would benefit the strongest and ultimately generate conflict and insecurity. These examples illustrate how short-run private gains undermine collective well-being and impose externalities on others.

- *Tax progressivity as a fairness norm embedded in constitutional rules.* Progressive taxation is presented as a constitutional principle that legitimizes the tax system by aligning contributions with citizens' ability to pay.[10] This idea is dramatized in Figure 2, where a heroine confronts Dr. Evasor and invokes the Constitution as a "superpower" that restores progressivity. Through this narrative, the program aims to shape fairness beliefs and strengthen perceptions of the legitimacy of progressive taxation.

- *Civic responsibility as the glue of political institutions.* The program teaches how compliance with civic duties – paying taxes, voting, respecting shared rules – supports the provision of public goods, enables social insurance, and ultimately mitigates inequality. The allegory of *The Castaways* makes this mechanism vivid by depicting institutional breakdown when no common rules are recognized or enforced. Complementarily, *Pag & Tax in the Land of Rules* and the booklet *How to Be a Good Citizen* (Appendix A7) explicitly pair civic rights with civic duties, portraying responsible citizenship as a reciprocal relationship in which individual contributions sustain collective benefits.

Student creative outputs. A central component of the program is the active involvement of students in producing original creative works – such as poems, drawings, short stories, videos, and theatrical sketches – based on the civic concepts covered in class (see Appendix A9–A13 for examples). These activities are explicitly designed to move beyond passive learning and foster internalization through reflection, discussion, and peer interaction. They also promote student cooperation: working together to create such outputs requires coordination, trust, and collective responsibility, which can strengthen prosocial interaction and shared group belonging (Alan 2025).

[10] Article 53 of the Italian Constitution states that "Everyone is required to contribute to public expenditures in proportion to their ability to pay. The tax system is based on criteria of progressivity."

Figure 2: Vignettes from *The Adventures of the Tax Team*

(a) Tax Evasion and Its Consequences

(b) Italian Constitution and Tax Progressivity

Notes: This sequence from *The Adventures of the Tax Team* illustrates two core messages about taxation. The top panel dramatizes the consequences of tax evasion. In the top left vignette, Dr. Evasor seizes control of the city and proclaims that no one will pay taxes anymore. The other vignettes show the immediate fallout: public hospitals become pay-only, broken infrastructure, and protests, emphasizing that the burden of fiscal breakdown falls disproportionately on the poorest. The bottom panel illustrates the constitutional foundation of progressive taxation. The story begins with citizens demanding the restoration of public services (top left). A civic heroine confronts Dr. Evasor, declaring that everyone must contribute to the community's well-being, to which he cynically responds, "And who says that?" (top right). The bottom left vignette reveals the answer: the Italian Constitution. Article 53 is portrayed as a "superpower", emphasizing that all citizens must pay taxes according to their ability to pay and that the tax system must be progressive. See Appendix A3 for more details.

A coherent set of themes emerges from these outputs. Students depict tax evaders as morally deviant and socially harmful actors, often portrayed as worms or other parasitic creatures that "feed" on the community (see, e.g., Figure A4). By contrast, compliant citi-

zens are frequently shown confronting or denouncing these figures, reinforcing the idea that tax evasion violates shared civic norms. This stigmatization mirrors the program's narrative, suggesting that students internalize non-compliance as a socially unacceptable behavior. The works also repeatedly emphasize the connection between taxes and public goods. Schools, hospitals, and playgrounds feature prominently as visible beneficiaries of tax revenues, while tax evasion is associated with deteriorating infrastructure, greater inequality, and social disorder.

Program selection. Program participation is determined by an internal invitation procedure. Each year, regional offices of the Revenue Agency draw lists of municipalities to be invited to join the program, without explicit prioritization based on school performance, socio-economic composition, or civic outcomes.[11] Once a municipality enters the program, participation is renewed in subsequent years, generating a gradual and persistent expansion in coverage. While invitations are "as good as random", the actual take-up may deviate from randomness. According to the Revenue Agency, two forms of self-selection can arise. First, some schools join outside the invitation channel, often through word-of-mouth. Second, invited schools may decline participation, although no official records of refusals are kept. In the data, I observe actual program participation, an exposure measure that may thus embed non-random take-up. I address selection concerns in two ways. First, I document that program participation is not systematically correlated with a range of municipality- and school-level characteristics. Second, I test for pre-treatment parallel trends in several outcomes.

3 Data and Empirical Strategy

3.1 Data

Program take-up. The Revenue Agency provides administrative records identifying the municipality where the program is implemented and the year of first introduction in each municipality. Figure 3 illustrates the take-up pattern. The left-hand side graph in the top panel documents a steady expansion in the number of participating municipalities over time, reaching 1,265 in 2018, which corresponds to about 16% of Italian municipalities.[12] The right-hand side graph shows that take-up is geographically balanced.

The bottom panel examines whether program adoption is systematically related to observable municipal characteristics. It reports coefficient estimates from regressions of an indicator for program adoption on a set of municipal characteristics. All covariates are measured in the pre-treatment period for treated municipalities. The figure shows that program take-up is not systematically predicted by educational performance, mayor characteristics, or proxies for civic capital, such as the prevalence of social cooperatives and non-profit or-

[11] Email exchanges with the Italian Revenue Agency and two regional branches suggest that no explicit territorial or social priorities exist. The regional offices tend to rely on informal guidelines, such as processing invitations in alphabetical order. Participation is free of charge for schools: the Agency provides teaching materials, classroom visits, and guided activities as part of its institutional mission.

[12] Because the program was suspended during the Covid-19 emergency, new implementations ceased after 2018. In the empirical analysis, however, I also consider cohorts observed after 2018, who may have been exposed prior to the suspension (e.g., a cohort observed in 2020 could have received the program in 2018).

ganizations.[13] Section 4.4 further shows that participation is not systematically related to a range of *time-varying* school- and municipality-level characteristics.

Cheating. The National Institute for the Educational Evaluation of Instruction and Training (INVALSI) provides data on cheating in standardized tests. As part of its national assessment program, INVALSI administers tests in mathematics and language to all second- and fifth-grade students. The analysis focuses on fifth-grade classes, while second-grade students are not exposed to the program and can provide a placebo group.[14] INVALSI exams are low-stakes assessments: test scores do not influence students' progression to the next grade, admission to different school tracks, or access to resources, and are not used for accountability of teachers or schools. Performance on these tests is thus unlikely to reflect strategic responses, and provides a proxy for student intrinsic motivation for rule compliance.

To detect cheating, INVALSI employs a statistical algorithm that flags classes exhibiting anomalous response patterns.[15] The final output is a continuous class-level indicator reflecting the extent of score manipulation. This approach parallels that of Angrist et al. (2017) using the same data. I calculate the cheating rate for each class as the average across subjects. To facilitate interpretation and comparability, the cheating rate is standardized to have a mean of zero and a standard deviation of one.

The final sample spans from the 2011/2012 to 2023/2024 school years and includes 3,724,058 students across 219,426 unique classes, drawn from a balanced panel of 5,590 schools located in 3,471 municipalities. In this sample, approximately 5% of classes are identified as having compromised scores. This cheating propensity is comparable to estimates reported in other contexts, such as elementary schools in Chicago (Jacob and Levitt 2003) and secondary schools in Mexico (Ajzenman 2021). In Southern Italy, however, cheating is higher, averaging 8 percent and reaching 18 percent in some areas (see Appendix Figure B1 for a map of cheating rates). Municipalities with elevated cheating rate tend to exhibit higher levels of tax evasion – measured by indicators such as the share of unreported taxable buildings and national TV fee non-payment – and lower levels of civic engagement, proxied by the prevalence of social cooperatives (see Appendix Figure B2).

Data on cheating are matched to administrative information describing schools, classes, and students. Panel A of Table B2 provides summary statistics for this sample.

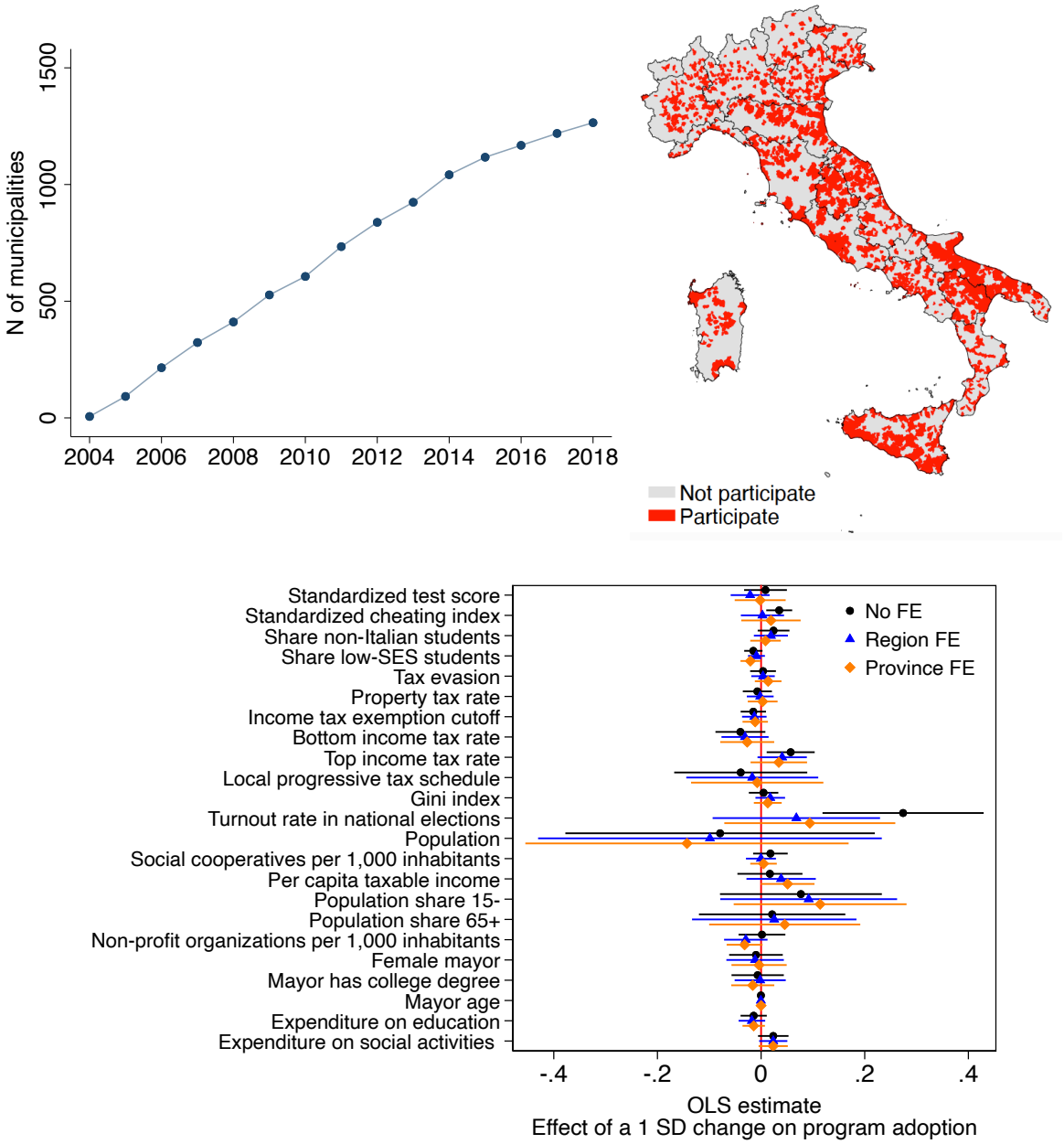
Student surveys. I use survey data collected by INVALSI covering behaviors and attitudes for around 1.5 million pupils in grades five, six, and ten. I group survey questions into two main domains. The first captures antisocial and aggressive behavior using three binary indi-

[13] Turnout in national elections and, to a lesser extent, the top income tax rate and the cheating index are positively correlated with program adoption in specifications without fixed effects. However, these associations disappear once region or province fixed effects are included. Because the main analysis absorbs this source of variation through municipality (or school) fixed effects – or, when municipality identifiers are unavailable, region or province fixed effects –, this pattern does not pose a threat to identification.

[14] Although INVALSI also administers standardized tests in secondary schools, the cheating index is available only for a limited set of years at those grades, preventing the construction of a panel in secondary schools.

[15] As illustrated in Quintano et al. (2009), the cheating indicator relies on several class-level metrics, such as unusually high average scores, very low variance, and highly uniform answer patterns across students. These metrics are summarized using principal component analysis, and classes are then clustered via a fuzzy k-means algorithm to estimate the likelihood that scores were compromised. See Appendix B3 for details.

Figure 3: Program Take-Up



Notes: The left-hand side top panel reports the cumulative number of municipalities that joined the program. The right-hand side top panel provides a map of participating schools. The bottom figure reports estimates from municipal-level regressions of program participation on a set of covariates, measured at the pre-treatment level for treated municipalities. Each point is the OLS coefficient associated with a one standard deviation increase in the corresponding variable, along with 95% confidence intervals. Three specifications are shown: without controls, with region fixed effects, and with province fixed effects. To facilitate comparability across covariates expressed in different units, all continuous variables are standardized to have zero mean and unit variance. See Appendix Table B1 for more information on these variables and their source.

cators: (i) *theft*, equal to one if the student reports that something valuable was stolen from them at school; (ii) *physical aggression*, equal to one if the student reports having hit other students; and (iii) *social exclusion*, equal to one if the student reports having isolated or excluded peers. Antisocial behaviors are prevalent: about 7% of students report having experienced theft, 36% report engaging in social exclusion, and 16% report physical aggression. The sec-

ond domain measures non-cognitive traits related to motivation and self-regulation, such as intrinsic disutility from studying and grit. Each measure is coded as an indicator equal to one if the student partially or fully agrees with the corresponding statement. Appendix B6 details the survey items. Panel B of Table B2 reports descriptive statistics for this sample.

School principal surveys. INVALSI also administers surveys to school principals. I focus on three main sets of questions. First, I build on assessments of teachers' preparation, dedication, and pedagogical methods to construct an index on *teaching practices and engagement* using principal component analysis.[16] Horizontal practices, such as encouraging group work and active participation, can foster cooperation and the development of social capital (Algan et al. 2016). Second, I rely on information on the extent of parental involvement to create an index on *family-school cooperation*, since engaged families may strengthen the transmission of civic norms at home (see, e.g., Agostinelli et al. 2025). Finally, I retrieve information on the availability of libraries, laboratories, gyms, and outdoor spaces to develop an index of *school resources and facilities*. For each of these three sets of questions, I construct an index using principal component analysis. Appendix B7 describes the specific survey questions.

Turnout. I collect administrative data on voter turnout in national elections from the Italian Ministry of the Interior's website. For each election and municipality, I calculate the turnout rate as the number of ballots cast as a share of registered voters. Panel C of Table B2 reports descriptive statistics, based on 45,980 municipality-election observations between 2000 and 2024. On average, turnout is relatively high by international standards, at 76% of registered voters (see Panel C of Table B2 for descriptive statistics). Elections typically take place every 4.2 years, more frequently than the formal five-year term, because Italian governments often failed to complete their mandate and early elections were called.

Local tax rates. I collect information on two tax rates set by municipalities that capture different propensity to tax rich and poor taxpayers. The first measure is the tax rate applied to luxury residential properties, obtained from *Fondazione IFEL*. These properties refer to cadastral categories A/1, A/8, and A/9 and include properties of distinguished value ("*abitazioni di tipo signorile*"), and, therefore, proxy for the fiscal burden borne by wealthier homeowners. The second is the bottom marginal income tax rate (as a surtax on the national and regional income tax), collected by Rubolino and Giommoni (2023), which reflects the tax burden faced by poorer taxpayers. I focus on the 2001–2015 period because, starting in 2016, a national tax freeze suspended the power of local governments to increase local tax rates (Law no. 208/2015, art. 1, comma 26). Panel D of Table B2 reports summary statistics.

Other data. I rely on two further data sources to perform complementary analyses and robustness checks. First, I assemble data on local politicians from the Ministry of the Interior's

[16] Whenever I construct an index from a set of survey questions, I follow Anderson (2008)'s procedure, which involves: (i) switching the sign of outcomes where necessary so that the positive direction always indicates a "better" outcome, (ii) normalizing each outcome, and (iii) computing a weighted average of normalized outcomes to build the corresponding index, where each weight corresponds to the inverse of the covariance matrix of the outcomes.

website. The data cover all individuals elected to municipal councils from 1986 to 2024. For each politician, the data report information on date and place of birth, gender, and education level, the municipality of election, the election date, and the political office held.

Second, I use individual-level survey data from the Italian National Election Studies (ITANES), which provide information on attitudes and views toward the role of government and on salient policy issues. ITANES consists of a cross-sectional survey conducted just before the 2013 national election and include approximately 1,500 representative respondents.

Panels E and F of Table B2 reports summary statistics.

3.2 Identification Strategy

The key source of identifying variation is the staggered introduction of the Tax and School program across municipalities. I use this variation in a two-way fixed effects (TWFE) specification. The baseline regression specification is:

$$y_{it} \;=\; \alpha_i \;+\; \beta_t \;+\; \theta\, S_{m(i)t} \;+\; u_{it}, \tag{1}$$

where y_{it} is the outcome of interest, observed for unit i in year t. The unit of observation varies by outcome (i.e., a fifth-grade class in the cheating analysis; a municipality in the turnout analysis). The specification includes unit (school or municipality) fixed effects, α_i,[17] and year fixed effects, β_t. Treatment status is defined as $S_{m,t} = \mathbf{1}(t \geq F_m)$, where F_m denotes the starting year in which municipality m implements the program. The error term u_{it} captures idiosyncratic shocks, and standard errors are clustered at the municipality level.[18]

The coefficient θ captures the average treatment effect of the program on the outcome of interest. Identification relies on the assumption that, conditional on fixed effects, the timing of program adoption is as good as random. Although Figure 3 indicates that program adoption is orthogonal to a broad set of pre-determined municipal characteristics, one could still be concerned that unobserved differences across schools or municipalities correlate with both program take-up and trends in the outcomes of interest.

These concerns motivate the use of an event-study specification, which allows visual and statistical assessment of pre-treatment trends. I estimate an event-study specification of the following form:

$$y_{it} \;=\; \alpha_i \;+\; \beta_t \;+\; \sum_{k=K^-;k\neq -1}^{K^+} \gamma_k \cdot \mathbf{1}\{i \in \mathit{Treated}\} \cdot \mathbf{1}\{k = t - F_{m(i)}\} \;+\; u_{it}, \tag{2}$$

where the event-time indicators $\mathbf{1}\{k = t - F_{m(i)}\}$ measure years relative to the program inception year. The coefficient for the year preceding treatment is normalized to zero ($\gamma_{k=-1} = 0$), so all coefficients are interpreted relative to that baseline. Identification rests on the paral-

[17] These fixed effects absorb any time-invariant local norms, such as the prevailing social expectations about what constitutes inappropriate behavior in the classroom or what students perceive as acceptable levels of collaboration during tests. This is important because existing evidence shows that individuals hold idiosyncratic and context-specific beliefs about what counts as "cheating", and these subjective notions vary systematically across environments (see, e.g., Butler et al. 2016).

[18] Because the cheating rate is a generated outcome, I also compute bootstrapped standard errors that account for first-step estimation uncertainty; in practice, they are quite similar to the clustered standard errors and do not substantially affect statistical inference.

lel trends assumption: in the absence of treatment, outcomes in treated and not-yet-treated (or never-treated) municipalities would have followed similar trajectories.

Recent methodological contributions have shown that traditional TWFE estimators with staggered adoption can produce biased and non-convex averages of treatment effects when treatment effects are heterogeneous across cohorts or over time. Following de Chaisemartin and D'Haultfœuille (2024), I estimate equation (1) and (2) using the Stata routine *did_multiplegt_dyn*, which accounts for staggered adoption and treatment effect heterogeneity.

4 Student- and Class-Level Effects

4.1 Cheating in Standardized National Assessments

This section presents program effects on student intrinsic motivation for rule compliance, proxied by the prevalence of cheating in standardized exams. In this analysis, the unit of observation is a fifth-grade class observed in a given school year, forming a repeated cross-section of classes within the same school that are observed before and after adoption.

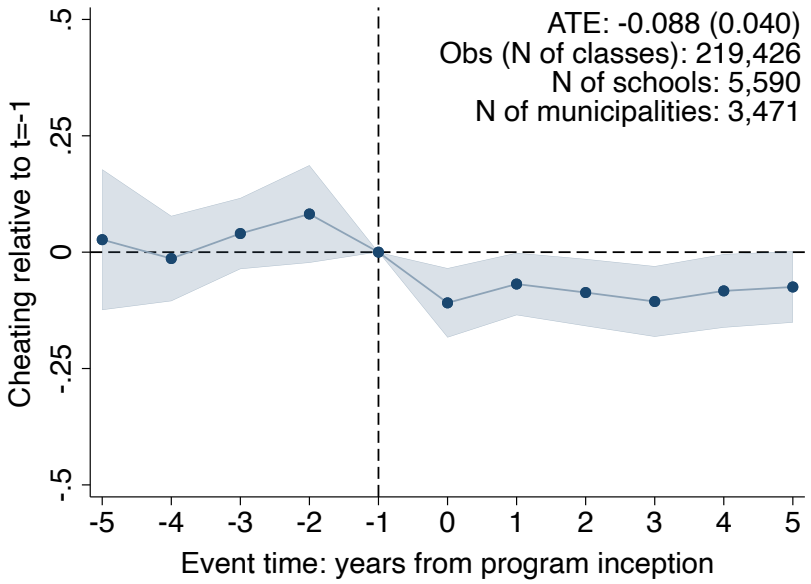
Baseline results. Figure 4 displays event-study estimates obtained from equation (2), which includes school and year fixed effects. The graph shows that cheating rates are statistically indistinguishable from each other in the years leading up to program introduction. A significant reduction in cheating emerges immediately following treatment and remains stable over the subsequent five-year window. This suggests that the program led to a persistent cheating drop in each student cohort.

The average treatment effect (ATE), estimated from equation (1), suggests a reduction in the cheating rate by about 8.8% of a standard deviation. To put such magnitude into perspective, consider the following back-of-the-envelope calculation. The original cheating variable has a mean of 0.048 and a standard deviation of 0.114, implying that the program's estimated impact corresponds to a reduction of about 0.010 in the original scale. For reference, average cheating rates are 0.089 in Southern regions and 0.027 in Northern–Center regions, yielding a North–South gap of 0.062. The estimated impact is thus equivalent to about 16% of the existing regional difference in cheating behavior.

The role of teachers. Teachers can play a central role in shaping students' civic norms. Prior work shows that they can limit antisocial behavior (Alan et al. 2025) and influence both cognitive and non-cognitive skills (Jackson 2018; Petek and Pope 2023). In particular, Algan et al. (2013) highlight how horizontal teaching practices – which emphasize cooperation, group work, and active student participation – foster the development of trust, reciprocity, and other civic attitudes. This suggests that civic education could be more effective in classrooms where teachers adopt pedagogical styles that encourage such practices.

To examine the role of teachers, I exploit heterogeneity in the index of teacher practices and engagement. Consistent with the hypothesis that more engaged teachers reinforce the program's civic messages, the top panel of Figure 5 shows that effects are concentrated in classrooms with the index above the median (ATE = –0.135, SE = 0.079), rather than in those below the median (ATE = –0.054, SE = 0.073). Pre-treatment trends are flat across the two

Figure 4: Program Impact on Cheating in Standardized Exams



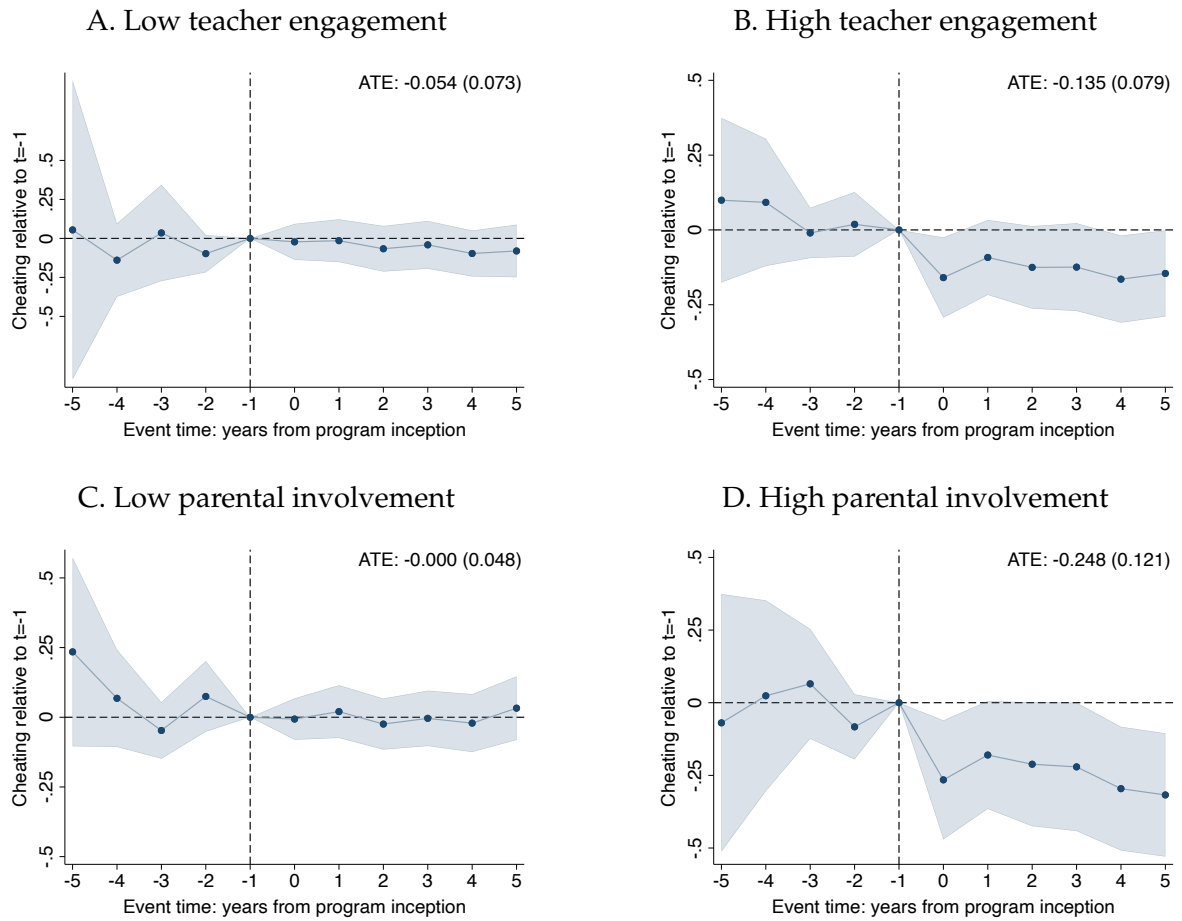
Notes: This figure depicts the dynamic treatment effects from equation (2). Each point represents the estimated coefficient for a specific event time, and the 95% confidence intervals based on standard errors clustered at the municipality level. The sample includes fifth-grade classes observed between years 2011/2012 and 2023/2024. The cheating rate is calculated at the class level, averaged across math and language subjects, and standardized to have a mean of zero and a standard deviation of one. Estimates are obtained from a model that includes school and year fixed effects. The graph also reports the average treatment effect estimated from equation (1), its associated standard error, and the number of observations (classes), schools, and municipalities.

groups, supporting the interpretation that these differences reflect complementarity between teaching practices and the program, rather than differential selection of more engaged teachers into treated schools.

Another possible interpretation for this result is that it may capture a response by *teachers themselves*. Angrist et al. (2017) document that teacher-induced cheating occurred during the transcription of test responses onto machine-readable form: a poorly supervised task that allowed for both clerical errors and intentional score inflation. This channel, however, was effectively closed after 2017, when INVALSI transitioned to fully electronic testing. I present two pieces of evidence consistent with a student-driven effect. First, unlike Angrist et al. (2017), who found teacher-driven manipulation to be more prevalent in small classes, the top panel of Figure C1 shows that effects are concentrated in large classes, where supervision is weaker and peer copying tends to be easier. Second, Figure E1 shows no effect in same-school *second*-grade classes, where students are not exposed to the program, although their teachers are.

Parental involvement. Active parental participation in school life and engagement with their children's learning can reinforce the program's civic messages outside the classroom. Based on the parental involvement index previously described, the bottom panel of Figure 5 shows that the program reduces cheating only in schools with above-median levels of parental involvement (ATE = -0.248 and SE = 0.121 in above-median schools; ATE = -0.000

Figure 5: The Role of Teacher and Parental Engagement



Notes: This figure depicts the dynamic treatment effects from equation (2) on different sub-samples of the original population. The top panel presents heterogeneity by teacher engagement, while the bottom panel examines heterogeneity by family-school cooperation. Both indices are constructed from school principal survey responses. Estimates are obtained from a model that includes school and year fixed effects. The graph also reports the average treatment effect estimated from equation (1) and its associated standard error.

and SE = 0.048 in below-median schools). This result is consistent with the idea that when parents are more engaged in school life and in their children's learning, civic messages introduced at school are more likely to be reinforced at home, making norm internalization more persistent and behaviorally salient.

School resources. Well-equipped schools can foster civic capital by providing students with shared spaces and structured occasions for interaction outside standard classroom instruction. Libraries, laboratories, gyms, and outdoor areas can support group-based activities, extracurricular projects, and supervised peer interaction, all of which may help develop cooperation, mutual respect, and a sense of collective responsibility. By contrast, when these facilities are scarce, students have fewer opportunities to engage in the kinds of collaborative experiences that can nurture prosocial behavior. In this context, the program may play a compensatory role by creating structured occasions for cooperative learning and civic reflection that better-resourced schools are more likely to provide through their ordinary environment.

To examine this mechanism, I use the school resources index previously described, which is constructed from information on the availability of libraries, laboratories, gyms, and outdoor spaces. The top panel of Figure 6 shows that the effect is concentrated in resource-poor schools (ATE = -0.208, SE = 0.117 in below-average schools; ATE = -0.025, SE = 0.053 in above-average schools), suggesting that civic education partly substitutes for the cooperative and socializing opportunities that richer school environments provide more routinely.

Socio-economic background. The program's effectiveness may also vary by socio-economic background, independently of school infrastructure. A long tradition of research suggests that children from disadvantaged families are, on average, less exposed to forms of civic socialization outside school, whether because parents have fewer resources and less time to engage in school-related activities, because discussions of politics and public institutions are less frequent at home, or because neighborhoods offer fewer opportunities for participation in organized collective activities (Langton and Jennings 1968; Kosse et al. 2020). As a result, schools may play a particularly important compensatory role in transmitting civic norms and prosocial behaviors in these contexts. To examine this dimension, I stratify classes by the within-class share of students with low parental education, defined as having both parents with at most lower secondary education. Panel D of Figure 6 shows that the effects are concentrated in classes with above-median shares of low-SES students (ATE = -0.147 and SE = 0.062). This pattern suggests that civic education is especially effective in disadvantaged settings, where it may compensate for a relative lack of civic exposure outside school.

4.2 Interpersonal Misconduct and Negative Peer Interactions

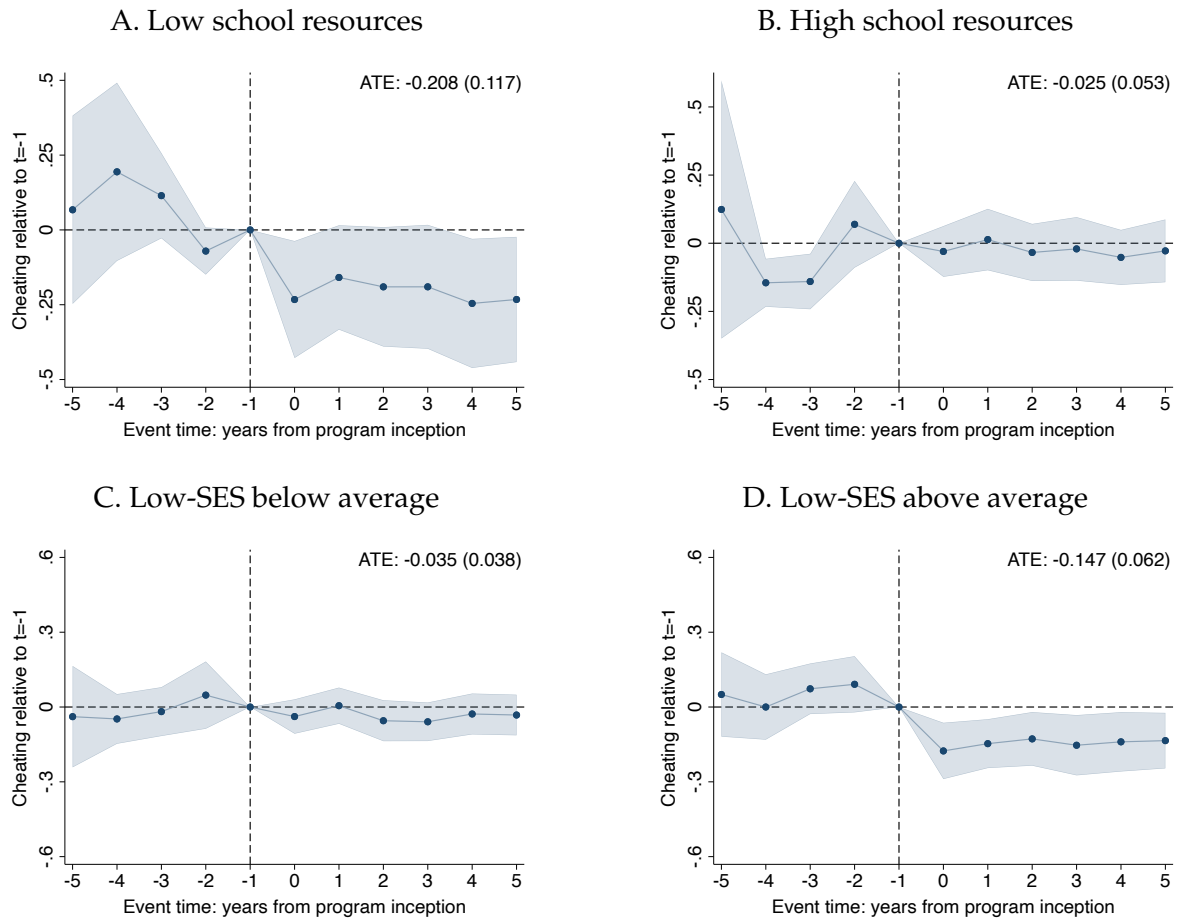
This section examines a set of outcomes that capture how students interact in everyday school life, using survey data collected by INVALSI. Table 1 presents the estimated effects of the program on three measures: experience of theft (panel A), social exclusion (panel B), and physical aggression (panel C). The baseline specification controls for school, grade, and year fixed effects. Identification thus rests on comparing cohorts of students within the same school and grade, before and after the program.

Across all three dimensions, the estimates suggest that program participation is associated with a statistically significant reduction in peer misconduct. For theft, the estimated effect is a reduction of 0.5 percentage points from a baseline prevalence of 7%, amounting to a relative decline of approximately 8%. For social exclusion, the effect is larger in absolute terms, with a reduction of about 2.1 percentage points from a baseline of 36%, corresponding to a 6% relative decline. For physical aggression, the program reduces the likelihood by approximately 1.7 percentage points, from a base of 16%, or about a 10% relative reduction. Such magnitudes are comparable with those of established school-based interventions designed specifically to curb violent behavior (see Durlak et al. (2011) for a meta-analysis).[19]

A limitation of this analysis is that the survey data do not allow for a direct test of pre-

[19] Figure C2 explores heterogeneity by gender and nationality. It shows that effects are stronger for boys, particularly in reducing physical aggression. This is consistent with the idea that boys start from higher baseline levels of aggressive conduct and, therefore, have more room for improvement. For theft and social exclusion, effects are visible for both genders. It also shows that native students tend to be more responsive, but the effect is less precisely estimated for non-native students.

Figure 6: Heterogeneity by Socio-Economic Background



Notes: This figure depicts the dynamic treatment effects from equation (2) on different sub-samples of the original population. The top panel focuses on school resources, using an index derived from principals' reports on the availability of several school facilities, including libraries, laboratories, gyms, and outdoor spaces. The bottom panel shows estimates based on the classroom share of low-SES students, defined as the proportion of students in the class with both parents having at most lower secondary education. Estimates are obtained from a model that includes school and year fixed effects. The graph also reports the average treatment effect estimated from equation (1) and its associated standard error.

treatment trends, since each school is observed in at most two waves. To assess the credibility of these results, I rely on two complementary checks. First, I show that the estimated effects are stable to the inclusion of a progressively richer set of controls. Adding student-level covariates (gender, immigrant background, and early childhood education) and absorbing increasingly fine-grained geographic shocks through year-by-region and year-by-province fixed effects leave the coefficients essentially unchanged (columns 2-4). Second, I conduct a series of robustness tests showing that program adoption is not systematically related to trends in several school- and municipality-level characteristics (see Section 4.4).

4.3 Attitudes Unrelated to Civic Norms and Test Performance

I now examine potential effects on a set of questions that are available in the INVALSI data, but capture attitudes and dispositions not directly tied to civic norms of legality and coop-

Table 1: Program Impact on Peer Misconduct

	(1)	(2)	(3)	(4)
	A. *Outcome*: Theft			
$S_{m(i),t}$	-0.005**	-0.006***	-0.006***	-0.005**
	(0.002)	(0.002)	(0.002)	(0.002)
Mean outcome	0.067	0.067	0.067	0.067
	B. *Outcome*: Social exclusion			
$S_{m(i),t}$	-0.021**	-0.023***	-0.023***	-0.021***
	(0.008)	(0.008)	(0.008)	(0.008)
Mean outcome	0.361	0.361	0.361	0.361
	C. *Outcome*: Physical aggression			
$S_{m(i),t}$	-0.017**	-0.017***	-0.017***	-0.016**
	(0.007)	(0.006)	(0.006)	(0.007)
Mean outcome	0.159	0.159	0.159	0.159
Obs (N of students) - panel A	1,468,686	1,468,686	1,468,686	1,468,686
Obs (N of students) - panel B and C	1,503,583	1,503,583	1,503,583	1,503,583
School, grade, and year FE	Yes	Yes	Yes	Yes
Student controls	No	Yes	Yes	Yes
Year-region FE	No	No	Yes	No
Year-province FE	No	No	No	Yes

Note: This table presents the estimated program effects on measures of peer misconduct. *Theft* is measured using a binary indicator equal to one if the student reports having had a personal item stolen at school. *Social exclusion* is based on students' self-reports of having deliberately isolated or excluded peers from social or group activities at school. The variable is coded as one if the student acknowledges engaging in such behavior at least occasionally. *Physical aggression* is based on student responses to the question: "Have you ever hit other students?" The binary indicator takes the value of one if the student reports engaging in physical aggression at least sometimes. The sample is a repeated cross-section of students from grades 5, 6, and 10. Column (1) includes school, grade, and year fixed effects. Column (2) adds controls for gender, immigrant background, and early childhood education. Column (3) further includes year-by-region fixed effects, while column (4) replaces these with year-by-province fixed effects. Standard errors clustered at the municipality level are reported in parentheses.

eration. Studying to please parents or teachers can be interpreted as reflecting compliance with authority or approval-seeking behavior. Studying for grades, rewards, or social recognition captures forms of extrinsic motivation. Reporting that school is boring can be read as a proxy for low intrinsic motivation, while reporting a tendency to give up when subjects become difficult captures perseverance, or what the literature often refers to as grit.

These variables provide a placebo test for the interpretation of the main results: under the hypothesis that the program affects civic norms specifically, rather than students' attitudes in a broad and undifferentiated way, its effects should be limited on these outcomes.

Table 2 shows that the program has no statistically or economically meaningful effect on any of these outcomes. Point estimates are close to zero and precisely measured in all specifications. A natural interpretation is that the program does not move "placebo" dimensions, reinforcing the case that its impacts are specific to the formation of civic norms. These null effects also help rule out alternative channels, such as changes in disciplinary practices that could generate the observed reductions in intrinsic rule compliance and antisocial behavior.

If the program leaves academic effort, grit, and enjoyment of studying unchanged, there

Table 2: Program Impact on Attitudes Unrelated to Civic Norms

	(1)	(2)	(3)	(4)
	A. *Outcome*: Study to please teachers			
$S_{m(i),t}$	-0.001	-0.001	-0.001	-0.002
	(0.005)	(0.005)	(0.005)	(0.005)
Mean outcome	0.562	0.562	0.562	0.562
	B. *Outcome*: Study to please parents			
$S_{m(i),t}$	0.000	0.001	0.001	-0.001
	(0.005)	(0.005)	(0.005)	(0.005)
Mean outcome	0.553	0.553	0.553	0.553
	C. *Outcome*: Study to achieve good results			
$S_{m(i),t}$	-0.001	-0.001	-0.001	-0.000
	(0.001)	(0.001)	(0.001)	(0.001)
Mean outcome	0.978	0.978	0.978	0.978
	D. *Outcome*: Study to avoid embarassment			
$S_{m(i),t}$	-0.003	-0.001	-0.001	-0.002
	(0.004)	(0.004)	(0.004)	(0.004)
Mean outcome	0.599	0.599	0.599	0.599
	E. *Outcome*: Study to receive awards			
$S_{m(i),t}$	-0.001	0.000	0.000	0.000
	(0.004)	(0.004)	(0.004)	(0.004)
Mean outcome	0.328	0.328	0.328	0.328
	F. *Outcome*: Finds studying boring			
$S_{m(i),t}$	-0.000	0.000	0.000	0.000
	(0.002)	(0.002)	(0.002)	(0.002)
Mean outcome	0.956	0.956	0.956	0.956
	G. *Outcome*: Gives up on difficult subjects			
$S_{m(i),t}$	0.003	0.003	0.003	0.003
	(0.004)	(0.004)	(0.004)	(0.004)
Mean outcome	0.441	0.441	0.441	0.441
Obs (N of students)	1,519,905	1,519,905	1,519,905	1,519,905
School, grade, and year FE	Yes	Yes	Yes	Yes
Student controls	No	Yes	Yes	Yes
Year-region FE	No	No	Yes	No
Year-province FE	No	No	No	Yes

Note: This table presents the estimated program effects on attitudes unrelated to civic norms. Each outcome is a binary indicator equal to one if the student partially or fully agrees with the corresponding statement, and zero otherwise. Control variables are the same as in Table 1. Standard errors clustered at the municipality level are reported in parentheses.

is little reason to expect meaningful gains in achievement. I examine this implication by estimating event-study effects on standardized fifth-grade INVALSI test scores. The analysis uses the same sample as the cheating outcomes, ensuring full comparability. Panel A of Figure E2 shows a clear null effect. In addition, treated and untreated schools display parallel pre-trends, indicating that adoption is not systematically related to differential underlying trajectories in test performance.

4.4 Robustness Checks and Alternative Specifications

Within-school cross-grade variation. Appendix Figure E1 presents event-study estimates of cheating behavior among second-grade classes, who were not eligible for the program, following the program's adoption in fifth-grade classes within the same school. The figure shows no significant effects on untreated cohorts, suggesting that the estimated effects are not driven by unobserved school-level shocks. This result also suggests that the cheating effects are unlikely to be driven by teachers, who typically teach both second- and fifth-grade classes within the same school, and implies the absence of spillover effects across student cohorts within the same school.

Class characteristics. Changes in student composition around the time of program implementation could confound the interpretation of treatment effects. For instance, if more civically engaged families systematically move their children into schools participating in the program, then the observed effects could reflect selection. Moreover, local administrators may selectively implement the program in classes or schools with specific demographics, introducing bias in the estimated treatment effects. To assess such possibilities, Appendix Figure E2 presents event-study estimates of treatment effect on a range of classroom-level characteristics, such as the share of students who attended pre-school, the share of students from a low socio-economic background, the share of male students, the share of first-generation immigrant students, and the share of students with at least one foreign-born parent. Event-study coefficients are flat in both pre- and post-treatment periods in each of these outcomes, suggesting that program implementation is not associated with systematic changes in observed student composition.

Politicians' characteristics. The characteristics of municipal officials could influence the likelihood of program participation and its impact. For instance, municipalities led by more civically minded administrators may be more likely to request to join the program. To assess this possibility, I test whether socio-demographic characteristics of local politicians exhibit change in the years surrounding the program's introduction. Appendix Figure E3 reports event-study estimates for a set of outcomes, including: (i) whether the mayor has a college degree, (ii) the share of college educated town council members, (iii) whether the mayor is female, (iv) the share of women in the town council, (v) per capita school spending, and (vi) administrative spending. Across all outcomes, the estimated event-study coefficients are close to zero and statistically insignificant, both before and after program adoption.

Alternative control groups. Identifying variation comes from two comparisons: (i) treated versus never-treated municipalities, and (ii) treated versus not yet treated municipalities. I assess robustness to these alternative counterfactuals by re-estimating the effects with the de Chaisemartin and D'Haultfœuille (2024) estimator, restricting the control group in turn to never-treated units and to not yet treated units. Appendix Figure E4 shows that the estimated effects remain remarkably similar, indicating that the main findings are not driven by the specific choice of control group.

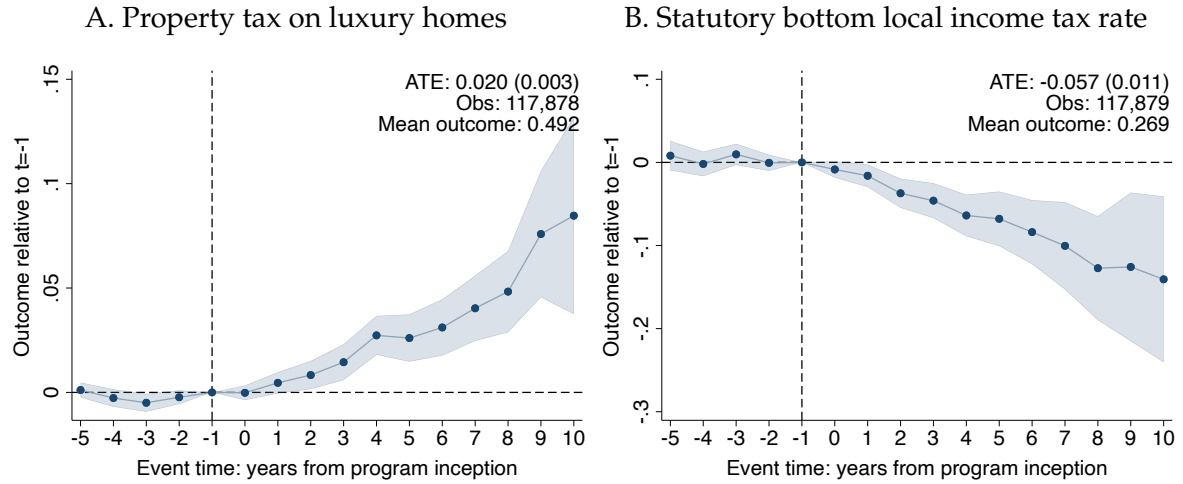
5 Community-Level Effects

This section presents community-level effects of the program along two dimensions. First, I analyze changes in local tax policy choices to test whether the program leads to greater support for redistribution. I then study the program's impact on voter turnout. These community-level outcomes capture both direct and spillover effects of the program. Spillovers may arise because students transmit civic norms acquired at school to family members and peers through everyday interactions, discussions of program activities, and participation in public initiatives promoted by the Revenue Agency that involve parents and local institutions. The event-study design can help distinguish these channels. Because treated students are not yet voters and do not directly engage in formal political processes, any immediate post-adoption effect is more plausibly driven by spillovers, whereas a gradual emergence of effects over time would be consistent with treated cohorts entering the electorate.

5.1 Tax Progressivity

Baseline results. Figure 7 presents program effects on two outcomes that capture redistribution at the local level. Panel A displays the evolution in the tax rate on luxury residential properties. It shows no detectable pre-trends and a gradual increase over time. After two years, the event-study coefficient becomes statistically significant. The increase accelerates after 8 years and reaches its maximum by year 10, when the electorate incorporates both primary and middle school treated cohorts. Panel B shows that the the statutory bottom income tax rate declines persistently after treatment. The coefficients start near zero after program introduction, but become pronounced over time.

Figure 7: Program Impact on Local Tax Policy



Notes: This figure depicts the dynamic treatment effects from estimating equation (2), which controls for municipality and year fixed effects. Each point represents the estimated coefficient for a specific event time, along with 95% confidence intervals based on standard errors clustered at the municipality level. Panel A reports estimates for the property tax rate on luxury homes. Panel B shows estimates for the bottom bracket of the municipal income tax. The graph also reports the average treatment effect estimated from equation (1), its associated standard error, the number of observations, and the mean value of each outcome variable.

The estimates suggest an average 0.02 percentage points increase in the luxury property tax rate (relative to a mean of 0.492), which translates into an increase of about 4%. A useful

benchmark is the response to a major tax enforcement shock in the property tax base studied by Rubolino (2023). In that context, Italian municipalities responded by increasing the luxury property tax rate by around 23%. Relative to this benchmark, the policy response associated with the Tax and School program is an order of magnitude smaller.

The response is already visible in the short run. One plausible interpretation is that the program affects local tax policy by activating channels of political visibility and local accountability. As part of the intervention, students write letters to their mayors describing local needs and proposing policy responses (see Appendix A2). These activities are not confined to the classroom: they are explicitly designed to engage the broader community, are often covered by local media, and culminate in public ceremonies attended by policymakers, parents, teachers, and other local actors. By making highly visible the connection between tax revenue and the provision of local public goods, the program may have increased the political salience of fiscal issues and created immediate incentives for incumbents to respond. In this sense, changes in local tax policy need not reflect only a slow-moving shift in underlying preferences; they may also arise because the intervention temporarily increases public attention to taxation and public spending, making tax choices more electorally and reputationally consequential for local officials. Below, I investigate some potential mechanisms underlying such effects.

Perceived quality of public goods. The program explicitly links tax compliance to the production of public goods. By making the fiscal contract more salient to students, the intervention may change how they judge public services. Program exposure can raise standards and make shortcomings more noticeable, even if objective quality is unchanged. If expectations increase, dissatisfaction with public goods may rise mechanically, and greater tax progressivity may become more attractive as a way to "pay for" better provision.

I test this channel using INVALSI survey questions on student evaluations of (i) the classroom environment: cleanliness, lighting, temperature, and noise, and (ii) school facilities: buildings, restrooms, labs, libraries, and technological equipment (see Appendix B8 for details). For each set of items, I construct an index as the first principal component. Because these questions are available only in a single wave, I cannot implement an event-study. Therefore, I estimate cross-sectional specifications with higher-level fixed effects (e.g., region or province).

Table 3 shows that program exposure significantly reduces reported satisfaction: treated students score about 0.16 standard deviations lower on the classroom environment index and about 0.08 standard deviations lower on the facilities index. An interpretation for this result is that the program shifted students' reference points by making the tax–public goods link more salient and sharpening beliefs about what public provision should deliver. Under this view, students evaluate services against a more demanding benchmark, so reported satisfaction can decline even if actual quality is unchanged.

This mechanism requires that the program is not disproportionately adopted in places with initially worse public services. The event-study heterogeneity by school resources (bottom panel of Figure 5), showing no differential pre-trends, suggests that any post-treatment shift in reported satisfaction is unlikely to reflect pre-existing differences in service quality.

Table 3: Perceived Quality of Public Goods

	(1)	(2)	(3)
	A. Quality index: classroom environment		
$S_{m(i)}$	-0.162***	-0.166***	-0.165***
	(0.012)	(0.011)	(0.012)
	B. Quality index: school facilities		
$S_{m(i)}$	-0.077***	-0.074***	-0.077***
	(0.007)	(0.007)	(0.007)
Obs (N of students)	784,043	784,043	784,043
Student controls	Yes	Yes	Yes
Region FE	No	Yes	No
Province FE	No	No	Yes

Notes: Each panel reports estimates where the dependent variable is a standardized index constructed via factor analysis. Panel A uses survey items on classroom cleanliness, lighting, temperature, and noise. Panel B uses items on buildings, restrooms, laboratories, libraries, and technological equipment. Higher values indicate better perceived quality. Student controls include gender, immigrant background, and early childhood education.

Views on the role of government. Another potential mechanism is that the program shifts beliefs about what the government is supposed to do. I explore this channel using the ITANES survey, which contains a battery of questions on views on the role of government (see Appendix B9 for details). I define exposure at the municipality level: respondents are classified as treated if they live in a municipality that adopted the program, capturing both direct exposure and indirect community spillovers.

Table 4 shows that program exposure increases support for government intervention to reduce income inequality by about 8 percentage points, relative to a baseline mean of 47 percentage points (Panel A). It also raises support for social policy, although estimates are less precise in the most saturated specification (Panel B), and it reduces support for decentralizing tax revenue management (Panel C), consistent with stronger trust in the central state's role in collecting and allocating tax revenues. By contrast, the program has no detectable effect on attitudes toward gender-based preferential policies, immigrant integration, or abortion (Panels D–F), suggesting that it does not generate a broad ideological shift, but primarily moves beliefs directly related to taxation and redistribution.

These results are consistent with the program increasing demand for a more active redistributive state, providing a plausible pathway from civic education to higher local tax progressivity. The evidence is nonetheless correlational: ITANES is cross-sectional and based on a small sample, so I cannot trace pre-trends or dynamics with an event-study design.

Entry into politics. If civic education raises interest in public affairs, exposed cohorts may become more likely to run for local office and influence fiscal choices directly. This would show up as faster generational turnover in municipal institutions.

I test this channel using administrative data on local elected officials. I estimate event-study effects of program adoption on (i) the average age of municipal office holders and (ii) the share of elected officials aged 25 or younger (Appendix Figure C3 considers alternative

Table 4: Views on the Role of Government

	Outcome: Support government intervention for:			
	(1)	(2)	(3)	(4)
	A. Reducing income inequality			
$S_{m(i)}$	0.082***	0.082***	0.082***	0.079***
	(0.027)	(0.028)	(0.028)	(0.028)
Mean outcome	0.466	0.466	0.466	0.466
	B. Providing social protection			
$S_{m(i)}$	0.054*	0.054*	0.054*	0.042
	(0.028)	(0.028)	(0.028)	(0.029)
Mean outcome	0.493	0.493	0.493	0.493
	C. Fiscal decentralization			
$S_{m(i)}$	-0.065**	-0.065**	-0.066**	-0.079***
	(0.026)	(0.026)	(0.026)	(0.026)
Mean outcome	0.255	0.255	0.255	0.255
	D. Gender-based policy			
$S_{m(i)}$	-0.021	-0.019	-0.019	-0.020
	(0.021)	(0.021)	(0.021)	(0.021)
Mean outcome	0.157	0.157	0.157	0.157
	E. Integration of immigrants			
$S_{m(i)}$	-0.000	-0.001	-0.001	0.001
	(0.009)	(0.009)	(0.009)	(0.009)
Mean outcome	0.028	0.028	0.028	0.028
	F. Discouraging abortion			
$S_{m(i)}$	-0.002	-0.002	-0.002	-0.009
	(0.022)	(0.022)	(0.022)	(0.023)
Mean outcome	0.196	0.196	0.196	0.196
Obs (N of respondents)	1,466	1,466	1,466	1,466
Region FE	Yes	Yes	Yes	Yes
Education FE	Yes	Yes	Yes	Yes
Gender FE	No	Yes	Yes	Yes
Marital status FE	No	No	Yes	Yes
Year of birth FE	No	No	No	Yes

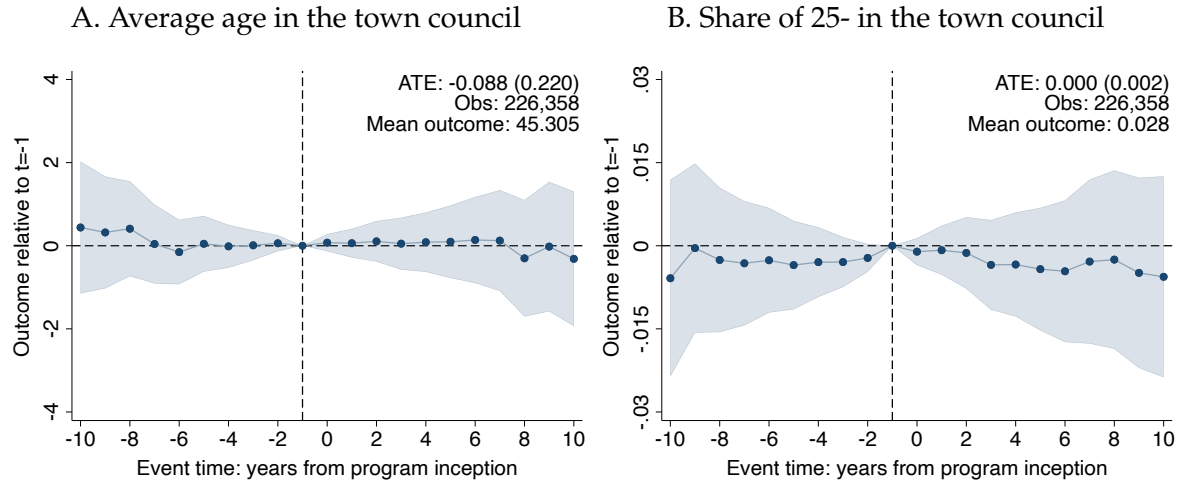
Notes: This table reports estimates using data from the Italian National Election Studies. Each outcome variable is constructed from a survey question eliciting respondents' views on the role of government and selected policy issues. For each statement, the dependent variable is a binary indicator equal to 1 if the respondent fully agrees with the statement; 0 otherwise. The statements considered are: "The government should intervene to reduce income inequalities among citizens" (panel A); "A stable structure of social protections should be the first goal of any government (panel B); "Tax revenue should be autonomously managed by the regions" (panel C); "Women should be given preferential treatment when looking for jobs or in their professional careers" (panel D); "Immigrants are a resource for the Italian economy" (panel E); "Obtaining an abortion should be made more difficult" (panel F).

age thresholds). Figure 8 reports estimates over a ten-year window, long enough for cohorts treated at the end of primary school to reach the age at which they can run for local office. Pre-trends are flat, and post-adoption coefficients are small and statistically indistinguishable

from zero for both measures. Overall, there is no evidence that the program affects entry into municipal politics.

Yet, two limitations are worth noting. First, the relevant outcomes are rare and measured with noise, so modest effects could go undetected. Second, even if exposure increases political ambition, treated individuals may relocate and seek office in a different municipality, which would attenuate estimates toward zero.

Figure 8: Entry Into Local Politics



Notes: The figure reports event-study estimates of program exposure on the average age of elected officials in municipal councils (panel A), and the share of municipal council members aged 25 or below (panel B). Each point represents the estimated coefficient from equation (2), along with 95% confidence intervals based on standard errors clustered at the municipality level. Each specification includes municipality and year fixed effects. Each graph also reports the average treatment effect estimated from equation (1), its associated standard error, the number of observations, and the average of each outcome variable.

5.2 Turnout in National Elections

Voter turnout provides a natural downstream test of whether the program's effects extend beyond school behavior. If civic education strengthens norms of collective responsibility and increases trust in the role of public institutions, these changes may eventually translate into a greater willingness to take part in elections. Turnout is therefore a useful outcome because it captures both possible short-run spillovers on families and communities and longer-run direct effects once exposed cohorts reach voting age.

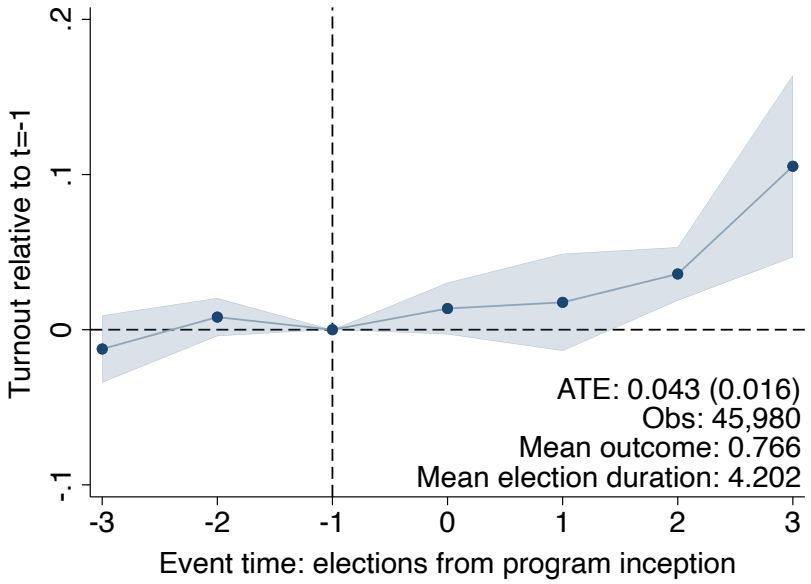
To estimate the program impact on voter turnout, I match the program inception year to municipality-level turnout in national elections. Event time is thus measured in election periods (since the program inception year), rather than in calendar years. In the data, elections occur, on average, every 4.3 years, so event time +1 corresponds to the first election after treatment (4.3 years later), +2 to the second election (8.6 years later), and so on.

Baseline results. Figure 9 presents event-study estimates from a specification with municipality fixed effects, election year fixed effects, and a municipality-specific linear time trend.[20]

[20]Since this analysis cannot include year fixed effects, I include municipality-specific linear trends to control for

The coefficients show no evidence of differential pre-trends: turnout in treated and untreated municipalities followed similar paths before program introduction, indicating that adoption was not driven by pre-existing movements in electoral participation. Following implementation, the estimates remain close to zero for the first election cycle, but begin to increase thereafter. The effect becomes statistically significant by the second election period and grows sharply by the third. This dynamic response is consistent with the timing of treated cohorts entering the electorate: middle school cohorts reach voting age roughly two election periods after exposure, while primary school cohorts only after around three elections.

Figure 9: Program Impact on Voter Turnout in National Elections



Notes: This figure depicts event-study effects of turnout in national elections on time relative to program implementation. Each point represents the estimated coefficient for a specific event time (measured in election periods), along with 95% confidence intervals based on standard errors clustered at the municipality level. The graph also reports the average treatment effect estimated from equation (1), its associated standard error, the mean turnout rate, and the mean election duration. The specification includes municipality fixed effects, election year fixed effects, and a municipality-specific time trend.

The TWFE estimate implies that the program increased turnout by about 4.3 percentage points from an average of 76.6%. To gauge the magnitude, the estimated effect can be compared to existing estimates on the impact of educational attainment on turnout. Using a regression discontinuity at school-entry cutoffs and administrative voter records, Kaplan et al. (2025) find that one additional year of schooling increases turnout by about 3 percentage points. Extrapolating from this estimate, the average effect generated by the program is equivalent to the effect attributed to 1.43 additional years of schooling.[21]

local gradual demographic changes.

[21] Cohodes and Feigenbaum (2025) show that attending a charter school raises the probability of voting in the first election by 6 percentage points from a baseline of 35%: a 17% relative increase. By contrast, the Tax and School program increases turnout by 5.6% relative to the Italian baseline. Although the absolute gains are smaller, they arise from a shorter instructional intervention and in a population where turnout is already high.

Interpreting municipality-level turnout effects. Because turnout is measured at the municipality level, the estimated effects aggregate participation changes over the full electorate. This raises a scaling concern: municipalities with younger age structures have treated cohorts making up a larger share of eligible voters. Yet, as shown in Figure 3, program participation is orthogonal to pre-treatment demographic characteristics: treated and untreated municipalities exhibit similar population size distributions and comparable shares of youth and elderly residents. Therefore, the estimates should not reflect compositional differences.

To directly address this scaling concern, I propose two robustness exercises. First, I augment the baseline specification with the interaction of election year fixed effects and quintiles of municipalities' pre-treatment population share younger than 15. These controls flexibly absorb time-varying demographic trends. Appendix Figure C4 shows that the estimated treatment effects remain fairly similar to the baseline. Second, I directly account for the implied share of treated voters in each election year. Re-estimating equation (2) using weights proportional to the share of treated voters gives results that closely track the baseline estimates, but with greater precision (Appendix Figure C5).

Residential mobility. A potential concern with municipality-level turnout is that individuals may move across municipalities between the time they are exposed to the program in school and the time they become eligible to vote. Such mobility could weaken the mapping between the municipality of schooling, which determines treatment assignment, and the municipality of voting, which is the unit of observation. This would generate attenuation bias, making the estimated turnout effects to be interpreted as conservative.

To assess this issue, I use ISTAT administrative data on transfers of residence, previously used and documented in Rubolino and Giommoni (2023) and available over the 2007-2015 period. These data are particularly well–suited to this setting because eligibility to vote in a different municipality requires a formal transfer of residence. ISTAT records these transfers and aggregates them into origin–destination mobility flows. A limitation is that the data do not report age-specific movements. I am thus extrapolating from average mobility patterns in the population to proxy the residential reallocation of the cohorts exposed to the program.

Using these flows, I construct a mobility-adjusted measure of treatment exposure for destination municipality d at time t as

$$\widetilde{S}_{d,t} = r_d S_{d,t} + \sum_{o \neq d} \omega_{od} S_{o,t}, \tag{3}$$

where $S_{o,t}$ denotes treatment exposure in origin o, r_d is the share of residents (averaged over the period) in d who remain in d, and ω_{od} is the share of residents (averaged over the period) in destination d who originate from $o \neq d$. The term $r_d S_{d,t}$ thus captures the retained exposure of those schooled in d who are likely to still reside there at voting age, while the second term captures exposure imported through in-migration from other places.[22] Comparing esti-

[22] Because the mobility-adjusted treatment variable is continuous, the event-study is estimated using the continuous-treatment version of de Chaisemartin and D'Haultfœuille (2024). With continuous baseline treatment, the estimator assumes that the outcome evolution of untreated groups is a polynomial function of period-one treatment. I set the polynomial order to 2 as a baseline.

mates based on $\widetilde{S}_{d,t}$ with the baseline specification provides a way to assess whether internal mobility weakens the treatment effect estimate.

Appendix Figure C6 reports the corresponding event-study estimates using this mobility-adjusted treatment measure. The results are remarkably similar to the baseline unadjusted estimates, both in their dynamic pattern and in their overall magnitude. There are two main explanations for such similarity. First, mobility patterns are orthogonal to program participation: municipalities more exposed to the program are not systematically more likely to send or receive movers from similarly exposed areas.[23] Mobility thus just introduces a reshuffling of individuals across municipalities, without systematic re-sorting by treatment status.

Second, internal mobility in Italy is comparatively low, especially among young adults.[24] The modal living arrangement for Italians aged 18–29 is co-residence with parents, implying substantial residential stability well into early adulthood (Manacorda and Moretti 2006). Moreover, even when young people temporarily move for study or work, they often remain registered in their municipality of residence and, therefore, continue to vote there.

A remaining limitation is that the turnout estimates are identified over a relatively short horizon. As a result, they capture the early adult manifestation of the program's effects, but not necessarily their full long-run accumulation over the life cycle. The next section builds on these reduced-form estimates to assess what the implied effects on turnout would be over longer horizons under different assumptions on residential mobility.

6 Counterfactual Simulations

This section studies the program's long-run implications by combining the reduced form estimates with counterfactual simulations of turnout under a permanent nationwide expansion. The exercise disciplines the transition generated by cohort replacement, clarifying how quickly gains in civic capital can translate into aggregate electoral participation.

6.1 A Stylized OLG Model

I consider a simple overlapping generations (OLG) model in which individuals are young in period t and become adults at $t+1$. In each community and period, the adult population is normalized to one. In the baseline analysis, the population remains constant over time. I will relax this simplifying assumption below by allowing individuals to move across communities between youth and adulthood, so that the composition of the adult population in each community can change over time.

Adult decision. Let $\theta_{i,m,t}$ denote the civic capital of adult i living in community m at time t. Each adult chooses whether to undertake a civic action – such as voting –, denoted by

[23] A direct way to assess selective sorting is to test whether bilateral migration flows from o to d are systematically related to the treatment differential $S_{d,t} - S_{o,t}$. Conditional on origin–destination pair fixed effects and year fixed effect, the estimated coefficient is 0.052 (s.e. = 0.198), providing no statistically significant evidence that individuals disproportionately move toward municipalities with higher program exposure.

[24] ISTAT's annual report on internal migration documents some of the lowest residential mobility rates in Western Europe, with only about 2% of residents changing municipality within a given year, and mobility among youths and young adults even lower (see ISTAT, "Migrazioni interne e internazionali della popolazione residente," various years).

$a_{i,m,t} \in \{0,1\}$. Aggregate civic participation in m is then $S_{m,t} \equiv \int a_{i,m,t}\, di$.

Participation is modeled as a discrete choice. The net utility gain from acting civically is

$$\Delta u_{i,m,t}(\theta_{i,m,t}) = \kappa_t + \psi(\theta_{i,m,t}), \tag{4}$$

where k_t captures period-specific incentives to participate that are common across individuals and orthogonal to civic education. It can be interpreted as summarizing factors such as the salience of a particular election, the perceived closeness of the race, or the time costs of voting. Civic education operates by raising $\theta_{i,m,t}$, thereby increasing $\psi(\theta)$, with $\psi'(\theta) > 0$ and $\psi''(\theta) \leq 0$. An adult participates if $\Delta u_{i,m,t} \geq 0$, which yields a cutoff rule: $a_{i,m,t} = 1\{\theta_{i,m,t} \geq \theta_t^*\}$, with $\theta_t^* \equiv \psi^{-1}(-\kappa_t)$. Given the distribution $F_{m,t}$ of civic capital in community m at time t, the implied participation rate is $S_{m,t} = 1 - F_{m,t}(\theta_t^*)$.

Civic capital formation. I model civic capital as a stock formed during youth that subsequently governs adult civic behavior. Following the literature on the economics of socialization and cultural transmission (Bisin and Verdier 2001), I let civic capital reflect both vertical transmission within families and horizontal spillovers from the local environment (peers, role models, and community interactions). I assume a child born in m at time t is matched to a parent drawn at random from the adult population in m at time $t-1$. Let $\theta_{p(i),m,t-1}$ denote parental civic capital and let $e_{m,t} \in [0,1]$ denote cohort-t exposure to the civic education program in m. Youth civic capital is

$$\theta_{i,m,t}^{Y} = \rho\, \theta_{p(i),m,t-1} + \gamma\, e_{m,t} + \lambda\, G_{m,t-1} + \varepsilon_{i,m,t}, \tag{5}$$

where $\rho \in (0,1)$ captures intergenerational persistence, $\gamma \geq 0$ is the direct contribution of civic education, and $\lambda \geq 0$ governs spillovers from the local environment. For simplicity, I set $G_{m,t-1} = \bar{\theta}_{m,t-1} = \int \theta_{i,m,t-1}\, di$, so spillovers operate through average adult civic capital in the community. The idiosyncratic shock satisfies $\mathbb{E}[\varepsilon_{i,m,t}] = 0$.

Civic capital is only partially retained into adulthood. Let $\delta \in (0,1]$ denote the retention rate. Adult civic capital is then

$$\theta_{i,m,t} = \delta\, \theta_{i,m,t-1}^{Y}, \tag{6}$$

allowing for erosion of civic capital over the life cycle (see, e.g., Section 2 of Guiso et al. 2011).

Aggregation. Under random parental matching, $\mathbb{E}[\theta_{p(i),m,t-1}] = \bar{\theta}_{m,t-1}$. Taking expectations in (5) and using (6) yields the aggregate law of motion

$$\bar{\theta}_{m,t} = \underbrace{\delta(\rho+\lambda)}_{\text{persistence}}\, \bar{\theta}_{m,t-1} + \underbrace{\delta\gamma}_{\text{civic education exposure}}\, e_{m,t-1}. \tag{7}$$

This is an AR(1) process with persistence $a = \delta(\rho+\lambda)$ and program loading $b = \delta\gamma$. When a is close to one, initial differences across communities decay slowly.

Steady state and program impact. Assume $0 \leq a < 1$ and constant exposure $e_{m,t} \equiv \bar{e}_m$. Then each community has a unique steady state,

$$\bar{\theta}_m^{ss} = \frac{b\,\bar{e}_m}{1-a} = \frac{\delta\,\gamma\,\bar{e}_m}{1-\delta(\rho+\lambda)}, \tag{8}$$

and $\bar{\theta}_{m,t} \to \bar{\theta}_m^{ss}$ geometrically at rate a.

A permanent increase in exposure raises steady-state civic capital by

$$\frac{\partial \bar{\theta}_m^{ss}}{\partial \bar{e}_m} = \frac{b}{1-a} = \frac{\delta\gamma}{1-\delta(\rho+\lambda)}.$$

Thus, civic education is amplified by the place-based multiplier $1/(1-a)$ through intergenerational persistence and local spillovers. If the program is scaled uniformly so that $\bar{e}_m$ is equalized across communities, steady states coincide, and any initial civic capital gap eventually vanishes, potentially very slowly when $a \simeq 1$.

6.2 Counterfactual Simulations

This section uses the OLG model to translate the reduced form turnout effects into long-run predictions under a permanent nationwide scale-up.

Calibration. I treat observed municipality-level turnout as a noisy realization of an underlying latent index that combines civic capital and time-varying participation incentives. Specifically, assume individual civic capital is normally distributed with time-invariant dispersion (normalized to one) and normalize the participation cutoff to zero. Under these normalizations, aggregate turnout satisfies $S_{m,t} = \Phi\big(\kappa_t + \bar{\theta}_{m,t}\big)$, and $y_{m,t} \equiv \Phi^{-1}(S_{m,t}) = \kappa_t + \bar{\theta}_{m,t}$, so that the inverse-normal transformation of turnout identifies the latent index $y_{m,t}$ up to the decomposition into a common time component κ_t and a municipality-specific civic capital component $\bar{\theta}_{m,t}$.

From the aggregate law of motion in (7), turnout dynamics depend on $a \equiv \delta(\rho+\lambda)$, which captures intergenerational transmission, local spillovers, and depreciation. Because municipality-level turnout does not separately identify ρ, λ, and δ, I estimate their reduced-form composite a directly from the turnout panel. In particular, I combine the observed turnout data with the municipality-specific evolution of cohort exposure and estimate the latent-index equation

$$y_{m,\tau} = \alpha_m + \kappa_\tau + a\,y_{m,\tau-1} + b\,e_{m,\tau-1} + \varepsilon_{m,\tau},$$

where τ indexes elections, α_m are municipality fixed effects, κ_τ are election fixed effects, and $e_{m,\tau}$ is the share of the electorate in municipality m at election τ that belongs to cohorts exposed to the program while in school. The coefficient a is thus pinned down by the observed persistence of turnout across elections, while b captures the contribution of program exposure to latent civic capital.

I then recover initial conditions from the turnout data and iterate the estimated aggregate law of motion under a permanent national scale-up starting in 2026. Exposure in the adult

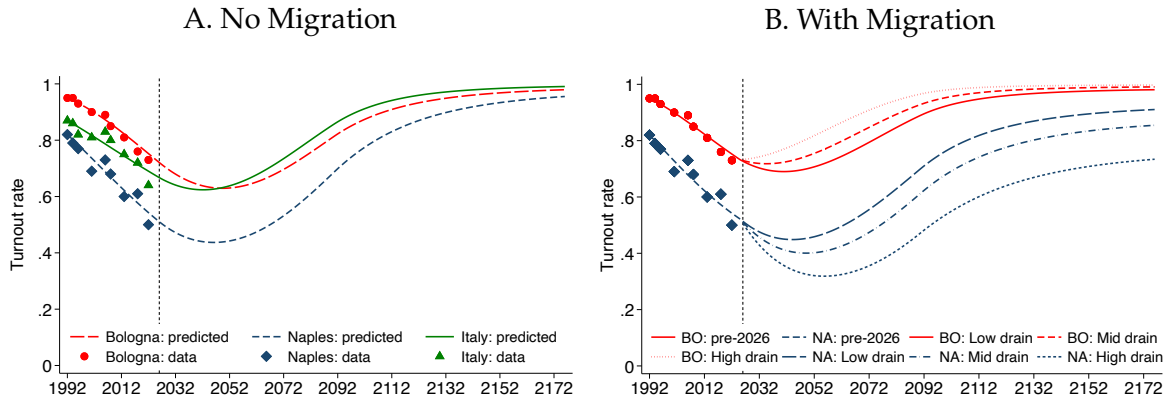
electorate increases gradually as treated cohorts reach voting age. With voting age 18 and given life expectancy is 83 in Italy (see WHO data), the electorate spans 65 age cohorts, so, under a nationwide reform, the exposed share evolves as

$$e_t = \min\left\{\max\left(\frac{t-2025}{65}, 0\right), 1\right\}.$$

I estimate the sequence κ_t to match the pre-2026 evolution of turnout and discipline b using the event-study estimate in Figure 9. Appendix E details the estimation and simulation procedure, and Table F1 reports the resulting parameter values.

Aggregate turnout under a permanent national scale-up. I first ask whether a permanent nationwide implementation can reverse Italy's secular decline in electoral participation. Panel A of Figure 10 plots the model-imputed turnout path (green solid line) together with observed election outcomes (triangle markers). Because exposed cohorts initially represent a small fraction of the adult electorate, aggregate turnout continues to decline in the decades immediately following 2026, reaching a trough around mid-century. As cohort replacement proceeds, the reform progressively offsets these headwinds and turnout recovers. Under the baseline calibration, turnout would return to the 1992 level (87%) in about a century (2093).

Figure 10: Predicted Program-Induced Change in Voter Turnout



Notes: The figure reports counterfactual turnout paths implied by the overlapping generations model under a permanent nationwide scale-up of Tax and School starting in 2026. Turnout is plotted for Bologna, Naples, and (in panel A) Italy. Markers denote observed national election turnout, used to initialize and discipline pre-2026 dynamics. Panel A assumes no migration across municipalities. Panel B introduces a "civicness drain" through directed migration from Naples to Bologna: each year, a fraction of Bologna's electorate is composed of positively selected immigrants from Naples (low, mid, high drain scenarios).

Convergence across municipalities. Civic participation is highly heterogeneous across Italian municipalities, often interpreted as reflecting persistent place-based civic traditions (Putnam 1993; Guiso et al. 2016). This raises a natural policy question: if the program is scaled uniformly, do historically rooted gaps close? I illustrate the answer with two representative cities, Bologna and Naples, which differ sharply in pre-reform turnout. Panel A of Figure 10 shows that both cities follow the same qualitative adjustment path under the national scale-

up, but convergence is slow. The Bologna–Naples gap narrows gradually as treated cohorts replace older ones, roughly halving by 2100 (from about 21 to 10 percentage points). However, convergence is still not fully achieved after 150 years since program implementation, suggesting that historically rooted gaps are difficult to close completely.

Civicness drain. The baseline model abstracts from residential mobility. Motivated by the "civicness drain" mechanism in Michaeli et al. (2023), I extend the model to allow for directed migration from low- to high-civic capital cities. Each period, a fraction $\mu \in [0,1]$ of Bologna's adult electorate is assumed to be replaced by immigrants from Naples who are positively selected on civic capital. I re-run the Bologna–Naples simulation under low ($\mu = 0.5\%$), medium ($\mu = 1.5\%$), and high ($\mu = 3\%$) drain. Panel B of Figure 10 show two patterns. First, relative to the no-migration benchmark, convergence across places becomes fragile: even moderate civic capital flows can prevent gaps from closing. Second, under high drain, spatial inequality widens sharply: Bologna converges toward near-universal participation, while turnout in Naples remains substantially lower. These simulations imply that a uniform nationwide intervention is equalizing primarily in low-mobility environments; with strong civicness drain, it may increase geographic inequality in political participation despite raising civic capital at the individual level.

7 Conclusions

In *The Moral Basis of a Backward Society*, Edward Banfield attributed the persistent underdevelopment of Montegrano – a fictitious village in the Basilicata region of southern Italy – to a cultural norm he termed amoral familism (Banfield 1958). This ethos, characterized by the prioritization of the nuclear family's immediate welfare over any collective or long-term interest, generated pervasive distrust among individuals. Suspicion ran so deep, Banfield noted, that it effectively crippled cooperation and rendered civic initiatives futile. Public life was undermined by the belief that others would always act opportunistically, thus justifying one's own lack of civic engagement. Today, the symptoms he described appear increasingly widespread, raising concerns about the global health of civic life (Dalton 2017).

This paper examines whether policy interventions can shape civic behavior and, in turn, affect community-level outcomes. I study the Tax and School program, a nationwide civic education initiative jointly implemented by the Italian Revenue Agency and the Ministry of Education. The program exposes students to principles of legality, fairness, and solidarity through classroom activities, interactions with tax officials, and civic projects. To identify its causal effects, the analysis exploits the staggered rollout of the program across municipalities using an event-study design.

The results show that program exposure significantly reduces cheating in low-stakes standardized exams and discourages antisocial behavior. These effects are strongest in disadvantaged schools and in environments where teachers and parents actively reinforce the program's civic messages. As treated cohorts reach adulthood, municipalities exposed to the program experience a persistent increase in voter turnout in national elections and become more likely to implement more progressive taxes, consistent with civic education increas-

ing demand for redistribution and strengthening the perceived legitimacy of taxation as a collective investment.

Counterfactual simulations suggest that a permanent nationwide scale-up would gradually increase voter turnout through cohort replacement, with significant gains materializing after a few decades. In the long run, uniform exposure is equalizing in a low-mobility environment: historically rooted turnout gaps across municipalities narrow and eventually vanish as civic capital converges. However, allowing for a "civicness drain" can substantially weaken convergence and amplify geographic inequality in participation by reallocating civic capital toward already high-civic areas.

These findings suggest that civic norms are not exclusively shaped by slow-moving historical forces, but retain a malleable component that can be influenced through public policy. From a policy perspective, these findings underscore the potential of civic education as a low-cost investment in strengthening democratic institutions. The Tax and School program has already inspired the European Union's TAXEDU campaign, which targets different age groups with age-appropriate narratives and interactive materials to promote understanding of taxes, public goods, and civic responsibility. Similar to the Italian program, TAXEDU emphasizes who pays taxes, how revenues are used, and why compliance and fairness are essential for social cohesion. A promising avenue for future research is to assess whether these types of interventions ultimately translate into higher actual tax compliance later in life. Establishing whether early civic education affects tax behavior in adulthood is crucial to assessing the long-term fiscal returns of such interventions.

References

Aghion, P., Algan, Y., Cahuc, P., and Shleifer, A. (2010). Regulation and Distrust. *Quarterly Journal of Economics*, 125(3):1015–1049. 4

Agostinelli, F., Avitabile, C., and Bobba, M. (2025). Enhancing Human Capital in Children: A Case Study on Scaling. *Journal of Political Economy*, 133(2):455–491. 2, 11

Ajzenman, N. (2021). The Power of Example: Corruption Spurs Corruption. *American Economic Journal: Applied Economics*, 13(2):230–257. 2, 9

Alan, S. (2025). Shaping Society's Character: The Role of Schools in Developing Social and Emotional Skills. In Enke, B., Giuliano, P., Nunn, N., and Wantchekon, L., editors, *Handbook of Culture*. 2, 6

Alan, S., Carlana, M., and Leone, M. (2025). Inclusive Teaching: Spotting Social Isolation in the Classroom. *American Economic Journal: Economic Policy*, (forthcoming). 2, 13

Alesina, A. and Giuliano, P. (2011). Preferences for Redistribution. In Benhabib, J., Bisin, A., and Jackson, M., editors, *Handbook of Social Economics*, volume 1, chapter 4, pages 93–131. Elvesier, North Holland. 3

Alesina, A. and Giuliano, P. (2015). Culture and Institutions. *Journal of Economic Literature*, 53(4):898–944. 4

Alesina, A., Glaeser, E., and Sacerdote, B. (2001). Why Doesn't the United States Have a European-Style Welfare State? *Brookings Papers on Economic Activity*, (2):187–277. 3

Algan, Y., Cahuc, P., and Sangnier, M. (2016). Trust and the Welfare State: the Twin Peaks Curve. *Economic Journal*, 126(593):861–883. 3, 11

Algan, Y., Cahuc, P., and Shleifer, A. (2013). Teaching Practices and Social Capital. *American Economic Journal: Applied Economics*, 5(3):189–210. 2, 4, 13

Anderson, M. L. (2008). Multiple Inference and Gender Differences in the Effects of Early Intervention: A Reevaluation of the Abecedarian, Perry Preschool, and Early Training Projects. *Journal of the American Statistical Association*, 103(484):1481–1495. 11

Angrist, J. D., Battistin, E., and Vuri, D. (2017). In a Small Moment: Class Size and Moral Hazard in the Italian Mezzogiorno. *American Economic Journal: Applied Economics*, 9(4):216–249. 2, 9, 14

Bandura, A. (1977). *Social Learning Theory*. Prentice Hall, Englewood Cliffs, NJ. 5

Banfield, E. (1958). *The Moral Basis of a Backward Society*. The Free Press, Glencoe, IL. 4, 32

Bisin, A. and Verdier, T. (2001). The Economics of Cultural Transmission and the Dynamics of Preferences. *Journal of Economic Theory*, 97(2):298–319. 29

Briole, S., Gurgand, M., Maurin, E., McNally, S., Ruiz-Valenzuela, J., and Santín, D. (2025). The Making of Civic Virtues: A School-Based Experiment in Three Countries. *American Economic Journal: Economic Policy*, 17(3):496–521. 1, 4, 5

Butler, J., Giuliano, P., and Guiso, L. (2016). Trust and Cheating. *Economic Journal*, 126(595):1703–1738. 12

Cagé, J. (2024). Political Inequality. *Annual Review of Economics*, 16(1):455–490. 1

Cagé, J. and Piketty, T. (2025). *A History of Political Conflict: Elections and Social Inequalities in France, 1789–2022*. Harvard University Press, Cambridge, MA. 1

Campbell, D. E. (2019). What Social Scientists Have Learned About Civic Education: A Review of the Literature. *Peabody Journal of Education*, 94(1):32–47. 1, 4

Cohodes, S. and Feigenbaum, J. (2025). Why Does Education Increase Voting? Evidence from Boston's Charter Schools. *Review of Economics and Statistics*, forthcoming. 4, 26

Cunha, F., Heckman, J. J., and Schennach, S. M. (2010). Estimating the Technology of Cognitive and Noncognitive Skill Formation. *Econometrica*, 78(3):883–931. 4

Dalton, R. J. (2017). *The Participation Gap: Social Status and Political Inequality*. Oxford University Press. 32

de Chaisemartin, C. and D'Haultfœuille, X. (2024). Difference-in-Differences Estimators of Intertemporal Treatment Effects. *Review of Economics and Statistics*, (forthcoming):1–45. 13, 20, 27, 91

Dee, T. S. (2004). Are There Civic Returns to Education? *Journal of Public Economics*, 88(9-10):1697–1720. 4

Dewey, J. (1915). *The School and Society*. University of Chicago Press. 4

Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., and Schellinger, K. B. (2011). The Impact of Enhancing Students' Social and Emotional Learning: A Meta-Analysis of School-Based Universal Interventions. *Child Development*, 82(1):405–432. 2, 16

Fisman, R. and Miguel, E. (2007). Corruption, Norms, and Legal Enforcement: Evidence from Diplomatic Parking Tickets. *Journal of Political Economy*, 115(6):1020–1048. 2

Guiso, L., Sapienza, P., and Zingales, L. (2011). Civic Capital as the Missing Link. In Benhabib, J., Bisin, A., and Jackson, M. O., editors, *Handbook of Social Economics*, volume 1, pages 417–480. Elsevier B.V. 1, 2, 4, 29

Guiso, L., Sapienza, P., and Zingales, L. (2016). Long-term Persistence. *Journal of the European Economic Association*, 14(6):1401–1436. 2, 4, 31

Jackson, C. K. (2018). What Do Test Scores Miss? The Importance of Teacher Effects on Non–Test Score Outcomes. *Journal of Political Economy*, 126(5):2072–2107. 2, 13

Jacob, B. A. and Levitt, S. D. (2003). Rotten Apples: An Investigation of the Prevalence and Predictors of Teacher Cheating. *Quarterly Journal of Economics*, 118(3):843–877. 9

Kaplan, E., Spenkuch, J., and Tuttle, C. (2025). From the Classroom to the Ballot Box: Turnout and Partisan Consequences of Education. *NBER Working Paper No. 34355*. 3, 4, 26

Kleven, H. J. (2014). How Can Scandinavians Tax So Much? *Journal of Economic Perspectives*, 28(4):77–98. 3

Kohlberg, L. and Hersh, R. H. (1977). Moral Development: A Review of the Theory. *Theory Into Practice*, 16(2):53–59. 5

Kosse, F., Deckers, T., Pinger, P., Schildberg-Hörisch, H., and Falk, A. (2020). The Formation of Prosociality: Causal Evidence on the Role of Social Environment. *Journal of Political Economy*, 128(2):434–467. 2, 16

Langton, K. P. and Jennings, M. K. (1968). Political Socialization and the High School Civics Curriculum in the United States. *American Political Science Review*, 62(3):852–867. 4, 16

Luttmer, E. G. and Singhal, M. (2014). Tax Morale. *Journal of Economic Perspectives*, 28(4):149–168. 1, 2

Manacorda, M. and Moretti, E. (2006). Why Do Most Italian Youths Live with Their Parents? Intergenerational Transfers and Household Structure. *Journal of the European Economic Association*, 4(4):800–829. 28

Michaeli, M., Casari, M., Ichino, A., De Paola, M., Marandola, G., and Scoppa, V. (2023). Civicness Drain. *Economic Journal*, 133(649):323–354. 3, 32

Milligan, K., Moretti, E., and Oreopoulos, P. (2004). Does Education Improve Citizenship? Evidence from the United States and the United Kingdom. *Journal of Public Economics*, 88(9-10):1667–1695. 4

Oreopoulos, P. and Salvanes, K. G. (2011). Priceless: The Nonpecuniary Benefits of Schooling. *Journal of Economic Perspectives*, 25(1):159–184. 4

Paccagnella, M. and Sestito, P. (2014). School Cheating and Social Capital. *Education Economics*, 22(4). 2

Petek, N. and Pope, N. G. (2023). The Multidimensional Impact of Teachers on Students. *Journal of Political Economy*, 131(4):1057–1107. 2, 13

Putnam, R. (1993). *Making Democracy Work: Civic Tradition in Modern Italy*. Princeton, N.J.: Princeton University Press. 1, 2, 3, 4, 31

Quintano, C., Castellano, R., and Longobardi, S. (2009). A Fuzzy Clustering Approach to Improve the Accuracy of Italian Student Data. An Experimental Procedure to Correct the Impact of Outliers on Assessment Test Scores. *Statistica e Applicazioni*, 7(2):149–171. 9, 74

Rubolino, E. (2023). Does Weak Enforcement Deter Tax Progressivity? *Journal of Public Economics*, 219:104833. 3, 22, 72

Rubolino, E. and Giommoni, T. (2023). Taxation and Mobility: Evidence from Tax Decentralization in Italy. *CESifo Working Paper No. 10655*. 11, 27, 72

Saez, E. (2021). Public Economics and Inequality: Uncovering Our Social Nature. *American Economic Association: Papers & Proceedings, AEA Distinguished Lecture*, 111:1–26. 1

Sondheimer, R. M. and Green, D. P. (2010). Using Experiments to Estimate the Effects of Education on Voter Turnout. *American Journal of Political Science*, 54(1):174–189. 4

Stantcheva, S. (2021). Understanding Tax Policy: How Do People Reason? *Quarterly Journal of Economics*, 136(4):2309–2369. 3

Online Appendix

A Tax and School Program

A1 Memorandum of Understanding Between the Ministry of Education and the Italian Revenue Agency

This Appendix reports the Memorandum of Understanding (translated by the author; available in Italian at this link) between the Ministry of Education and the Italian Revenue Agency, signed on the 6th of May 2004.[1]

WHEREAS

A. Information, telematic, and multimedia technologies represent a fundamental factor in the major transformations currently underway in the "knowledge society";

B. In the knowledge society, processes and techniques for communication and for acquiring information and knowledge are increasingly decisive for the growth of industry, services, culture, and society as a whole;

C. The ability to use new technologies, in addition to being a necessary condition for individuals to integrate and actively participate in the country's social development, provides the education and training system with a direction of primary importance;

D. New technologies offer, particularly to young people with disabilities, a differentiated range of aids (both software and hardware) that are advanced, continuously evolving, and particularly accessible and usable even by individuals with severe disabilities;

E. It is necessary to promote and strengthen training processes targeted at adults, to whom, in accordance with the "Pact for Italy," appropriate interventions should be directed;

F. It is necessary to design training models capable of harmonizing technical skills with communication and motivational aspects, with a view to full educational and social integration and future labor market inclusion;

G. Teachers must be provided with effective opportunities for professional development so that they may acquire solid competencies and greater autonomy both in the use of technological tools in school settings – particularly in support of the full inclusion of students with disabilities – and in the management of individualized educational plans.

CONSIDERING THAT

The Ministry of Education, University and Research

- Is tasked with promoting, in schools of all levels, initiatives supporting education for citizenship and civic coexistence, in order to foster among students the development

[1] This agreement remained valid for the first three years of the program (2004-2006). See the Italian Revenue Agency website for subsequent renewals.

of personal identity and awareness of being holders of rights and duties within a social and civic community, where the value of solidarity also finds expression in shared, compulsory, and voluntary forms of contribution;

- Is engaged in a broad and comprehensive reform project aimed at didactic and organizational innovation within the school system and at providing a high-quality educational offer aligned with the innovative trends of society;
- Intends to promote in schools an understanding of the ethical and cultural value of taxation as a redistributive instrument of well-being produced by a community founded on the principles of solidarity, tolerance, and respect for oneself and others;
- Seeks to support, through its organizational structure, the design and implementation of activities aimed at disseminating fiscal knowledge from a legal, organizational, and operational perspective, with the goal of integrating educational pathways that may constitute best practices within civic education;
- Supports, from early childhood onward, the education and training of younger generations so that they may become individuals endowed with knowledge, competencies, and abilities appropriate to the needs of a society striving to strengthen citizens' guarantees through their participation;
- Is committed to supporting the development of the knowledge and information society, the promotion of entrepreneurship, and the widespread diffusion and use of information and communication technologies.

The Italian Revenue Agency

- Intends to foster the development of civic consciousness among citizens by encouraging awareness of the importance of their contribution to public expenditure;
- Aims, in particular, to improve fiscal knowledge among younger generations through a project that enables greater involvement of families – both individually and collectively – and educational institutions on issues related to civic duties;
- Is engaged in nationwide communication and information activities aimed at improving relations with citizens;
- Recognizes the importance of cooperating with the school system in order to promote a relationship based on transparency and knowledge;
- Intends to provide teachers with appropriate tools to address any theoretical or practical issues that may arise.

IT IS HEREBY AGREED AS FOLLOWS

Article 1 The Ministry of Education, University and Research (hereinafter "MIUR") and the Italian Revenue Agency undertake to promote and develop forms of collaboration aimed at the promotion and dissemination of information and training initiatives related to the "Tax and School" (*Fisco e Scuola*) project.

Article 2 In agreement with MIUR, the Italian Revenue Agency shall create, manage, and update an Internet website entitled "Entrate in classe," modeled after `agenziaentrate.gov.it`, designed to provide primary and secondary school students with an accessible introduction to the world of taxation.

Article 3 MIUR and the Italian Revenue Agency undertake to support local meetings involving schools or networks of schools, bringing together teachers and experts from the tax administration, with the aim of promoting dialogue and collaboration in order to:

- design information and training pathways;
- implement initiatives that progressively promote the involvement of students, teachers, and parents;
- organize guided visits to tax offices;
- arrange internships for students within work-based learning pathways;
- provide interested schools with informational materials;
- raise young people's awareness of fiscal issues, including through the use of the "Entrate in classe" website;
- promote information and engagement among parents, both individually and collectively.

Article 4 MIUR undertakes to assess the possibility of introducing fiscal education within the second cycle of secondary education and to encourage the dissemination of principles of tax compliance and correctness.

Article 5 The Italian Revenue Agency, in agreement with MIUR and within the framework of the "Entrate in classe" website, shall promote the establishment of a coordination center for the simulation of tax administration functions, named "Simuentrate," intended for students participating in the MIUR project "Telematic Network of Simulated Training Enterprises."

Article 6 The Italian Revenue Agency also undertakes to support Higher Technical Education and Training pathways by providing educational and informational contributions related to fiscal matters, particularly concerning its institutional activities in tax management, auditing, and taxpayer assistance.

Article 7 Within the "Entrate in classe" project, a dedicated space shall be reserved for Permanent Territorial Centers for Adult Education, including both the publication of targeted materials and a specific online section.

Article 8 The Parties, recognizing that new educational and distance-learning technologies constitute an important tool for didactic innovation and for improving learning processes, undertake to support initiatives that promote their use.

Any additional topics related to the promotion of the "Tax and School" project may be identified during the validity period of this agreement, without requiring formal amendments.

This agreement shall remain valid for a period of three years from the date of its signing.

Signed in Rome, 6 May 2004.

For the Ministry of Education, University and Research
The Head of Department
Dr. Pasquale Capo

For the Italian Revenue Agency
The Director
Attorney Raffaele Ferrara

Signatures replaced by printed names pursuant to Article 3, paragraph 2, of Legislative Decree No. 39 of 1993.

A2 Project "Dear Mayor, I'd Like To Tell you..."

"Dear Mayor, I'd Like to Tell You" (*Caro Sindaco, vorrei dirti...*) is an initiative promoted within the Tax and School program to encourage students to reflect on the ethical and social value of taxation. Students are asked to develop a proposal to improve or enhance their municipality, explicitly framing the project as something that could be financed through tax revenues, and to address it symbolically to their mayor.

Schools submit projects that articulate local public needs and propose policy responses using a wide range of expressive formats, including letters, posters, photographs, comics, songs, and videos. The initiative culminates in a public exhibition and award ceremony organized by the Tax Agency, during which selected projects are formally presented and recognized locally.

For example, Figure A1 presents the event that took place on June 12, 2025, where winning schools were awarded at a public ceremony held at the "De Lucia" Hall of the Regional Directorate of Campania, with prizes assigned across primary, lower-secondary, and upper-secondary education levels, alongside special mentions. These events are public, institutionally sponsored, and covered by local media, thereby increasing the visibility of students' proposals and their engagement with local public finance.

Figure A1: Pictures from the Dear Mayor Event in 2025

Notes: The figure reports three photographs from the award ceremony held on June 12, 2025, at the "De Lucia" Hall of the Regional Directorate of Campania. The event concluded the "*Caro Sindaco...*" competition, in which participating schools developed projects aimed at enhancing their municipality and explicitly framed these initiatives as financed through tax and contribution revenues. Students presented their proposals using posters, videos, and other expressive formats. Prizes were awarded to the Istituto Comprensivo Capol D. D. di San Nicola la Strada (CE) for primary schools, the Istituto Comprensivo Raffaele Calderisi di Villa di Briano (CE) for lower-secondary schools, and the Istituto Carlo Alberto Dalla Chiesa di Afragola (NA) for upper-secondary schools. Special mentions were assigned to the Istituto Comprensivo A. Gatto di Battipaglia (SA) and the Istituto Comprensivo Pignataro-Camigliano di Pignataro Maggiore (CE).

A3 Examples of Teaching Material: *The Adventures of the Tax Team*

This appendix describes the content and pedagogical structure of *The Adventures of the Tax Team*, an illustrated comic booklet developed by the Italian Revenue Agency and used within the Tax and School program. The material is targeted at primary school students and adopts the visual and narrative language of superhero comics to introduce fundamental concepts related to taxation, public goods, legality, and constitutional principles.

The comic booklet and the cartoon can be downloaded from my Google Drive page upon request:

- Comic booklet: link.
- Video: link.

Main storyline. The core narrative revolves around a group of superhero-like characters who intervene to restore order in a city undermined by tax evasion. The story opens with a group of children anticipating a new adventure, which provides the narrative frame for an imaginative transition into a fictional world threatened by the villain *Doctor Evasion*. The antagonist is initially portrayed as popular because he allows people to keep more money by not paying taxes, a choice that appears attractive in the short run.

A narrative flashback explains how widespread tax evasion gradually erodes the city's ability to provide essential services. As public revenues decline, hospitals, schools, public transport, and law enforcement services deteriorate or become inaccessible. The illustrations depict hospitals introducing payment counters, malfunctioning school buses, sporadic police interventions, and collapsing urban infrastructure, visually linking tax evasion to declining collective welfare.

As the crisis deepens, citizens protest, emphasizing that services such as healthcare, education, and security had always been public and accessible to all. The narrative then returns to the present ("*And here we are today*"), where Doctor Evasion publicly admits that his idea was disastrous. At this point, the Tax Team enters the scene to confront the villain and re-establish the rules of civic coexistence.

Civic messages conveyed. The central civic message of Fiscomix is that paying taxes is a constitutional duty and a collective investment that enables public goods and social equity. This message is articulated along three main dimensions.

First, the *relationship between taxation and public services*. The comic explicitly contrasts a world without taxes – characterized by the breakdown of services and rising inequality – with one in which taxes finance universal access to hospitals, schools, transport, and public safety. A clear conceptual distinction is introduced between "free" and "public": "free" is framed as a personal gift, whereas "public" refers to goods and services made available to everyone thanks to collective contributions.

Second, *legality and fairness*. The members of the Tax Team personify key civic values – legality, respect, and equity – which are explicitly labeled beneath each character. Their mission is described as "restoring the rules" and ensuring that "everyone must pay taxes according to their ability," directly invoking the principle of vertical equity.

Third, the *constitutional foundations of taxation*. The conflict culminates in a symbolic appeal to the Italian Constitution, personified as a crowned figure who intervenes decisively in the confrontation with Doctor Evasion. Article 53 of the Constitution is explicitly cited and visually dramatized as a "superpower," affirming that *all citizens must contribute to public expenditures according to their capacity to pay and that the tax system is based on progressivity*.

Examples and visual devices. The pedagogical strategy relies heavily on visual storytelling and concrete examples. Key illustrations include:

- The depiction of Doctor Evasion being celebrated before the consequences of tax evasion become apparent, illustrating the short-term appeal of noncompliance.

- Hospital scenes with payment counters and patients waiting in line, linking tax evasion to reduced access to healthcare.
- Images of police interventions and crime scenes, emphasizing the dependence of public safety on public funding.
- The deterioration of schools and public transport, including classroom dialogues clarifying that public schools are financed collectively.
- Protest scenes with workers and citizens holding signs defending public services, highlighting the distributive consequences of evasion, especially for poorer households.
- Comparative panels stating "If we do not pay taxes" versus "If we pay taxes," which visually summarize the social trade-offs.
- Interactive elements such as word searches and crossword puzzles, which reinforce key concepts – Constitution, taxes, public services, and legality – through active learning.

The booklet concludes with explanatory pages that define the role of the Italian Revenue Agency, explain the constitutional basis of taxation, linking the fictional narrative back to real-world institutions.

A4 Examples of Teaching Material: *The Castaways on the Unknown Island*

This appendix describes the content and pedagogical structure of the illustrated story *The Castaways on the Unknown Island* (*I Naufraghi nell'Isola Sconosciuta)*, an educational booklet produced by the Italian Revenue Agency and used within the Tax and School program. The material is designed for primary school students and uses an allegorical narrative to introduce core concepts of civic life, the role of the state, public goods provision, and progressive taxation.

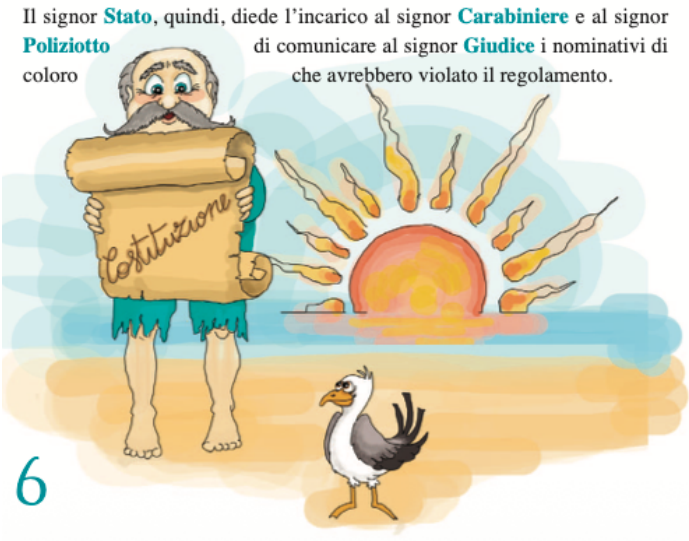
The booklet can be downloaded from my Google Drive page upon request at this link.

Main storyline. The story follows a group of heterogeneous individuals who survive a shipwreck and find themselves stranded on an unknown island. The characters are deliberately stylized and named according to their social or economic condition (e.g., *Mr. Rich*, *Mr. Poor*, *Mr. Thief*, *Mr. Unemployed*), a device that allows children to immediately associate roles and behaviors with social categories.

In the initial phase, cooperation emerges spontaneously. The survivors work together to satisfy basic needs such as shelter, food, and water, drawing on the island's natural resources. As time passes and permanence on the island becomes likely, social tensions arise.

The absence of rules, enforcement, and shared institutions leads to conflict over land, insecurity, and the domination of the strongest. Visuals emphasize disorder and inequality: larger houses encroach on others' land, while Mr. Thief openly steals without fear of punishment, standing next to powerless law enforcers (Mr. *Police Officer*), who explicitly state that, in the absence of laws, courts, and a salary, they cannot act.

Recognizing that life without rules is unsustainable, the community convenes an assembly and appoints a leader, *Mr. State*, portrayed as an elderly, wise figure. He proposes a set of fundamental rules – explicitly labeled the Constitution – and outlines the construction of core public institutions: a hospital, a free school, roads, a court, and a prison. The illustration on this page visually centers the Constitution as a scroll, symbolically anchoring the new social order.



Civic messages conveyed. The central civic message is that collective well-being requires formal institutions financed through shared contributions. The story emphasizes three interrelated principles.

First, *the necessity of the state and the rule of law*. The contrast between the chaotic early phase and the orderly society under Mr. State highlights that individual effort alone is insufficient to guarantee security, fairness, and access to essential services. Law enforcement and justice are presented as public goods that require both rules and resources.

Second, *solidarity and social insurance*. The narrative introduces pensions, unemployment benefits, and disability allowances through concrete characters (*Mr. Elderly*, *Mr. Unemployed*, *Mr. Disabled*), each accompanied by illustrations depicting vulnerability and dependence. The message is that a "civil society" is defined by its willingness to support members facing adverse circumstances, not by short-sighted self-interest.

Third, the logic of *taxation and progressivity*. A pivotal moment occurs when Mr. State asks "who pays?". This question is visually emphasized by the concerned reactions of wealthier characters. Subsequent debates illustrate common objections to taxation, including proposals to eliminate services that do not directly benefit oneself (e.g., abolishing schools, suggested by Miss Unmarried). These arguments are countered by Mr. Enlightened, who explains positive externalities and intergenerational benefits, in particular that today's students become tomorrow's doctors, engineers, and judges.

The story culminates in the explicit endorsement of *ability-to-pay* taxation. The final rule of the Constitution states: "those who have more money should pay more," visually reinforced by an illustration showing individuals contributing different amounts. Tax compliance, income reporting, and enforcement are personified through *Mr. Tax Authority* and *Mr. Tax Collector*, framing taxation as a transparent and collective mechanism rather than arbitrary extraction.

Examples and visual pedagogy. Throughout the booklet, illustrations play a central pedagogical role. Key examples include:

- The shipwreck and storm imagery, which establish a shared shock and justify the need

for cooperation.

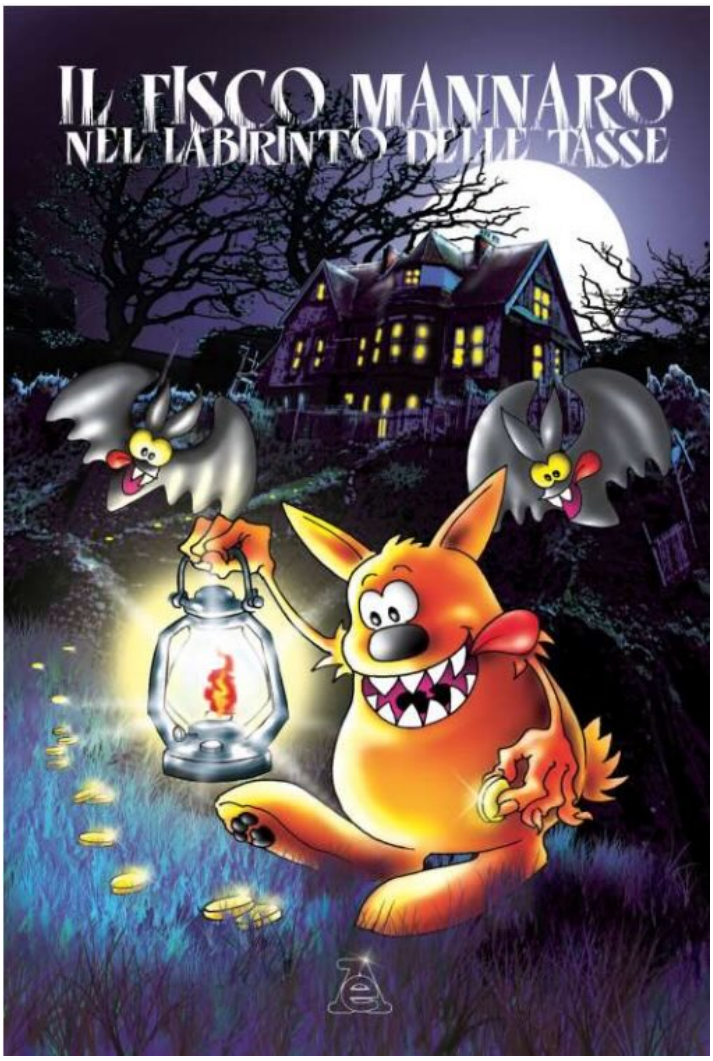
- The progression from leaf huts to stone houses, visually signaling the transition from emergency to permanent settlement.
- The juxtaposition of Mr. Thief and ineffective law enforcement, making the absence of institutions tangible.
- The Constitution scroll and sunrise, symbolizing legitimacy and collective rebirth.
- Family-based depictions of beneficiaries of social transfers, designed to elicit empathy.
- The debate over schools, illustrated through children and thought bubbles that visualize long-term consequences.
- The final images of orderly houses and shared prosperity, reinforcing the idea that taxes are "money well spent in everyone's interest."

Overall, the teaching material uses a simple narrative structure, archetypal characters, and vivid illustrations to translate abstract fiscal and civic concepts into concrete, morally charged situations that are accessible to young students.

A5 Examples of Teaching Material: *The Tax Werewolf in the Labyrinth of Taxes*

This appendix describes the content and pedagogical approach of The Tax Werewolf in the Labyrinth of Taxes, an illustrated educational booklet for primary schools produced within the Tax and School initiative. The material adopts a fantasy–comic style and uses an extended allegory to introduce children to the meaning of taxes, public goods, fiscal fairness, and tax compliance.

The booklet can be downloaded from my Google Drive page upon request at this link.



Main storyline. The central character is the *Tax Werewolf*, a friendly monster who guides children through a symbolic "labyrinth of taxes." The story opens with a playful and slightly mysterious atmosphere, evoked by night scenes, bats, and winding paths, which frame taxation as something often perceived as obscure or intimidating. The labyrinth metaphor recurs throughout the booklet, visually reinforcing the idea that taxes can seem complex but are navigable with the right guidance.

At the start of the journey, the booklet explains in simple terms what taxes are: money that each person contributes, in different amounts, to support collective needs. The Tax

Werewolf is presented as the "guardian of taxes," who does not eat people but "eats money" to transform it into useful goods and services. This framing immediately distances taxation from punishment and redefines it as a constructive and process.

The narrative then proceeds through a sequence of everyday situations – eating, using public services, playing in parks, going to school – in which the Tax Werewolf intervenes to explain how taxes are collected and why they are necessary. The story repeatedly contrasts a functioning society, sustained by taxes, with dystopian scenarios in which taxes disappear and social life collapses.

Civic messages conveyed. The primary civic message of the booklet is that taxes are a collective tool that enables shared well-being and social cooperation. This message is articulated through several complementary principles.

First, the *link between taxes and public goods*. Taxes are portrayed as the financial source of a wide range of services and infrastructures that benefit everyone, including schools, hospitals, playgrounds, roads, public lighting, police, and emergency services. These connections are made explicit through visual metaphors – such as taxes flowing through pipes into cities and buildings – and through scenes depicting parks, sports fields, and public spaces made possible by collective funding.

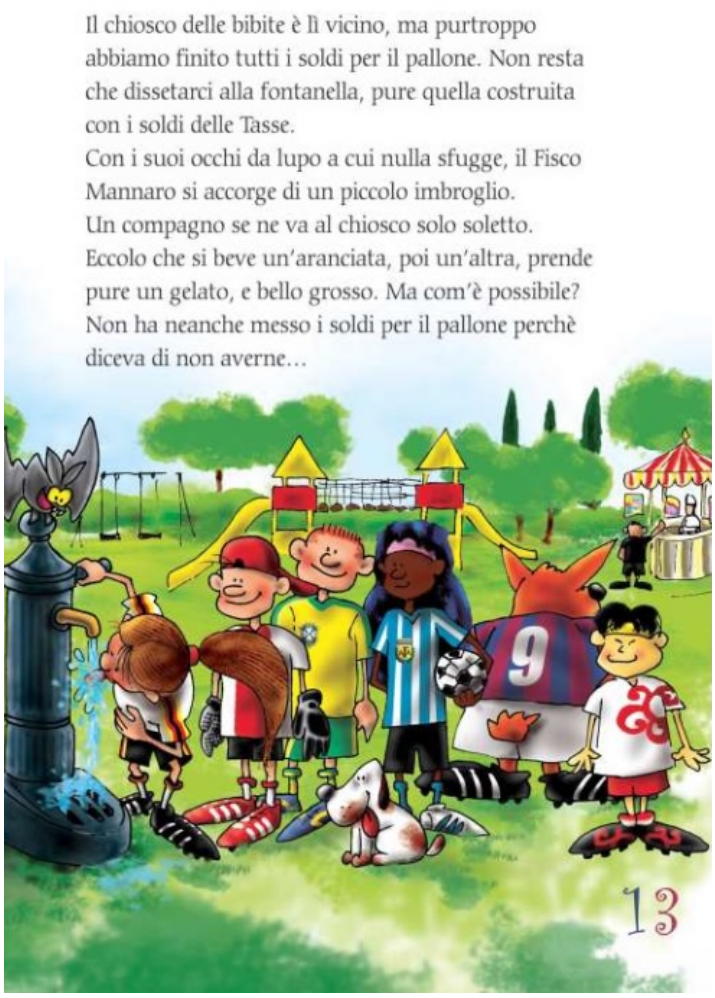
Second, the *idea of fairness and ability to pay*. A dedicated section introduces the concept of ability to pay, explaining that not everyone pays the same amount and that those who have more contribute more. This principle is illustrated through exaggerated piles of coins

and characters with different levels of wealth, visually reinforcing progressivity as a fair and constitutional rule rather than an arbitrary imposition.

Third, the *importance of compliance and honesty*. The booklet addresses tax evasion through metaphorical antagonists – bullies, monsters, and deceitful characters – who try to avoid paying taxes or refuse to issue receipts. These behaviors are associated with disorder, conflict, and the breakdown of trust. By contrast, asking for a fiscal receipt is framed as a simple but powerful civic act that helps defeat the "bullies of taxes."

Examples and visual devices. The educational strategy relies heavily on vivid illustrations and concrete analogies. Key examples include:

- The metaphor of digestion and the bathroom, where taxes are compared to food that must be processed before producing something useful, helping children grasp an abstract concept through bodily experience.
- Apocalyptic images of cities collapsing, hospitals closing, and services disappearing in a world without taxes, which visually dramatize the collective consequences of non-



contribution.

- Scenes of children playing in parks and on sports fields funded by taxes, reinforcing the idea that even leisure spaces depend on public resources.
- The football match and snack episode, which illustrates informal sharing, small acts of fairness, and the social tensions that arise when someone takes more than their share.
- The "hunt" for tax evaders using the tax identification code, where fiscal identification is likened to footprints in a maze, turning a technical concept into an engaging detective story.
- The recurring image of the receipt as a civic weapon against tax evasion, culminating in action scenes where honesty symbolically defeats wrongdoing.
- The final panoramic illustration depicting a lively town full of services, shops, and citizens, synthesizing the message that widespread compliance sustains a vibrant community.

The booklet concludes by returning to the labyrinth metaphor, reinforcing the idea that understanding taxes requires effort but ultimately leads to clarity and shared benefits.

CAPACITA' CONTRIBUTIVA

Tutti devono pagare le Tasse ma non tutti allo stesso modo. Qualcuno ne paga di più e altri di meno. Lo dice la più importante Legge dello Stato: la Costituzione.
Quello che determina quanti soldi mettere nella ciotola del Fisco Mannaro è la "Capacità Contributiva" di ognuno di noi.
Proviamo a spiegarlo con un esempio.

Vi sembrerebbe giusto che Paperon de Paperoni, con i suoi depositi pieni di dollari, le sue fabbriche, le sue industrie, le sue miniere, i suoi pozzi di petrolio... mettesse gli stessi soldi di Paperino che invece non possiede nulla, nemmeno la casa dove vive perché anche quella appartiene allo zio Paperone?
Paperone ha una capacità contributiva gigantesca, smisurata, pazzesca, e perciò pagherà molte tasse. Paperino invece non ne ha nessuna. A lui il Fisco Mannaro non prenderà i soldi, ma gli darà un aiuto per mantenere Qui, Quo e Qua, i suoi nipotini.

A6 Examples of Teaching Material: *"Pag & Tax in the Land of Rules"*

This appendix describes the content and educational structure of "*Pag & Tax in the Land of Rules*", an illustrated comic produced by the Italian Revenue Agency within the Tax and School program and targeted at primary school students. The material combines narrative storytelling and didactic panels to introduce basic concepts of rules, legality, taxation, and civic responsibility in an age-appropriate format.

The booklet can be downloaded from my Google Drive page upon request at this link.

Main storyline. The comic is set in a fictional place called the Land of Rules, where two characters – Pag and Tax – guide readers through an educational journey focused on how societies function when rules are respected. The opening pages invite students to "meet all the characters we will encounter in this adventure" and explicitly frame the story as an exploration of how people "live well when everyone behaves correctly".

The story unfolds as a sequence of encounters and explanations embedded in the fictional setting. Pag and Tax act as narrators and guides, directly addressing the reader and introducing key institutions and concepts. Early pages include a direct message from the Italian Revenue Agency explaining why it engages with schools and emphasizing young people's sensitivity to social issues and legality.

Civic messages conveyed. The central civic message of the comic is that a well-functioning society depends on shared rules and on citizens' willingness to respect both rights and duties, including fiscal duties. This message is articulated through three main dimensions.

- First, *the primacy of rules and the Constitution*. The comic introduces the distinction between norms, laws, and the Constitution, defining the Constitution as the fundamental law of the State that establishes rights, duties, and the organization of institutions.

1

NORMA
Regola di condotta, stabilita da autorità o fondata sulla tradizione, che guida il comportamento dei singoli o della collettività.

LEGGE
Norma di condotta stabilita dallo Stato che va rispettata da tutti i membri della società. In Italia l'organo preposto all'emanazione delle leggi è il Parlamento.

COSTITUZIONE
E' la legge fondamentale dello Stato entrata in vigore il 1° gennaio 1948. E' formata da 139 articoli e stabilisce diritti e doveri di tutti i cittadini e l'organizzazione delle istituzioni del nostro Paese.

CONTRIBUENTE
È il cittadino che partecipa alle spese dello Stato attraverso il pagamento delle imposte e delle tasse dovute.

CAPACITA' CONTRIBUITIVA E PROGRESSIVITA'
Lo Stato non chiede la stessa quota a tutti i contribuenti, ma una quota che cresce progressivamente, cioè mano a mano, con l'aumentare della capacità contributiva ossia del reddito.
In pratica, chi ha un reddito maggiore, cioè guadagna o possiede di più, paga più tasse. Chi ha minori possibilità economiche, invece, paga di meno e chi non ha nulla non paga affatto.

6

7

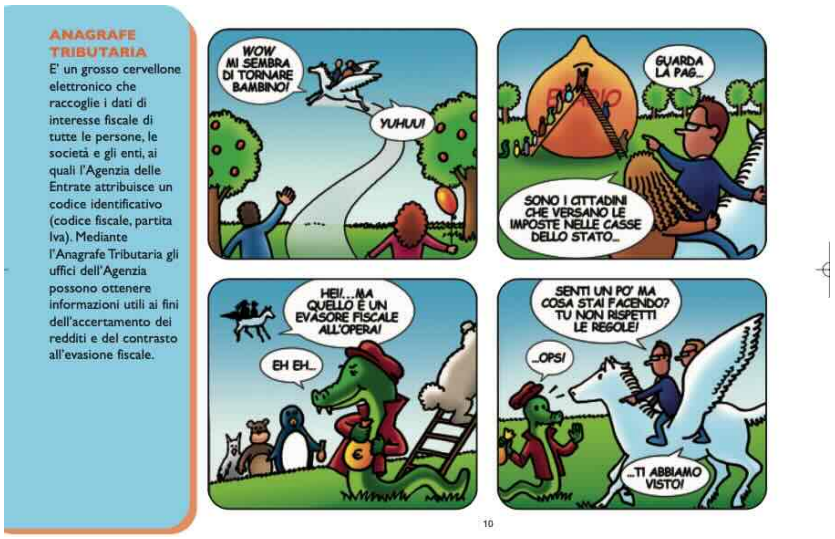
Questi principi sono stabiliti dalla Costituzione: l'articolo 53 infatti afferma che *Tutti sono tenuti a concorrere alle spese pubbliche in ragione della loro capacità contributiva. Il sistema tributario è informato a criteri di progressività.*

REDDITO
Il reddito è costituito dalla ricchezza che una persona produce in un certo periodo di tempo, generalmente un anno, principalmente attraverso lo svolgimento di un'attività lavorativa o la proprietà di un bene (es. casa, terreno).

- Second, *the balance between rights and duties*. Rights such as education, free expression, work, and voting are presented alongside civic duties, emphasizing that individual freedoms are inseparable from obligations toward the community. This balance is visually conveyed through parallel panels that define "right" and "duty" using clear and accessible language.
- Third, the m*eaning and purpose of taxation*. A substantial portion of the comic is devoted to explaining what taxes are, why they exist, and how they are used. Concepts such as *fisco* (tax authority), *erario* (state treasury), *tributi* (tributes), *tasse* (fees), and *imposte* (taxes) are introduced sequentially. The civic message is that taxes are not arbitrary impositions, but collective contributions that finance public goods and services such as healthcare, education, security, and justice. The principle of ability to pay and progressivity is explicitly linked to Article 53 of the Italian Constitution, which is quoted and explained in simplified terms. The comic stresses that citizens do not all contribute the same amount, but rather according to their income and economic capacity, framing progressivity as a principle of fairness.

Examples and visual devices. The educational strategy relies on a combination of fictional framing and encyclopedic explanations, supported by clear visual devices. Key examples include:

- The use of boxed definitions with icons and stylized graphics to explain abstract concepts such as laws, duties, and taxes, which helps students distinguish between related terms.
- Panels explaining everyday taxes, such as VAT paid when buying common goods (books, ice cream, cars), linking fiscal concepts to children's daily experiences.
- Illustrations accompanying the explanation of income, tax returns, and tax declarations, which visually guide students through the idea of reporting income to the State.

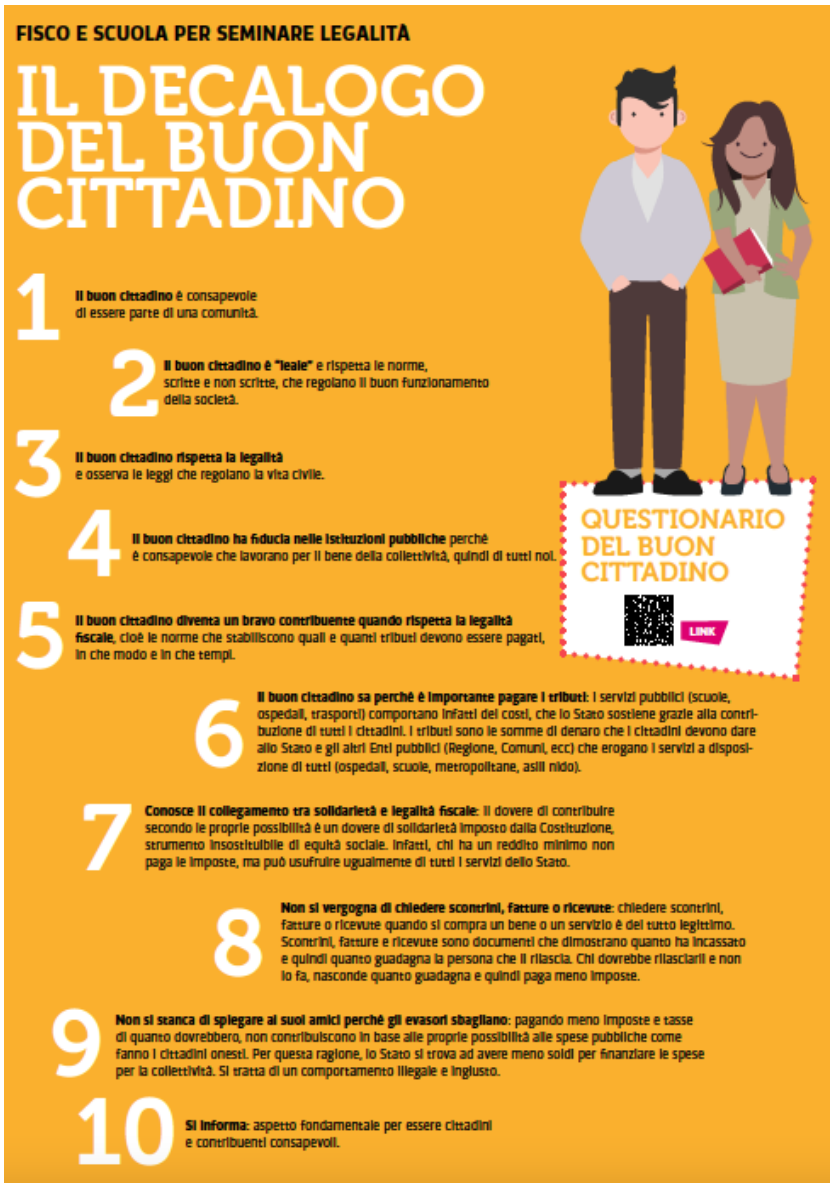


- Explicit depictions of tax evasion as illegal behavior, paired with explanations of sanctions and penalties, emphasizing that noncompliance harms the collective.
- Visual representations of administrative tools such as the Tax Register (*Anagrafe Tributaria*), tax identification numbers, and health cards, which connect the fictional story to real-world institutions and practices.
- Concluding quiz-style pages, which invite students to actively test their understanding of concepts introduced in the story, reinforcing learning through interaction.

The final page summarizes the core normative message of the material with the statement: "Those who respect the rules have everything to gain", visually closing the narrative loop between individual behavior and collective well-being.

A7 Didactic Booklet on "How to Be a Good Citizen"

Another concrete example of the Tax and School program comes from the didactic booklets, which include a "Decalogue of the Good Citizen."[2] This activity frames fiscal education within the broader context of civic responsibility. Students are presented with ten principles of good citizenship, ranging from being aware of belonging to a community, respecting written and unwritten rules, and trusting institutions, to understanding why paying taxes is essential to finance schools, hospitals, and other public services. The exercise stresses that evasion harms everyone, because fewer resources become available for collective goods. A recurring message is that "*fare i furbi non conviene*" (cheating does not pay), as those who avoid their contribution reduce the quality of services for themselves as well as for others.



The program combines explanation with interactive tools such as quizzes, role-play activities, and class discussions that link abstract constitutional principles (e.g. Article 2 and

[2]See *Quaderni didattici per la scuola secondaria*, Agenzia delle Entrate and Agenzia delle entrate-Riscossione.

Article 53) to students' daily lives. By learning that rights come with corresponding duties, and by seeing how their own behavior affects the collective outcome, students internalize the link between individual responsibility and the functioning of democratic institutions.

This example illustrates how civic education goes beyond technical notions of taxation. It actively fosters norms of legality, fairness, and solidarity, encouraging students to see themselves as future citizens and taxpayers. Such exposure reduces informational barriers, strengthens trust in public institutions, and builds a cultural foundation for civic participation. These mechanisms provide a natural explanation for the empirical results documented in the paper: students exposed to the program become more informed and more civically engaged.

Another implication is that civic education of this kind can also limit the "cheating" behaviors documented in standardized exams as well as other antisocial practices such as theft, exclusion, or bullying. By emphasizing fairness, cooperation, and respect for collective rules, the program directly addresses the cultural roots of opportunistic behavior. As students internalize these civic values, they may become less likely to free-ride or harm others, both in the classroom and later as active members of society.

The decalogue states the following ten rules:

1. A good citizen is aware of being part of a community.

2. A good citizen is "loyal" and respects the rules, both written and unwritten, that regulate the proper functioning of society.

3. A good citizen respects legality and observes the laws that regulate civil life.

4. A good citizen trusts public institutions because they are aware that these work for the good of the community, and thus for all of us.

5. A good citizen becomes a good taxpayer by respecting tax legality, that is, the rules that establish which and how many taxes must be paid, in what way, and within what time limits.

6. A good citizen knows why it is important to pay taxes: public services (schools, hospitals, transport) involve costs, which the State sustains thanks to the contribution of all citizens. Taxes are the sums of money that citizens must give to the State and to other public entities (Regions, Municipalities, etc.) that provide services for everyone (hospitals, schools, subways, daycare centers).

7. A good citizen understands the link between solidarity and tax legality: the duty to contribute according to one's means is a duty of solidarity imposed by the Constitution, an essential tool of social equity. In fact, those with a minimum income do not pay taxes but can still benefit from all State services.

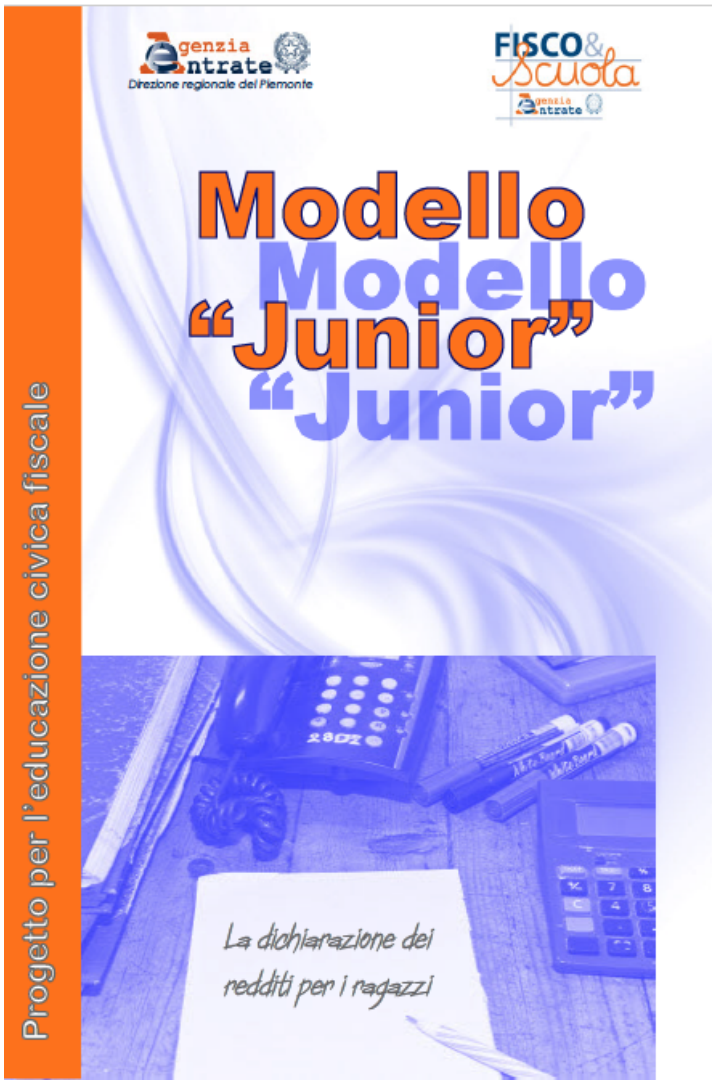
8. A good citizen is not ashamed to ask for receipts, invoices, or bills: requesting them when purchasing a good or service is entirely legitimate. These documents show how much the seller has earned. Those who should issue them but do not are hiding their income and therefore pay less in taxes.

9. A good citizen does not tire of explaining to friends why tax evaders are wrong: by paying less than they should, they fail to contribute according to their means to public spending, unlike honest citizens. As a result, the State has fewer resources to finance services for the community. Such behavior is both illegal and unfair. A good citizen is aware of being part of a community.

10. A good citizen is "loyal" and respects the rules, both written and unwritten, that regulate the proper functioning of society.

A8 The Junior Tax Form

Another example of the Tax and School program's activities is the "Modello Junior" initiative developed by the Direzione Regionale del Piemonte of the Italian Revenue Agency.[3] This activity consists of a simplified tax return designed specifically for students, who are asked to fill in a mock declaration of income and expenses. The exercise places the classroom in the role of a miniature community that must finance common needs such as healthcare, education, and infrastructure. Each student is treated as a "citizen" who earns income (e.g., from small jobs, allowances, or gifts), sustains expenses, and is required to contribute taxes according to their *capacità contributiva* (ability to pay), consistent with Article 53 of the Italian Constitution.



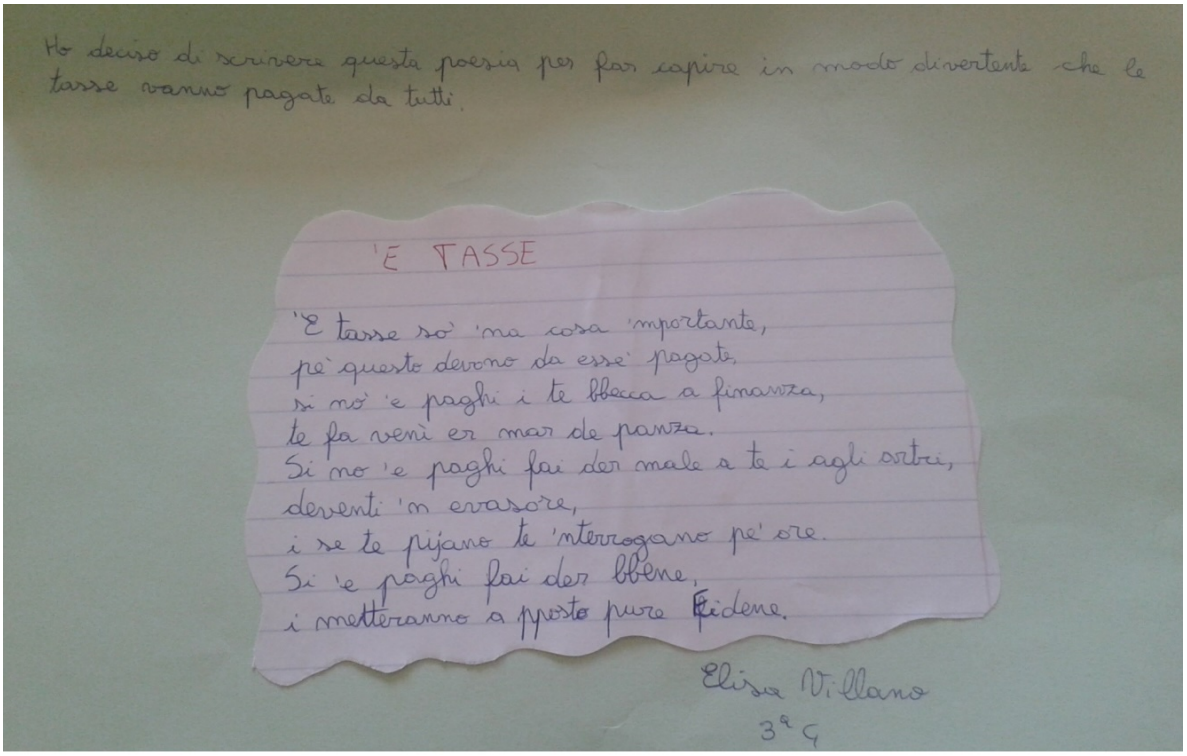
The Modello Junior familiarizes students with the basic mechanics of the Italian tax system. They learn to record revenues and deductible expenses, calculate taxable income, and determine the tax owed based on progressive rates. The exercise also simulates enforcement: once completed, the declaration is checked by the Tax Authority, which verifies accuracy and

[3] See *Modello Junior 2.0*, Direzione Regionale Piemonte, Agenzia delle Entrate.

ensures compliance. In this way, students experience not only the technical steps of filing, but also the institutional roles of taxpayers, the community, and the revenue agency.

A9 Examples of Student Creations: Poems

Figure A2: Examples of Student Creations: Poems



A10 Examples of Student Creations: Drawings

Figure A3: Examples of Student Creations: Drawings

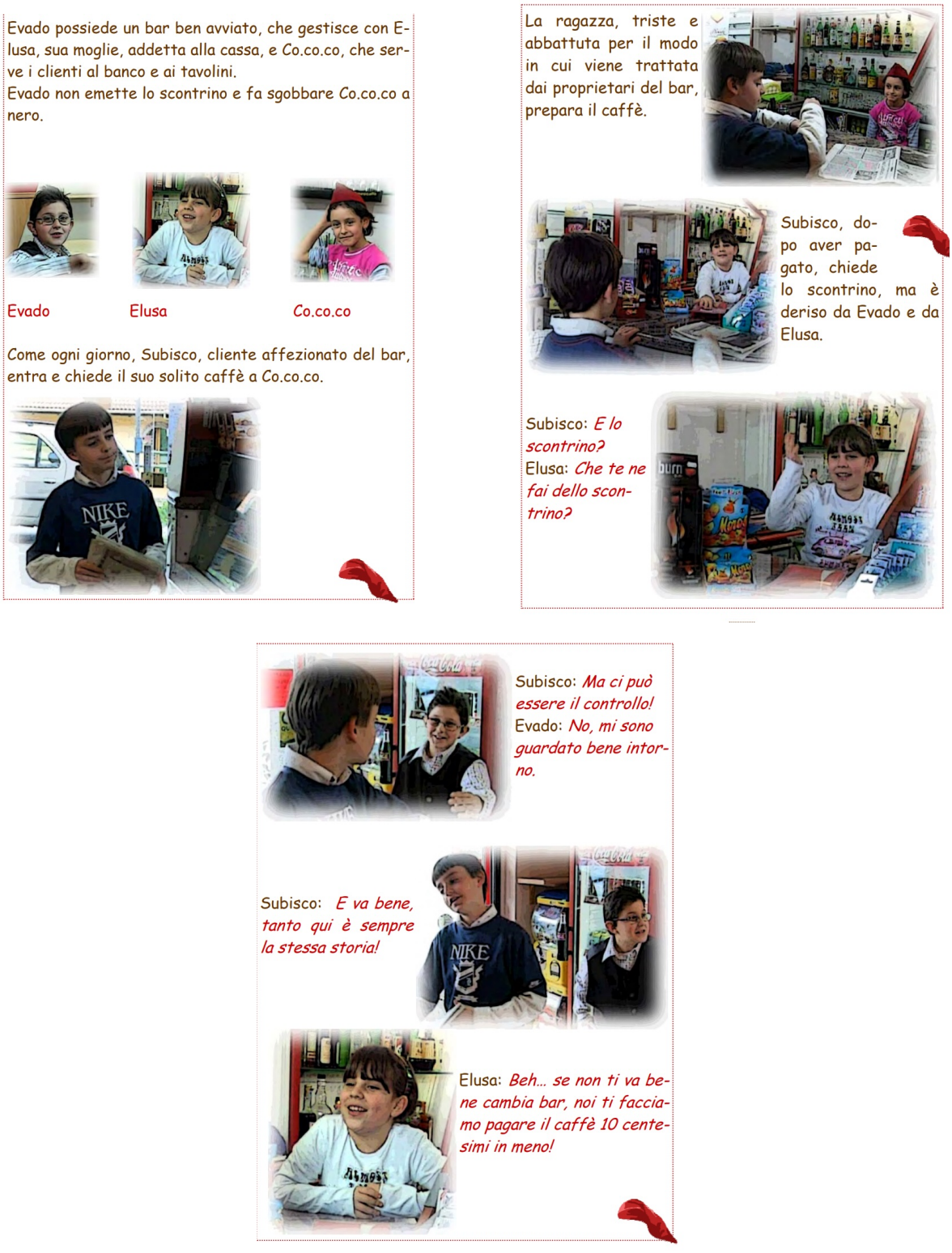
A11 Examples of Student Creations: Video

Figure A4: Examples of Student Creations: Video

Notes: This figure presents examples of student creations developed within the Tax and School program. It depicts a video project where students creatively portray tax evaders as "parasites of society," using visual analogies such as insects or intestinal worms to emphasize that evasion exploits the community imagery.

A12 Examples of Student Creations: Play

Figure A5: Examples of Student Creations: Play



Notes: This figure presents examples of student creations developed within the Tax and School program. It presents scenes from a school play dramatizing tax evasion: characters discuss the unfairness of tax evasion (not issuing a receipt after consuming a coffee) in a local café setting.

A13 Examples of Student Creations: Short Stories

The legend of how taxes were born

Many years ago, in a forest isolated from everything and everyone, there lived a community of badgers. They lived in peace and harmony. However, this land was in danger of disappearing, because the forest was slowly overtaking that place.

So Mr. De Tassi, the mayor of the forest, decided to hire people capable of clearing the woodland. Foreign workers were called—specifically, Swiss child lumberjacks. But there was a problem: they did not understand the language used by the animals, although they could communicate through gestures.

The lumberjacks worked for more than two months without receiving any pay. Their leader then decided to take them back to their home country. At that point, Mr. De Tassi invented the lumberjack tax. These were contributions meant to pay the lumberjacks.

After a year of hard work, the lumberjacks finally received their wages, and a portion of them was paid back to Mr. De Tassi, who used the proceeds to enrich and improve his forest.

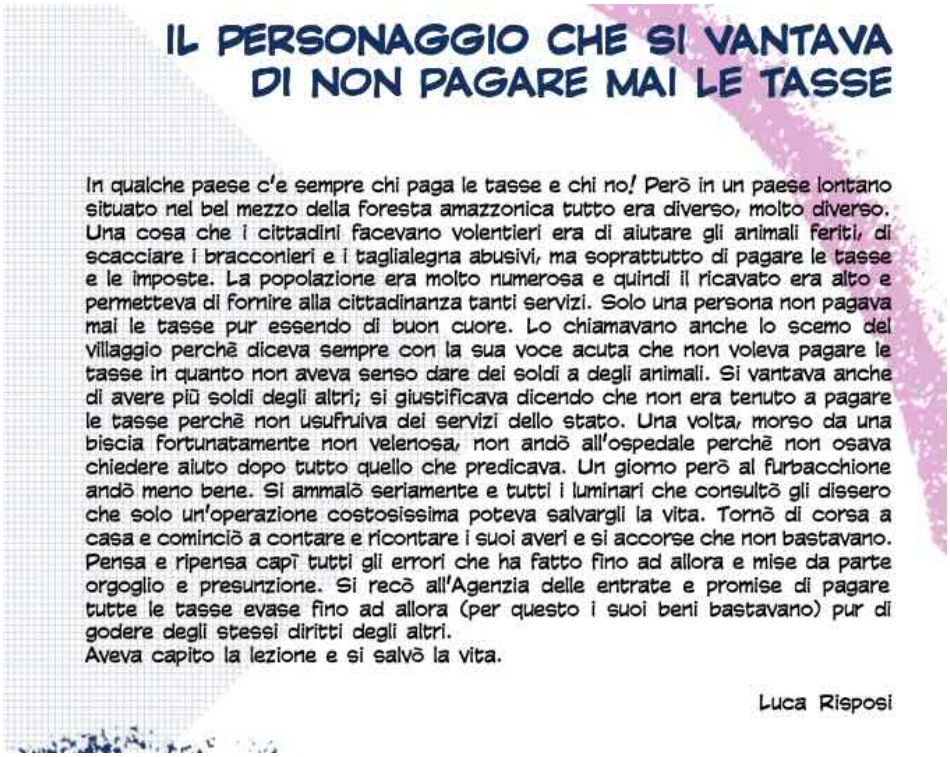
The character who boasted of never paying taxes

In every country there is always someone who pays taxes and someone who does not. But in a distant land, located in the heart of the Amazon rainforest, everything was different—very different. One thing the citizens did willingly was to help injured animals, drive away poachers and illegal loggers, and above all to pay taxes and duties. The population was very large, and as a result the revenues were high, allowing many public services to be provided to the community.

Only one person never paid taxes, despite being kind-hearted. They even called him the village fool, because he always said in a shrill voice that he did not want to pay taxes, since it made no sense to give money to animals. He also boasted about having more money than everyone else. He justified himself by claiming that he was not required to pay taxes because he did not use state services.

Once, after being bitten by a snake – fortunately not venomous – he did not go to the hospital, because he did not dare to ask for help after everything he had preached. One day, however, things went worse for the clever trickster. He became seriously ill, and all the experts he consulted told him that only a very expensive operation could save his life. He rushed home and began counting and recounting his belongings, only to realize they were not enough.

Thinking it over again and again, he understood all the mistakes he had made up to that point and set aside his pride and arrogance. He went to the Revenue Agency and promised to pay all the taxes he had evaded until then (for this, his assets were sufficient) in order to enjoy the same rights as everyone else. He had learned his lesson – and he saved his life.



A revealing dream

One evening, before going to bed, I was flipping through TV channels. At a certain point I stopped on a program. It was about citizens' controversies over taxes, and after a while that discussion became boring and heavy, so I turned off the TV and slipped under the covers to sleep. I had a strange dream—very strange.

Suddenly I found myself on the bank of a river bordered by a forest; in the distance I could see some houses, let's say a village. I headed there and found myself on a gravel road, unpaved. There wasn't even anything public, like a school—not even a small one. Behind the houses I saw children playing in tall, wild grass. I went to play with them too, and while playing and playing again, I thought about climbing one of the trees in the forest.

Suddenly I fell and badly injured my right arm. I decided to call an ambulance, but there wasn't one, so I decided to call a doctor—but there wasn't one either. At that point the TV program I had watched before going to bed came back to my mind. "Of course," I thought. So I asked the friends who were keeping me company there whether they had ever paid taxes, and they, surprised, replied that they didn't even know what taxes were.

When I woke up, I was deeply convinced that if taxes did not exist, we would be in serious trouble – trouble far greater than what citizens think might result from PAYING TAXES.

UN SOGNO RIVELATORE

Una sera, prima di andare a letto, feci scorrere i canali in TV. Ad un certo punto mi soffermai su un programma. Era sulle polemiche dei cittadini riguardo le tasse e dopo un pō quel discorso diventō noioso e pesante cosī spensi la TV e mi infilai sotto le coperte del mio letto a dormire. Feci un sogno strano, ma molto strano. Ad un tratto mi trovai su una sponda di un fiume fiancheggiato da una foresta; in lontananza scorsi delle case diciamo, un paese. Mi diressi lī e mi trovai su una strada ghiaiosa e senza asfalto. Non c'era neanche un qualcosa di pubblico come una scuola, una piccola scuola. Dietro a delle case vidi dei bambini giocare nell'erba alta e selvaggia. Andai a giocare anch'io e giocando e rigiocando mi venne in mente di andare a giocare su uno degli alberi della foresta. Ad un tratto caddi e mi feci molto male al braccio destro. Decisi di chiamare un'ambulanza, ma non c'era e allora decisi di chiamare un dottore, ma non c' era. A un certo punto mi venne in mente il programma che avevo visto prima di andare a letto, " Ma sī. " Cosī chiesi agli amici, che lī mi facevano compagnia, se avessero mai pagato le tasse e loro, stupiti, affermarono che non sapevano neanche cosa fossero. Quando mi svegliai ero convinto fino in fondo che se non esistessero le tasse saremmo nei guai: ma in guai ben piū grossi di quelli che i cittadini pensano che possano scaturire dal PAGAR LE TASSE.

Riccardo Barabaschi

B Data Appendix

B1 Variables Description and Sources

Table B1: Variables Description and Sources

Variable	Description	Source
Standardized test score	Municipality-level average standardized performance in INVALSI tests.	INVALSI
Standardized cheating index	Municipality-level average of INVALSI's class-level indicator of anomalous response pattern.	INVALSI
Share non-Italian students	Share of V grade students without Italian citizenship in the municipality.	INVALSI
Share low-SES students	Share of students with both parents having at most lower secondary education	INVALSI
Tax evasion	Share of unregistered taxable buildings.	Italian Revenue Agency
Property tax rate	Statutory municipal property tax rate	Fondazione IFEL
Income tax exemption cutoff	Municipal exemption threshold for the local surtax on personal income tax.	Rubolino and Giommoni 2023
Bottom income tax rate	Lowest statutory municipal surtax rate on personal income tax.	Rubolino and Giommoni (2023)
Top income tax rate	Highest statutory municipal surtax rate on personal income tax.	Rubolino and Giommoni (2023)
Local progressive tax schedule	Indicator for whether the municipality adopts a progressive local income tax schedule, rather than a flat one.	Rubolino and Giommoni (2023)
Gini index	Municipality-level measure of income inequality.	Constructed from tax records in Rubolino (2023)
Turnout rate in national elections	Ballots cast as a share of registered voters in parliamentary elections.	Italian Ministry of the Interior electoral data
Population	Total resident population in the municipality.	ISTAT
Social cooperatives per 1,000 inhabitants	Number of social cooperatives relative to municipal population.	ISTAT Census data, 2011
Per capita taxable income	Average taxable income per taxpayer in the municipality.	Ministry of Economy and Finance, based on personal income tax statistics
Population share 15-	Share of residents aged 15 or younger.	ISTAT
Population share 65+	Share of residents aged 65 or older.	ISTAT
Non-profit organizations per 1,000 inhabitants	Number of non-profit organizations relative to municipal population.	ISTAT Census data, 2011
Female mayor	Indicator equal to one if the mayor is a woman.	Italian Ministry of the Interior
Mayor has college degree	Indicator equal to one if the mayor holds a university degree.	Italian Ministry of the Interior
Mayor age	Age of the mayor.	Italian Ministry of the Interior
Expenditure on education	Per-capita municipal expenditure on primary schools.	Ministry of the Interior, municipal balance sheet data
Expenditure on social activities	Per-capita municipal expenditure on social spending.	Ministry of the Interior, municipal balance sheet data

B2 Summary Statistics

Table B2: Summary Statistics

	Obs (1)	Mean (2)	SD (3)
	A. Cheating sample: class-level data		
Standardized cheating rate	219,426	0	1
Class size	219,426	16.972	4.987
% of male students	219,426	0.506	0.131
% of 1st generation immigrants	219,426	0.117	0.146
% of 2nd generations immigrants	219,426	0.184	0.168
% of low-background students	219,426	0.368	0.247
% of students attended nursery	219,426	0.245	0.233
% of students attended pre-school	219,426	0.758	0.373
	B. Survey sample: student-level data		
Theft	1,468,686	0.067	0.250
Social exclusion	1,503,583	0.361	0.480
Physical aggression	1,503,583	0.159	0.366
Studies to please parents	1,519,905	0.552	0.497
Studies to please teachers	1,519,905	0.560	0.496
Studies to achieve good grades	1,519,905	0.978	0.147
Studies to receive rewards	1,519,905	0.327	0.469
Studies to avoid embarrassment	1,519,905	0.598	0.490
Finds studying boring	1,519,905	0.957	0.204
Gives up on difficult subjects	1,519,905	0.440	0.496
	C. Turnout sample: municipality-level data		
Turnout rate	45,980	0.763	0.101
Election duration	45,980	4.202	1.179
	D. Local tax sample: municipality-level data		
Tax rate on luxury properties	117,878	0.491	0.091
Bottom income tax rate	117,879	0.270	0.254
	E. Politician sample: politician-level data		
Age	4,126,073	45.435	11.981
Female	4,126,073	0.223	0.416
At least bachelor degree	4,126,073	0.282	0.450
	F. ITANES: support government intervention for:		
Reducing income inequality	1,466	0.466	0.499
Providing social protection	1,466	0.492	0.500
Fiscal decentralization	1,466	0.255	0.436
Gender-based policy	1,466	0.157	0.364
Integration of immigrants	1,466	0.028	0.166
Discouraging abortion	1,466	0.196	0.397

Note: This table reports descriptive statistics for the main datasets used in the analysis. Panel A summarizes the cheating sample, which consists of class-level data from INVALSI standardized exams in mathematics and language for fifth-grade students between 2011/2012 and 2023/2024. Panel B summarizes the student survey sample, which covers measures of antisocial behavior (theft, social exclusion, physical aggression), compliance with authority figures (studying to please parents or teachers), extrinsic motivation (studying for grades, rewards, or to avoid embarrassment), intrinsic disutility from studying (finding school boring), and perseverance or grit (giving up when facing difficult subjects). Panel C summarizes the turnout sample, which includes municipality-level electoral data from the Italian Ministry of the Interior. Turnout is measured in national elections between 2000 and 2024. Panel D reports information on local tax rates. The dataset covers the period 2001–2015. Panel E reports information on all individuals elected to municipal councils in Italy from 1986 to 2024, drawn from administrative archives of the Italian Ministry of the Interior. Panel F is based on individual-level survey from the Italian National Election Studies (ITANES), providing information on views toward the role of government on salient policy issues.

B3 Cheating in Standardized Exams

Cheating in school standardized exams is calculated by using the same methodology employed by INVALSI and described in Quintano et al. (2009). INVALSI implements a three-step procedure to identify class-level cheating behavior.

Step 1: Summary statistics. The first step computes the following four summary statistics:

i. Within-class average score:

$$\bar{p}_i = \frac{1}{N_i} \sum_{j=1}^{N_i} p_{ji},$$

where p_{ji} denotes the score of student j in class i, and N_i is the number of test-takers in class i.

ii. Within-class standard deviation of scores:

$$\sigma_i = \sqrt{\frac{1}{N_i} \sum_{j=1}^{N_i} (p_{ji} - \bar{p}_i)^2}.$$

iii. Within-class average percent missing:

$$MC_i = \frac{1}{N_i} \sum_{j=1}^{N_i} M_{ji},$$

where M_{ji} is the fraction of test items skipped by student j in class i.

iv. Within-class index of answer homogeneity:

$$\bar{E}_i = \frac{1}{Q} \sum_{q=1}^{Q} E_{qi},$$

where $q = 1, \ldots, Q$ indexes test items and E_{qi} is a Gini measure of homogeneity equal to zero if all students in class i provide the same answer to item q. This can be interpreted as a Herfindahl index of student response similarity.

Step 2: Principal component analysis. In the second step, the summary indicators are synthesized using principal component analysis, which reduces the dimensionality to two orthogonal components. The first component (ψ_{1i}) – interpreted as an "outlier identification axis" – is strongly associated with high mean scores and low intra-class variability. The second component (ψ_{2i}) reflects class-level collaboration and was primarily correlated with the non-response rate.

Step 3: Cluster analysis. The third step uses a fuzzy k-means clustering algorithm to classify classes based on (ψ_{1i}, ψ_{2i}). INVALSI sets the number of groups $G = 8$, assigning each class a vector of eight group membership probabilities. This procedure allows for partial membership in multiple clusters.

Classes most likely to be manipulators are assigned to the group characterized by:

- abnormally high values of $\bar{p}_i$;
- low values of σ_i, MC_i, and $\bar{E}_i$.

This group is labeled the "outlier" or manipulating cluster. The manipulation indicator gives, for each class, the membership probability for this cluster. Each class is thus assigned a value between 0 and 1, indicating its degree of belonging to the outlier cluster. This value is interpreted as a proxy for the class-level cheating rate, reflecting the extent to which a class exhibited anomalous scoring patterns.

B4 The Geographical Distribution of Cheating Rate

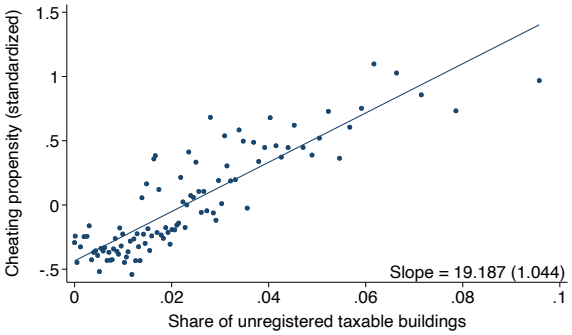
Figure B1: Geographical Distribution of Cheating Rate in Standardized Exams

Notes: This figure maps the spatial distribution of standardized cheating rates across Italian municipalities, as detected in fifth-grade INVALSI exams between 2011/2012 and 2023/2024. Darker shades indicate municipalities with higher prevalence of manipulation, based on INVALSI's algorithm for identifying anomalous response patterns. The figure highlights pronounced geographic disparities: cheating rates are relatively low in Northern and Central Italy, while Southern regions exhibit substantially higher levels, in some provinces reaching close to 18 percent of classes flagged. This pattern mirrors well-documented territorial differences in civic norms and institutional quality, with higher manipulation concentrated in areas characterized by weaker civic capital and higher rates of tax evasion. In this graph, missing values are replaced with regional averages.

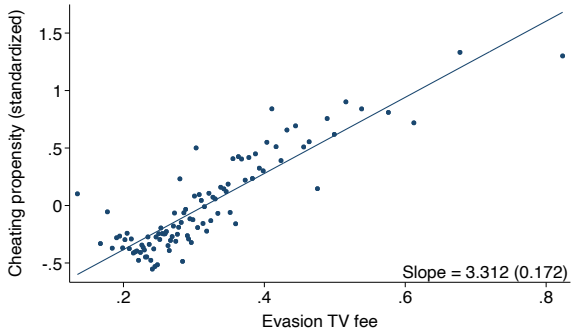
B5 The Predictors of Test Score Cheating

Figure B2: The Predictors of Test Score Cheating

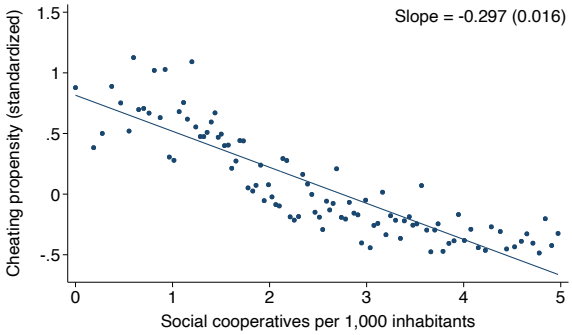
A. Cheating vs unregistered buildings



B. Cheating vs TV fee evasion



C. Cheating vs social cooperatives



Notes: This figure examines municipal-level predictors of cheating in standardized exams. The figure plots the relationship between the average standardized cheating rate and three external indicators of civic behavior: (i) the share of unreported taxable buildings, a proxy for local tax evasion; (ii) the non-payment rate of the national television license fee, another measure of fiscal non-compliance; and (iii) the density of social cooperatives per capita, which serves as a proxy for civic engagement and collective action. The results show that municipalities with higher levels of tax evasion (panels A and B) systematically exhibit higher cheating rates, while municipalities with a stronger presence of social cooperatives (panel C) display lower cheating rates. These correlations reinforce the interpretation of cheating as a valid proxy for civic norms, capturing broader differences in compliance, trust, and collective responsibility across communities.

B6 Construction of Student Survey Variables

This appendix documents the construction of all outcome variables derived from student-level surveys administered by INVALSI. For each variable, I report: (i) the exact survey question; (ii) the variable name used in the empirical analysis; (iii) the set of possible survey answers; (iv) the coding rule defining when the variable equals one; (v) the survey waves in which the question is available; and (vi) the grades covered. All variables are constructed as binary indicators at the student level.

Table B3: Construction of Student Survey Variables

Variable name	Exact survey question	Survey answers	Variable = 1 if	Survey waves	Grades
Experience of theft	"Have you had something valuable stolen?"	Never; Sometimes; Every week; Every day	Answer is at least "Sometimes"	2009/2010; 2011/2012	5, 6
Physical aggression	"Have you ever hit other students?"	Never; Sometimes; Every week; Every day	Answer is at least "Sometimes"	2013/2014; 2014/2015	5, 10
Social exclusion	"Have you ever isolated or excluded other students?"	Never; Sometimes; Every week; Every day	Answer is at least "Sometimes"	2013/2014; 2014/2015	5, 10
Study to please teachers	"Do you study to please your teachers?"	Not at all; A little; Quite a bit; A lot	Answer is at least "A little"	2009/2010; 2011/2012	5, 6
Study to please parents	"Do you study to please your parents?"	Not at all; A little; Quite a bit; A lot	Answer is at least "A little"	2009/2010; 2011/2012	5, 6
Study to achieve good results	"Do you study to achieve good results?"	Not at all; A little; Quite a bit; A lot	Answer is at least "A little"	2009/2010; 2011/2012	5, 6
Study to avoid embarrassment	"Do you study to avoid being embarrassed?"	Not at all; A little; Quite a bit; A lot	Answer is at least "A little"	2009/2010; 2011/2012	5, 6
Study to receive rewards	"Do you study to receive rewards or gifts from your parents?"	Not at all; A little; Quite a bit; A lot	Answer is at least "A little"	2009/2010; 2011/2012	5, 6
Finds studying boring	"Do you find studying boring?"	Not at all; A little; Quite a bit; A lot	Answer is at least "A little"	2009/2010; 2011/2012	5, 6
Gives up on difficult subjects	"Do you give up when a subject is difficult?"	Not at all; A little; Quite a bit; A lot	Answer is at least "A little"	2009/2010; 2011/2012	5, 6

Note: The table reports the exact wording of each INVALSI survey question and the corresponding coding rules. For variables based on Likert-scale responses, binary indicators equal one if the student reports at least a weak agreement. Survey waves and grade coverage vary across questions and reflect changes in questionnaire design over time. All outcomes are measured at the student level and used as dependent variables in the empirical analysis.

B7 Construction of Principal Factor Indices from the Principal Survey

This appendix documents the construction of the three composite indicators derived from the INVALSI School Principal Survey: (i) parental involvement, (ii) school resources and facilities, and (iii) teacher quality. Each index is constructed using principal component factor analysis and retaining the first principal factor, which captures the dominant common component across conceptually related items.

For each index, I describe the underlying survey questions, the variable classifications, and the coding rules used prior to factor extraction.

Parental involvement index. This index summarizes principals' assessments of the extent to which families participate in school life and educational decision-making. The index is constructed from the following survey items:

- How much do the parents of students in this school discuss the overall performance of the school in terms of students' learning outcomes? *Response scale: 1 = Not at all; 2 = A little; 3 = Quite a lot; 4 = Very much.*
- How much do the parents of students in this school discuss the allocation of the financial resources available to the school? *Response scale: 1 = Not at all; 2 = A little; 3 = Quite a lot; 4 = Very much.*
- How much do the parents of students in this school discuss the condition of the school buildings and facilities? *Response scale: 1 = Not at all; 2 = A little; 3 = Quite a lot; 4 = Very much.*
- How much do the parents of students in this school contribute to the definition of the school curriculum? *Response scale: 1 = Not at all; 2 = A little; 3 = Quite a lot; 4 = Very much.*
- How much do the parents of students in this school participate actively in teaching activities? *Response scale: 1 = Not at all; 2 = A little; 3 = Quite a lot; 4 = Very much.*

These measures jointly capture family participation along informational, consultative, and co-decision dimensions. All items are coded such that higher values correspond to stronger parental involvement. The resulting factor is standardized (mean 0, SD 1) in the analysis.

School resources and facilities index. This index summarizes the availability and adequacy of physical, technological, and pedagogical resources within the school. It relies on a broad set of binary or ordinal indicators reported by principals. The following variables enter the factor model:

- Gymnasium available and functioning.
  Response scale: 1 = Present in all buildings; 2 = Present only in some buildings; 3 = Not present at school.

- Library with reading room available and functioning.
  Response scale: 1 = Present in all buildings; 2 = Present only in some buildings; 3 = Not present at school.

- Outdoor spaces available and functioning (e.g., gardens, sports fields).
  Response scale: 1 = Present in all buildings; 2 = Present only in some buildings; 3 = Not present at school.

- IT laboratory available and functioning.
  Response scale: 1 = Present in all buildings; 2 = Present only in some buildings; 3 = Not present at school.

- Language laboratory available and functioning.
  Response scale: 1 = Present in all buildings; 2 = Present only in some buildings; 3 = Not present at school.

- Science laboratory available and functioning.
  Response scale: 1 = Present in all buildings; 2 = Present only in some buildings; 3 = Not present at school.

- Art or music laboratory available and functioning.
  Response scale: 1 = Present in all buildings; 2 = Present only in some buildings; 3 = Not present at school.

- Technology laboratory available and functioning.
  Response scale: 1 = Present in all buildings; 2 = Present only in some buildings; 3 = Not present at school.

- Theater laboratory available and functioning.
  Response scale: 1 = Present in all buildings; 2 = Present only in some buildings; 3 = Not present at school.

- Heating system functioning.
  Response scale: 1 = Present in all buildings; 2 = Present only in some buildings; 3 = Not present at school.

- Lighting system functioning.
  Response scale: 1 = Present in all buildings; 2 = Present only in some buildings; 3 = Not present at school.

- Adequate availability of teaching materials (e.g., textbooks).
  Response scale: 1 = Adequately available; 2 = Inadequately available; 3 = Completely absent.

- Adequate availability of stationery (e.g., paper, pencils).
  Response scale: 1 = Adequately available; 2 = Inadequately available; 3 = Completely absent.

- Books available for student consultation.
  Response scale: 1 = Adequately available; 2 = Inadequately available; 3 = Completely absent.

- Library loan service available.
  Response scale: 1 = Adequately available; 2 = Inadequately available; 3 = Completely absent.
- Audiovisual aids for teaching adequately available.
  Response scale: 1 = Adequately available; 2 = Inadequately available; 3 = Completely absent.
- Functioning computers available for teaching activities.
  Response scale: 1 = Adequately available; 2 = Inadequately available; 3 = Completely absent.
- Interactive whiteboards (IWBs) available.
  Response scale: 1 = Adequately available; 2 = Inadequately available; 3 = Completely absent.
- Software for teaching adequately available.
  Response scale: 1 = Adequately available; 2 = Inadequately available; 3 = Completely absent.
- Functioning tablets or notebooks available.
  Response scale: 1 = Adequately available; 2 = Inadequately available; 3 = Completely absent.
- Working internet connection available.
  Response scale: 1 = Adequately available; 2 = Inadequately available; 3 = Completely absent.

Higher values of this standardized index indicate better school infrastructure and resource conditions.

Teacher engagement index. This index captures principals' evaluations of teachers' preparedness, engagement, and pedagogical practices. It is constructed from the following survey questions:

- How many teachers in this school participate in the school's decision-making processes?
  Response scale: 1 = None/almost none; 2 = Some; 3 = Most; 4 = All/almost all.
- How many teachers in this school contribute to solving the school's problems?
  Response scale: 1 = None/almost none; 2 = Some; 3 = Most; 4 = All/almost all.
- How many teachers in this school propose useful ideas to improve the management of the school?
  Response scale: 1 = None/almost none; 2 = Some; 3 = Most; 4 = All/almost all.
- How many teachers in this school are willing to stand as teacher representatives on the School Council?
  Response scale: 1 = None/almost none; 2 = Some; 3 = Most; 4 = All/almost all.
- How many teachers in this school contribute to setting the school's priorities?
  Response scale: 1 = None/almost none; 2 = Some; 3 = Most; 4 = All/almost all.
- How many teachers in this school ensure that school rules are respected, including by students who are not in their own classes?
  Response scale: 1 = None/almost none; 2 = Some; 3 = Most; 4 = All/almost all.

- How many teachers in this school intervene to resolve conflicts that arise between students?
  Response scale: 1 = None/almost none; 2 = Some; 3 = Most; 4 = All/almost all.
- How many teachers in this school actively participate in school development and improvement activities?
  Response scale: 1 = None/almost none; 2 = Some; 3 = Most; 4 = All/almost all.
- How many teachers in this school encourage students to take an active part in school life?
  Response scale: 1 = None/almost none; 2 = Some; 3 = Most; 4 = All/almost all.

Responses are recoded so that higher values represent higher perceived teacher engagement.

B8 Survey Questions on Perception of Public Goods and Facilities

To investigate whether the *Tax and School* program alters students' expectations and evaluations of publicly provided services, I draw on a set of questions from the INVALSI student survey that elicit children's self-reported satisfaction with the quality of school facilities and classroom environments. These items provide a rare source of information on how students perceive the adequacy of local public goods, including infrastructure, equipment, and basic services. Because schools are the most visible and most frequently used public institutions in children's daily lives, students' evaluations offer a meaningful proxy for broader perceptions of public-good quality.

The perception module consists of two blocks of questions. In each block, students are asked to indicate how satisfied they are with a given facility or service in their school. Responses follow a Likert-type scale ranging from "*Not at all satisfied*" to "*Very satisfied*." Some items include additional categories that indicate that the facility is unavailable or that the student does not use it (e.g., "*There is no gym*," "*There are no outdoor spaces*," "*I do not go to the library*").

Block 1: Satisfaction with School Facilities

Students report their satisfaction with the following items:

A. **Gymnasium**: "Based on your experience, how satisfied are you with your school's gym?"

B. **Outdoor spaces** (courtyard, garden, etc.): "How satisfied are you with your school's outdoor spaces?"

C. **Library**: "How satisfied are you with your school's library?"

D. **School laboratories** (computer lab, science lab, etc.): "How satisfied are you with your school's laboratories?"

Block 2: Satisfaction with Classroom and Building Conditions

Students evaluate additional aspects of the school environment:

A. **School building**: "How satisfied are you with your school building?"

B. **Classroom furniture** (chairs, desks, etc.): "How satisfied are you with your classroom?"

C. **Heating system in class**: "How satisfied are you with the heating in your classroom?"

D. **Lighting**: "How satisfied are you with the lighting in your classroom?"

E. **Cleanliness**: "How satisfied are you with the cleanliness of your school?"

Construction of Latent Indicators Using Factor Analysis

Because the survey items within each block measure conceptually related dimensions, I summarize them by constructing two composite indicators using factor analysis (principal factor extraction):

1. **Facilities Quality Index**: built from the four items in Block 1 (gym, outdoor spaces, library, laboratories). Higher values indicate better perceived availability and quality of school-level facilities.
2. **Classroom Environment Quality Index**: Built from the five items in Block 2 (building quality, furniture, heating, lighting, cleanliness).

Higher values reflect a more satisfactory learning environment. Each index corresponds to the first principal factor extracted from the relevant set of items. For interpretability, the resulting factors are standardized to have mean zero and standard deviation one.

B9 Italian National Election Studies Survey

This appendix documents the construction of indexes and variables from the Italian National Election Studies (ITANES) dataset.

Government views and policy attitudes. Respondents are asked the following question: *"People have different views on political matters. To what extent do you agree with each of the following statements?"* The statements considered in the analysis are:

1. Immigrants are a resource for the Italian economy.
2. Women should be given preferential treatment when looking for jobs or in their professional careers.
3. Obtaining an abortion should be made more difficult.
4. A stable structure of social protections should be the first goal of any government.
5. Tax revenue should be autonomously managed by the regions.
6. The government should intervene to reduce income inequalities among citizens.

For each statement, respondents choose one of four ordered response categories:

Fully agree; Somewhat agree; Don't quite agree; Don't agree at all.

For each item k, I construct a binary indicator equal to one if the respondent answers *fully agree* and zero otherwise:

$$Y_{ik} = \mathbf{1}\{\text{response}_{ik} = \text{"fully agree"}\}.$$

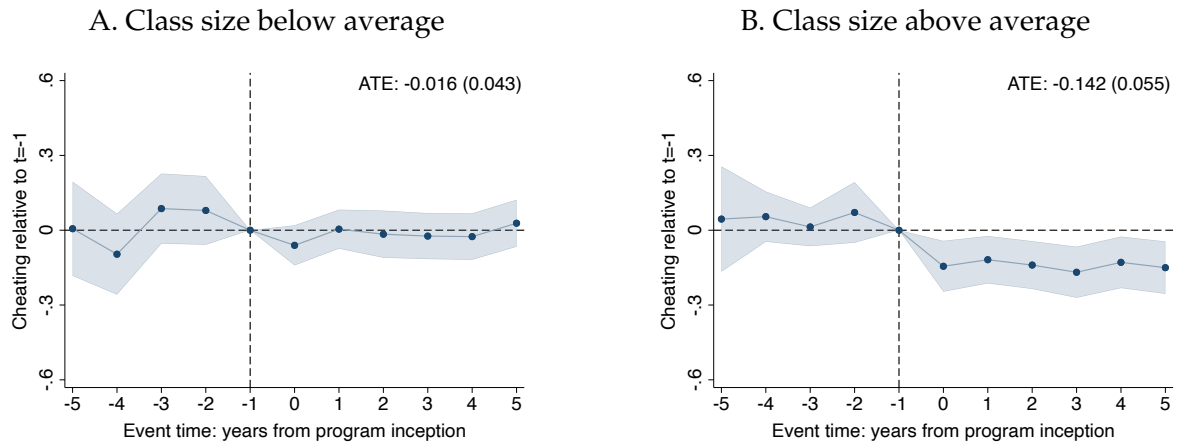
Respondents with missing answers or item non-response are excluded from the corresponding outcome.

Among these items, two questions directly capture views that are plausibly affected by the program's fiscal and civic content: preferences for redistribution (item 7) and for fiscal decentralization (item 6). Attitudes toward a strong welfare state (item 4) are also closely related to beliefs about government responsibility. In contrast, views regarding immigrants (item 1), gender-based preferential policies (item 2), abortion (item 3), and punitive criminal justice (item 5) are not directly targeted by the program. These latter outcomes therefore serve as placebo tests, helping to assess whether estimated effects reflect specific changes in fiscal and civic beliefs rather than a general shift in ideological orientation.

C Heterogeneity Analysis and Additional Results

C1 Heterogeneity by Class Size

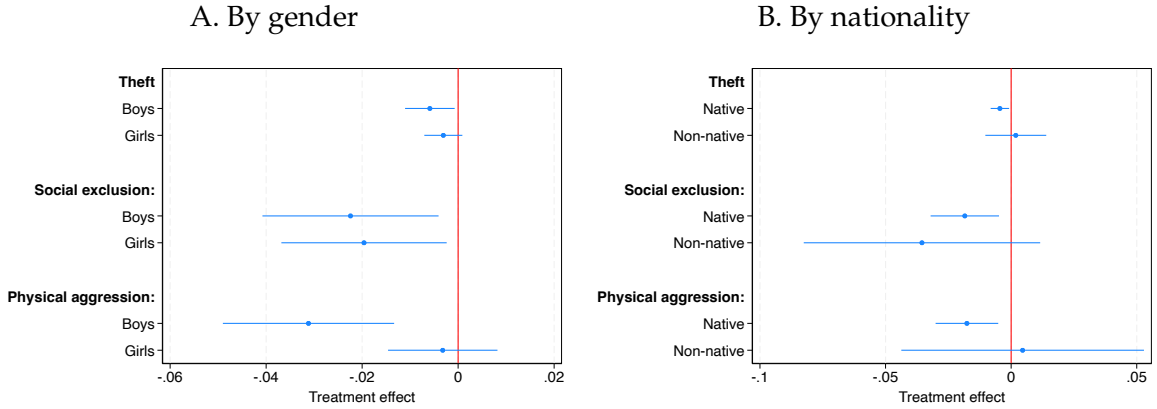
Figure C1: Heterogeneity by Class Size



Notes: This figure depicts the dynamic treatment effects from estimating equation (2), which includes school and year fixed effects. It shows separate estimates for classes with below-median versus above-median number of enrolled students. Estimates are obtained from a model that includes school and year fixed effects. The graph also reports the average treatment effect estimated from equation (1) and its associated standard error.

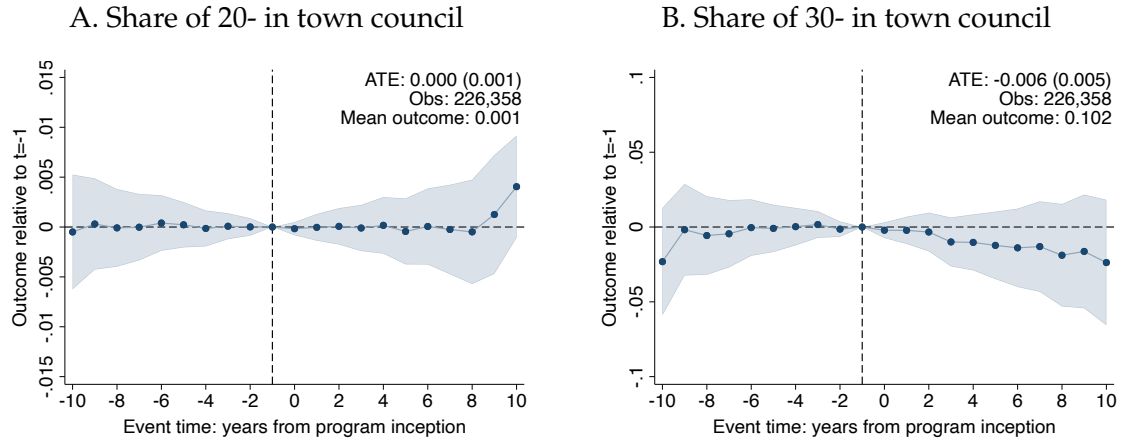
C2 Heterogeneity in Antisocial Behavior

Figure C2: Heterogeneity in Antisocial Behavior



Notes: This figure presents heterogeneity in the estimated effects of the program on student antisocial behavior, as measured by theft, social exclusion, and physical aggression. Panel A reports separate estimates by gender, while Panel B distinguishes between native and non-native students. Each point represents the estimated treatment effect from equation (1) for the corresponding subgroup, and the horizontal bars display 95 percent confidence intervals based on standard errors clustered at the municipality level. The outcome variables are constructed from self-reported survey responses, as described in Section 3.1, and correspond to binary indicators equal to one if the student acknowledges engaging in the respective behavior. Estimates are obtained from models including school, grade, and year fixed effects.

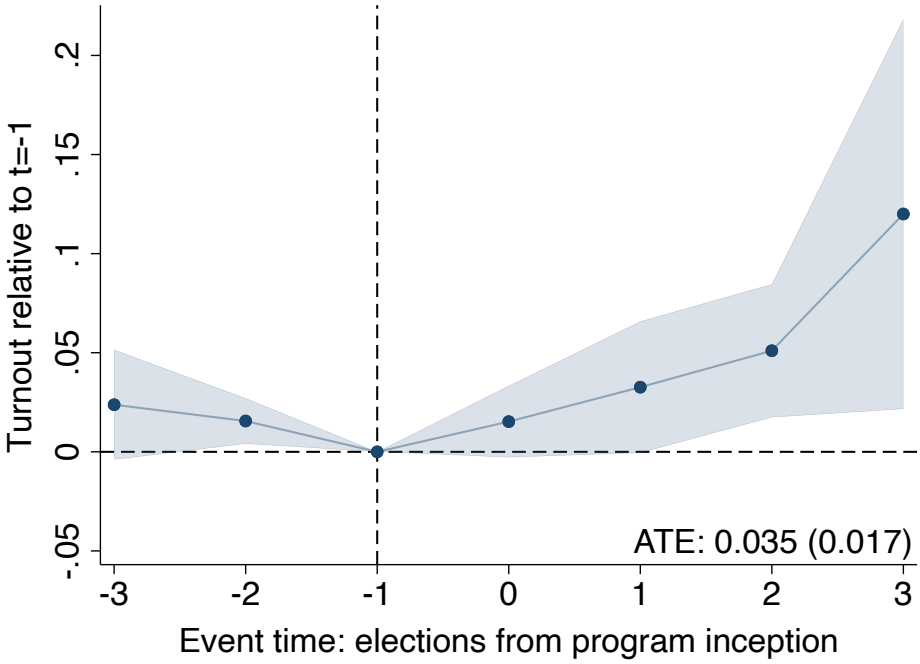
Figure C3: Entry Into Local Politics - Additional Age Thresholds



Notes: The figure reports event-study estimates of the effect of exposure to the Tax and School program on the age composition of elected municipal council members. Each panel shows coefficients from equation (2). Each point represents the estimated coefficient for a specific event time (years relative to the program inception), and the bars show 95 percent confidence intervals based on standard errors clustered at the municipality level. Panel A plots the effects on the share of council members aged 20 or below, panel B for those aged 30 or below. All specifications include municipality and year fixed effects. Each graph also reports the average treatment effect estimated from equation (1), its associated standard error, the number of observations, and the average of each outcome variable.

C3 Accounting for Demographic Confounders in Turnout Estimates

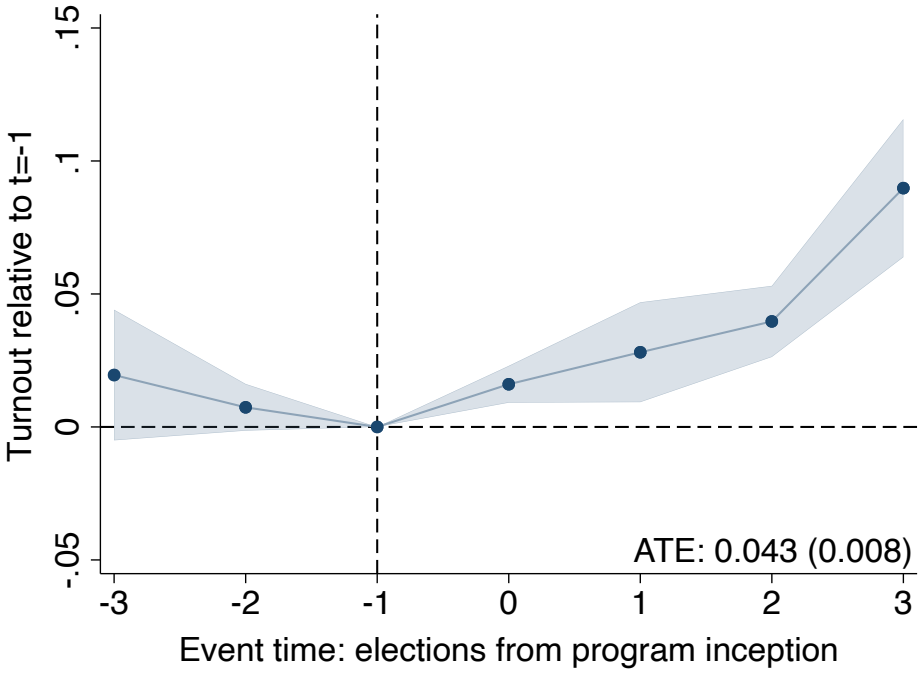
Figure C4: Accounting for Demographic Confounders in Turnout Estimates



Notes: This figure depicts the dynamic treatment effects from estimating equation (2), an event-study regression of turnout in national elections on time relative to program implementation. The model augments the baseline specification, which includes municipality and election year fixed effects, with interactions between election year dummies and quintiles of the age share below 15 dummies. Each point represents the estimated coefficient for a specific event time (measured in election periods), along with 95 percent confidence intervals based on standard errors clustered at the municipality level. The year prior to treatment (t = –1) is the omitted category. The outcome variable is the municipality-level turnout rate, defined as the share of registered voters casting a ballot in national elections, as reported in the historical archive of the Italian Ministry of the Interior. Event time is measured in elections rather than years: event time +1 corresponds to the first election after treatment (on average 4.2 years later), event time +2 to the second election (about 8.4 years later), and so on. The sample covers 45,980 municipality–election observations between 2000 and 2024. The graph also reports the average treatment effect estimated from equation (1) and its associated standard error.

C4 Accounting for Treatment Heterogeneity in Turnout Estimates

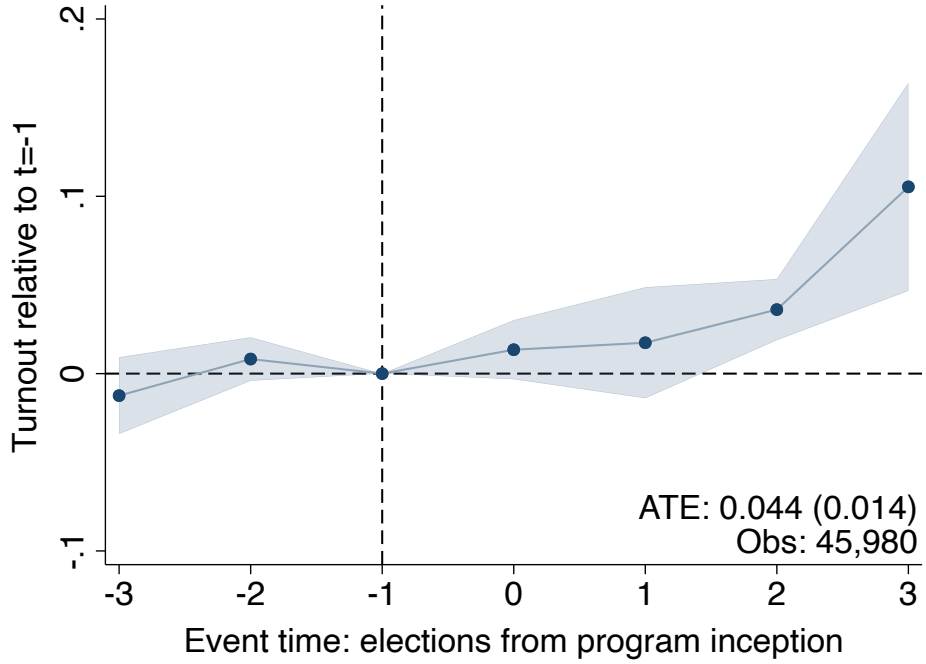
Figure C5: Accounting for Treatment Heterogeneity in Turnout Estimates



Notes: This figure depicts the dynamic treatment effects from estimating equation (2), an event-study regression of turnout in national elections on time relative to program implementation. I construct a municipality-level proxy for the share of treated potential voters, combining information on the timing of program adoption with the size of the cohorts that would have reached voting age by each election. I then re-estimate the baseline specification, which includes municipality and election year fixed effects, by weighting observations according to this predicted exposure measure, so that municipalities where treated cohorts constitute a larger share of the electorate receive proportionally greater weight. Each point represents the estimated coefficient for a specific event time (measured in election periods), along with 95 percent confidence intervals based on standard errors clustered at the municipality level. The year prior to treatment (t = –1) is the omitted category. The outcome variable is the municipality-level turnout rate, defined as the share of registered voters casting a ballot in national elections, as reported in the historical archive of the Italian Ministry of the Interior. Event time is measured in elections rather than years: event time +1 corresponds to the first election after treatment (on average 4.2 years later), event time +2 to the second election (about 8.4 years later), and so on. The sample covers 45,980 municipality–election observations between 2000 and 2024. The graph also reports the average treatment effect estimated from equation (1) and its associated standard error.

C5 Mobility-Adjusted Turnout Estimates

Figure C6: Mobility-Adjusted Turnout Estimates



Notes: This figure depicts the dynamic treatment effects from estimating equation (2), an event-study regression of turnout in national elections on time relative to program implementation, with treatment measured using a mobility-adjusted exposure variable. For each municipality d and election period t, treatment is defined as

$$\widetilde{S}_{d,t} = r_d S_{d,t} + \sum_{o \neq d} \omega_{od} S_{o,t},$$

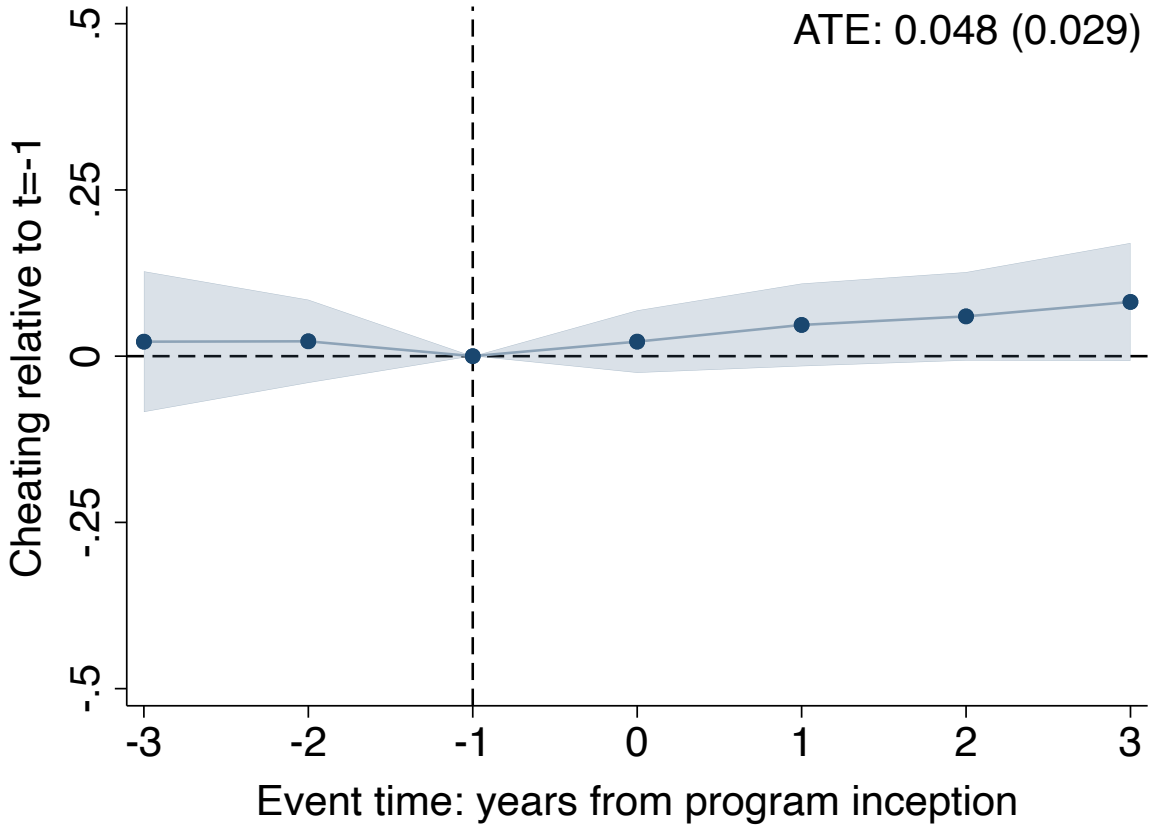
where $S_{o,t}$ denotes program exposure in municipality o, r_d is the average share of residents in d who also originated from d, and ω_{od} is the average share of residents in destination d who originated from municipality $o \neq d$. This measure is constructed using ISTAT administrative data on transfers of residence over the 2007–2015 period. Because the mobility-adjusted treatment variable is continuous, the event-study is estimated using the continuous-treatment version of the de Chaisemartin and D'Haultfœuille (2024) estimator. Specifically, I use the `continuous(#)` option in `did_multiplegt_dyn`, which accommodates settings where groups differ in their period-one treatment intensity. With continuous baseline treatment, the estimator assumes that groups' untreated outcome evolution is a polynomial function of period-one treatment (I set the polynomial order to 2). Each point represents the estimated coefficient for a specific event time (measured in election periods), along with 95 percent confidence intervals based on standard errors clustered at the municipality level. The year prior to treatment (t = –1) is the omitted category. The outcome variable is the municipality-level turnout rate, defined as the share of registered voters casting a ballot in national elections, as reported in the historical archive of the Italian Ministry of the Interior. The sample covers 45,980 municipality–election observations between 2000 and 2024. The graph also reports the average treatment effect estimated from equation (1) and its associated standard error.

D Robustness Checks and Alternative Specifications

E1 Testing Within-Municipality Spillover Effects

Figure E1: Testing Within-Municipality Spillover Effects

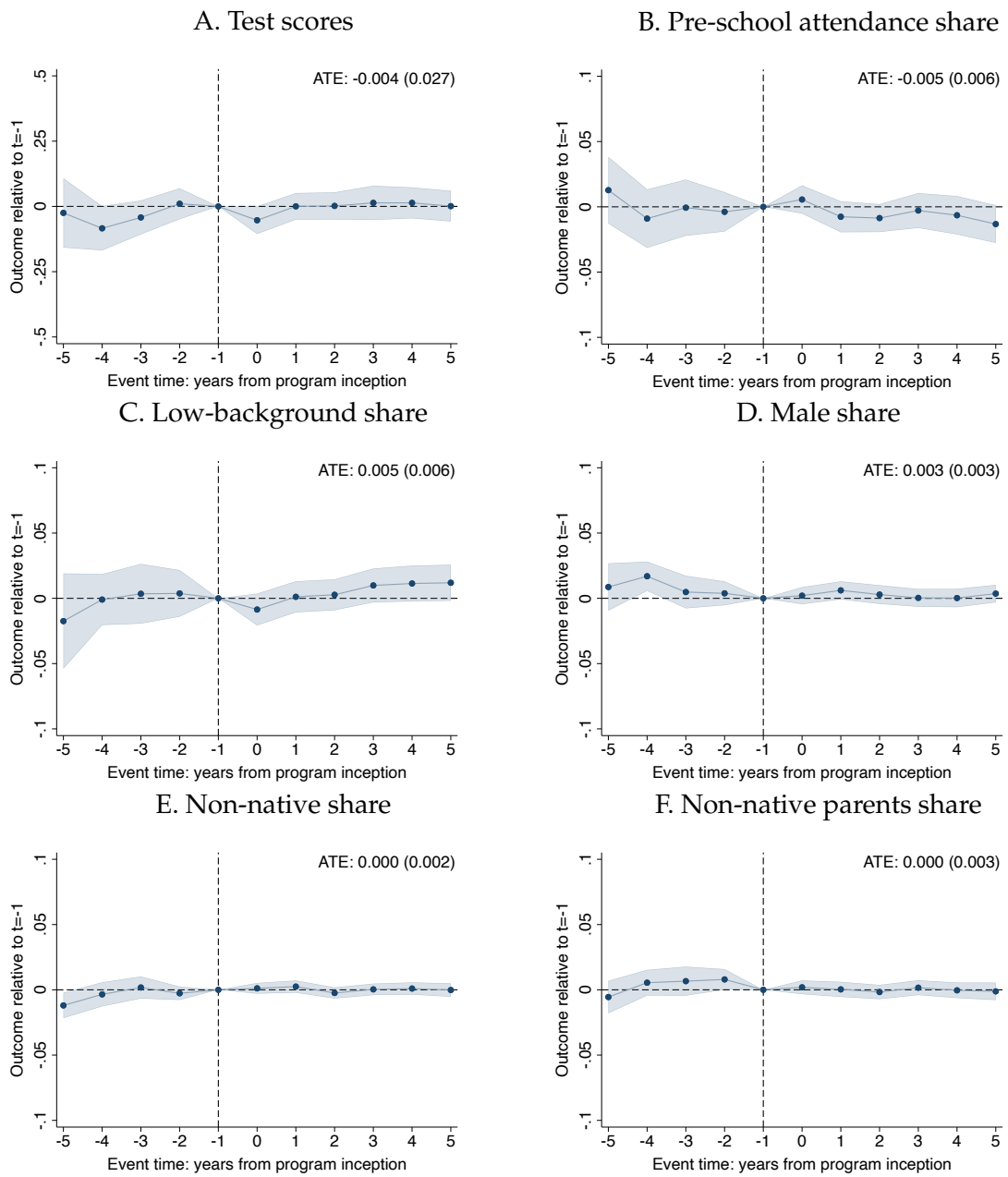
A. *Outcome*: 2nd-grade cheating rate
Adoption: 5th-grade classes in same school



Notes: This figure presents event-study estimates testing for spillover effects on cheating behavior in untreated student cohorts. It examines whether cheating behavior changed among second-grade classes, who were never eligible for the program, following the program's adoption in fifth-grade classes within the same school. The dynamic treatment coefficients are estimated using equation (2), with the year prior to treatment (t = –1) as the omitted category. The outcome variable is the standardized class-level cheating score based on INVALSI detection algorithms, averaged across math and language tests. Vertical bars denote 95 percent confidence intervals based on standard errors clustered at the municipality level. In panel A, the event window is limited to [–3, +3] due to the shorter availability of INVALSI cheating data for second-grade assessments. The lack of significant dynamics supports the interpretation that cheating reductions in treated schools are driven by direct program exposure rather than indirect spillovers or concurrent shocks. The graph also reports the average treatment effect estimated from equation (1) and its associated standard error.

E2 Testing for Compositional Change in Student Characteristics

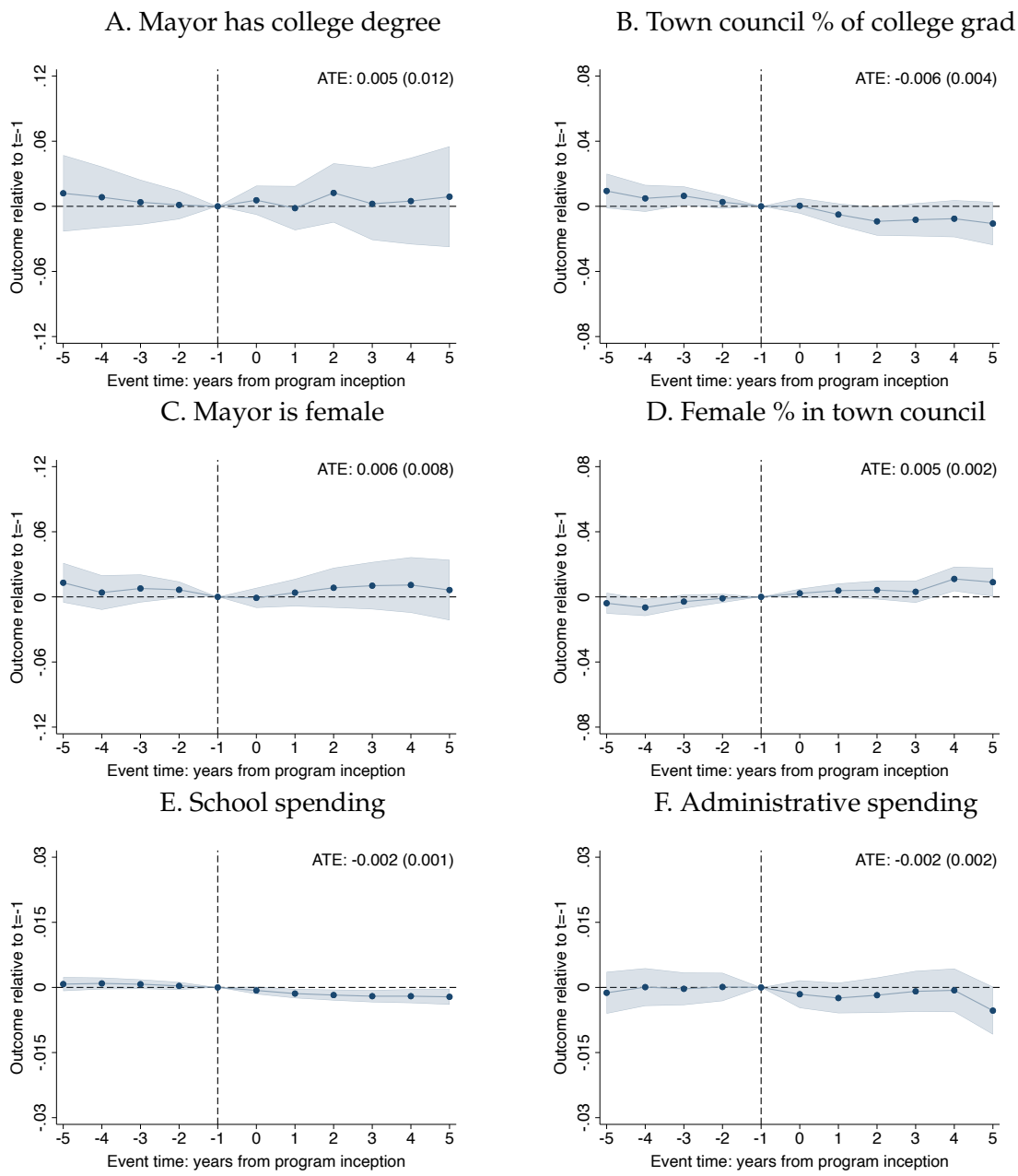
Figure E2: Testing for Compositional Change in Student Characteristics



Notes: This figure presents event-study estimates testing whether observable classroom characteristics changed around the time of program adoption. Each panel plots dynamic treatment effects estimated from equation (2). Panel A reports average standardized test scores at the class level. Panel B shows the share of students who attended pre-school; Panel C depicts the proportion of students from a low socio-economic background (defined as both parents having at most lower secondary education). Panels D through F examine demographic composition, including the share of male students, the share of first-generation immigrant students, and the share of students with at least one foreign-born parent.

E3 Political Outcomes Around the Program Inception

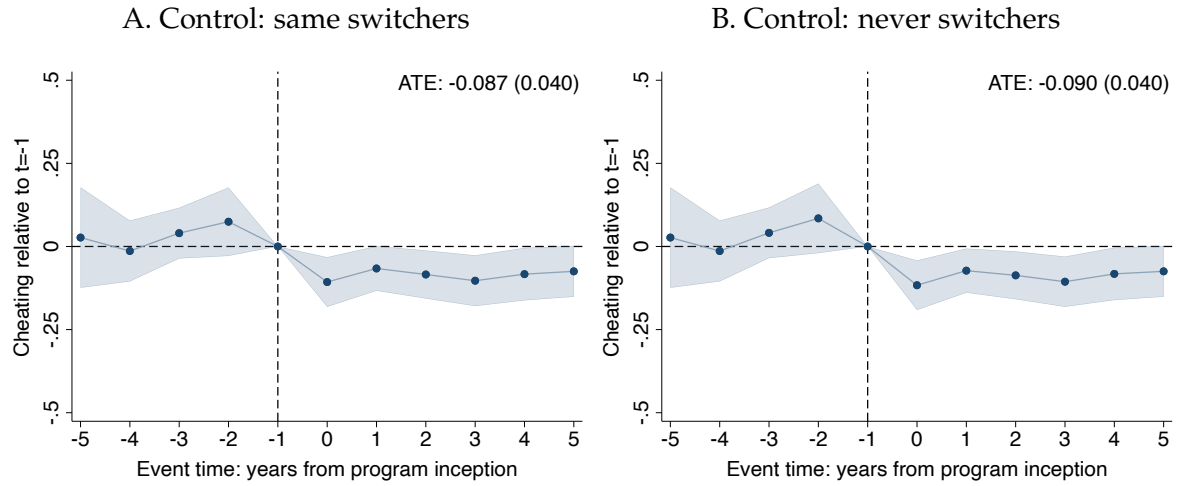
Figure E3: Political Outcomes Around the Program Inception



Notes: This figure presents event-study estimates testing whether local political outcomes changed systematically around the time of program implementation. Each panel plots dynamic treatment effects estimated from equation (2). Panel A shows the likelihood that the mayor has a college degree; Panel B depicts the share of college-educated members in the town council. Panels C and D report the gender composition of local government, measured as a binary indicator for whether the mayor is female and the share of women in the town council. Panels E and F examine municipal spending outcomes: per capita school and administrative spending. The absence of significant pre- or post-treatment effects across these outcomes supports the interpretation that program take-up is not driven by political selection, nor does it induce major changes in local governance or public investment.

E4 Control Group Definition

Figure E4: Control Group Definition



Notes: This figure presents robustness checks on the event-study estimates of program effects using alternative control group definitions. Both panels plot dynamic treatment effects estimated from equation (2). Panel A restricts the estimation to municipalities that eventually adopt the program (switchers) and includes only those cohorts for which all event-time coefficients are identifiable, thereby avoiding changes in the composition of the comparison group over time. Panel B limits the control group to municipalities that never adopt the program (never-treated). In both panels, the outcome variable is the standardized class-level cheating score based on INVALSI detection algorithms, averaged across math and language tests. Vertical bars represent 95 percent confidence intervals based on standard errors clustered at the municipality level. The consistency of results across both specifications supports the robustness of the identification strategy and mitigates concerns about treatment effect heterogeneity or differential trends across cohorts.

E Counterfactual Simulations

Basic assumptions. The OLG model delivers a law of motion for mean civic capital $\bar{\theta}_{m,t}$, while turnout depends on the full adult distribution through a threshold rule. To obtain a tractable mapping from the model state to turnout, the counterfactual simulations impose three closures.

1. *Latent-index representation.* Adult civic capital is normally distributed with time-invariant dispersion, and the participation cutoff is normalized:

$$\theta_{i,m,t} \sim \mathcal{N}(\bar{\theta}_{m,t}, 1), \qquad \theta_t^* \equiv 0.$$

Participation occurs if and only if $\theta_{i,m,t} \geq 0$, so turnout satisfies

$$S_{m,t} = \Pr(\theta_{i,m,t} \geq 0) = \Phi(\bar{\theta}_{m,t}), \tag{F1}$$

where $\Phi(\cdot)$ is the standard normal cdf. Define the latent turnout index

$$y_{m,t} \equiv \Phi^{-1}(S_{m,t}). \tag{F2}$$

Under (F1), $y_{m,t}$ equals the municipality-level latent mean civic capital, measured in standard deviation units.

2. *Reduced form aggregate dynamics.* The OLG aggregation implies that turnout dynamics can be summarized by a reduced form persistence parameter and a reduced form program coefficient. Rather than separately calibrating intergenerational transmission, local spillovers, and depreciation, I work directly with the annual law of motion for the latent index:

$$y_{m,t} = a\, y_{m,t-1} + c_m + b\, e_{t-1}, \qquad a \in (0,1), \tag{F3}$$

where a is the annual persistence parameter, c_m is a city-specific secular drift in latent voting propensity, and b captures the effect of exposure to the civic-education program. In the structural notation of the model, a corresponds to the reduced-form composite $\delta(\rho + \lambda)$ and b to $\delta\gamma$, but turnout data alone do not separately identify (ρ, λ, δ). I therefore estimate a directly from observed turnout dynamics and interpret it as a reduced-form persistence parameter.

3. *Nationwide scale-up and exposure share.* The program is introduced nationally in 2026 and remains in place thereafter, but penetration in the adult electorate rises only gradually as treated cohorts reach voting age. With voting age 18 and life expectancy 83, the electorate spans 65 one-year cohorts. Hence, under a permanent nationwide reform the exposed share is

$$e_t = \min\left\{\max\left(\frac{t-2025}{65}, 0\right), 1\right\}.$$

Thus $e_t = 1/65$ in 2026, $2/65$ in 2027, and full penetration is reached in 2090. Because adult civic capital at time t reflects youth socialization in $t-1$, exposure enters (F3)

with a one-year lag as e_{t-1}.

Estimation and computation. The simulation is disciplined by observed turnout data for Bologna and Naples. I proceed in four steps.

1. *Initial conditions from data.* For each city $m \in \{\text{Bologna}, \text{Naples}\}$, I initialize the latent index in 1992 using observed turnout:

$$y_{m,1992} = \Phi^{-1}(S_{m,1992}).$$

   This yields the starting values for the forward simulation.

2. *Estimating persistence and city-specific drift.* I use pre-2026 observed election transitions to estimate the annual persistence parameter a and the city-specific drifts (c_B, c_N). Because turnout is observed only in election years, the estimating equation is written over irregular gaps:

$$y_{m,t} = a^{g_{m,t}} y_{m,t-g_{m,t}} + c_m \frac{1 - a^{g_{m,t}}}{1 - a} + u_{m,t}, \tag{F4}$$

   where $g_{m,t}$ is the number of years since the previous observed election in city m. For any candidate value of a, (F4) is linear in the city-specific drifts, so I estimate a by grid search and recover (c_B, c_N) by least squares.

3. *Program impact calibration.* I calibrate b to match the empirical magnitude of the turnout effect at the election-cycle horizon: an increase of approximately 4.3 percentage points after 4.2 years of exposure (Figure 9). Let $\Delta S_{4.2} \approx 0.043$ denote this increase relative to the no-program path. Under (F3), and using a first-order linearization of $S = \Phi(y)$ around a reference turnout level S^{ref}, the reduced-form coefficient b is chosen so that the cumulative turnout increase generated by the model after 4.2 years equals 0.043.

4. *Forward simulation.* Given (a, c_B, c_N, b) and the exposure path $\{e_t\}_{t \geq 2026}$, I simulate (F3) annually from 1992 to 2176 for each city and map the latent index back into turnout using $S_{m,t} = \Phi(y_{m,t})$.

Extending the counterfactual model to allow for directed migration. The baseline exercise abstracts from mobility by implicitly treating each city as a closed electorate. I extend the model by allowing for directed migration from Naples (N) to Bologna (B) after the nationwide reform. The idea is a stylized *civic drain*: when relatively more civic individuals leave the low-civic city, the resident mean civicness in Naples declines, while Bologna gains from inflows.

Let $y^{\star}_{m,t}$ denote the latent index generated by the baseline transition (F3). I model migration as an additive post-reform shift in the latent index:

$$y_{B,t} = y^{\star}_{B,t} + \mu_t s, \tag{F5}$$

$$y_{N,t} = y^{\star}_{N,t} - \mu_t s, \tag{F6}$$

Table F1: Reduced Form Calibration Values

Object	Symbol	Value	Description
Annual persistence	a	estimated	Reduced form persistence parameter estimated from pre-2026 election transitions in Bologna and Naples. In the structural notation of the model, a corresponds to the composite term $\delta(\rho + \lambda)$.
City-specific secular drift	c_B, c_N	estimated	City-specific annual drift in the latent turnout index, estimated jointly with a from pre-2026 turnout transitions. Captures secular local forces depressing or raising participation independently of the reform.
Program effect (latent index)	b	calibrated	Reduced form coefficient chosen so that the model implies an increase in turnout of approximately 4.3 percentage points after 4.2 years of exposure, consistent with Figure 9.
Program adoption year	t_0	2026	Counterfactual nationwide scale-up begins in 2026.
Directed migration intensity	μ	0.5%, 1.5%, 3%	Assumed annual civic drain intensity under low/mid/high migration scenarios, active for $t \geq t_0$.
Selection premium of migrants	s	data-based	Latent civic premium embodied in migrants, proxied by the initial latent-index gap between Bologna and Naples.
Simulation window	–	1992–2176	Pre-period: 1992–2025; post-period: 2026–2176.

where $\mu_t \geq 0$ governs the intensity of civic drain at time t, and $s > 0$ is the latent-index premium embodied in movers. Turnout with migration is then

$$S_{m,t} = \Phi(y_{m,t}), \qquad m \in \{B, N\}. \tag{F7}$$

I assume migration starts only once the reform is in place:

$$\mu_t = \mu \cdot \mathbf{1}\{t \geq 2026\}, \tag{F8}$$

so that pre-reform paths are identical across migration scenarios. This delivers a single Bologna path and a single Naples path before 2026, with divergence beginning only after the reform.

I consider three values of the post-reform migration intensity,

$$\mu \in \{\mu_L, \mu_M, \mu_H\}, \qquad 0 \leq \mu_L < \mu_M < \mu_H, \tag{F9}$$

corresponding to *low*, *middle*, and *high* civic-drain scenarios. In the implementation, these are $\mu_L = 0.005$, $\mu_M = 0.015$, and $\mu_H = 0.030$.

The latent premium s is proxied by the initial gap between Bologna and Naples:

$$s = \Phi^{-1}(S_{B,1992}) - \Phi^{-1}(S_{N,1992}). \tag{F10}$$

This normalization implies that stronger migration scenarios transfer a larger fraction of the initial latent civic-capital gap from Naples toward Bologna.

Given initial conditions $(S_{B,1992}, S_{N,1992})$, the simulation proceeds as follows for each scenario $\mu \in \{\mu_L, \mu_M, \mu_H\}$:

1. Initialize latent indices $y_{B,1992} = \Phi^{-1}(S_{B,1992})$ and $y_{N,1992} = \Phi^{-1}(S_{N,1992})$.

2. For each year $t > 1992$, compute baseline latent indices

$$y^{\star}_{B,t} = a\, y_{B,t-1} + c_B + b\, e_{t-1}, \qquad y^{\star}_{N,t} = a\, y_{N,t-1} + c_N + b\, e_{t-1}.$$

3. Apply the migration adjustment (F5)–(F6), with timing governed by (F8).

4. Map the resulting latent indices back into turnout using $S_{m,t} = \Phi(y_{m,t})$.

This migration extension is intentionally stylized. It should be interpreted as a scenario analysis that captures how selective mobility can amplify cross-city divergence in civic participation, rather than as a full demographic accounting model of migration flows.