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(Working Papers)

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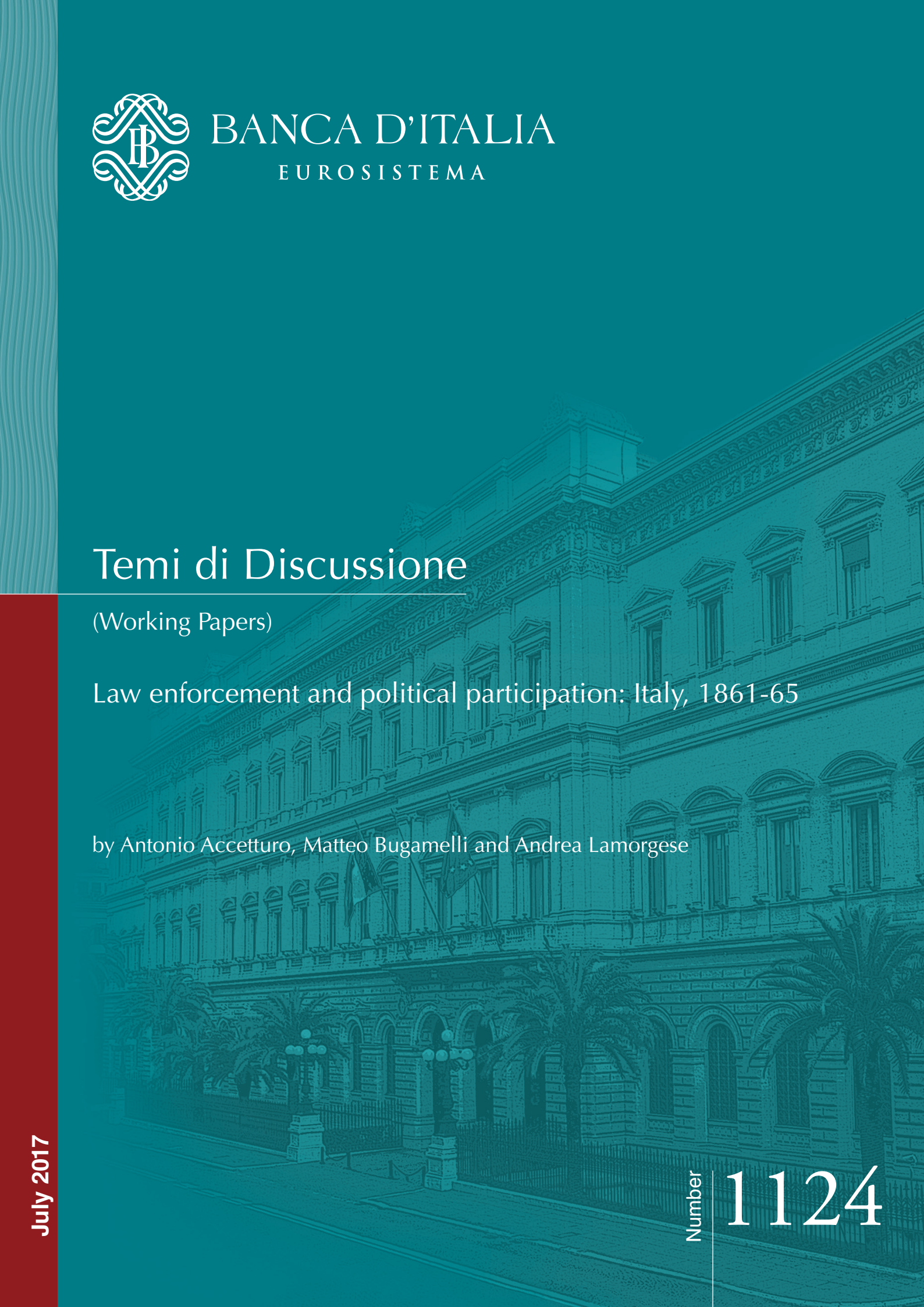

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LAW ENFORCEMENT AND POLITICAL PARTICIPATION: ITALY, 1861-65

by Antonio Accetturo†, Matteo Bugamelli* and Andrea Lamorgese*

Abstract

Does tougher law enforcement positively affect political participation? This paper addresses this question, which hinges upon the causal impact of formal institutions on informal ones, by using a historical event from 19th century Italy. This event was the Pica Law, which was introduced in 1863 to fight a surge of criminal violence in Southern Italy and to ensure a safer environment for wealthy people, the only ones allowed to vote at that time. Our main finding, obtained using a spatial regression discontinuity technique in a diff-in-diffs framework, is that voter turnout greatly increased in those areas where the Pica Law was applied, compared with bordering and otherwise similar areas. This result is confirmed by a number of robustness checks and placebo exercises and turns out to be persistent over time.

JEL Classification: D72, R5.
Keywords: turnout, electoral results, spatial discontinuity.

Contents

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1 Introduction[1]

Formal and informal institutions are often considered important in explaining wide differences in economic development across countries and regions. *Formal* institutions, such as law enforcement and protection of property rights, may favor saving, investment, and innovation rates (Acemoglu et al., 2001, 2005). *Informal* institutions, like cultural values of cooperative behavior and mutual trust, may support economic exchanges and innovation (Guiso et al., 2008; Tabellini, 2008; Knack and Keefer, 1997; Gorodnichenko and Roland, 2011a,b).

This paper studies empirically the interaction between formal and informal institutions, asking in particular whether a tougher law enforcement may strengthen an informal institution like citizens' willingness to vote at general elections. Indeed, turning out on the election day is often considered to be an act of civicness, driven by the genuine desire to contribute to the functioning of the political system. As Tabellini (2008) points out, turning out on election day is the typical situation in which "individuals behave contrary to their immediate material self-interest, [...] because they have internalized some norms of good conduct."[2]

The idea that formal and informal institutions may influence each other is not new in the literature, especially from a theoretical perspective. On the one hand, cultural values are generally seen as a constraint in the political process that shapes formal institutions (Roland, 2004). Putnam et al. (1993) argues that the performance of (formal) Italian regional governments is closely related to the local en-

[1]We wish to thank Sascha Becker, Julie Cullen, Guido de Blasio, Ted Miguel, Paolo Sestito, Noam Yuchtman, two anonymous referees from the Journal of Economic Behavior and Organizations, and the participants at workshops/seminars at the Bank of Italy, University of Siena, Bocconi University, NARSC, and IRVAPP for very helpful comments. We also thank Vernon Henderson, Helios Herrera, Massimo Morelli, Henry Overman, Lucia Rizzica, Giacomo Rodano, Mike Ting, Jacques Thisse, Mariano Tommasi, and Pietro Tommasino for early discussions on the topic. We are grateful to Giuseppe Albanese, Michele Cascarano, and Andrea Linarello for very useful advices in the management of the datasets and to Marco Chiurato and Massimiliano Forchini for editorial assistance. All remaining errors are ours. The views expressed in the paper are those of the authors and do not necessarily correspond to those of the Bank of Italy.

[2]Observed levels of turnout rates can be hardly explained by rational choice theory (instrumental voting) (Geys, 2006; Dhillon and Peralta, 2002). Instrumental voting implies that the individual's expected benefits for contributing to elect the most preferred candidate should be discounted by the probability to be the pivotal voter (which is low even in small electorates) and by the presence of positive costs to go to vote.

dowments of trust and cooperation. On the other hand, the ability of a state to protect a single person from violence or exploitation by another individual or group of individuals may be an essential determinant of a his/her willingness to cooperate with others (Tabellini, 2008; Accetturo et al., 2014).

On empirical grounds, the evidence is more scant and definitely weak. When based on cross-country analyses, there are obvious identification issues: as argued by Guiso et al. (2008), "when we observe that Swedes evade tax less than Brazilians, we do not know to what extent this is the effect of Sweden's higher social capital or superior tax enforcement."

We solve these identification issues using a historical event of an increase in law enforcement in some areas of Southern Italy in XIX century, and estimate the causal impact on changes in voters' turnout in general elections.

After Italy's unification in 1861, an insurgency movement spread out in the interior parts of the continental South (that is *Mezzogiorno*, excluding Sicily and Sardinia islands): although the uprising had political origins, it was, and still is, labeled as "brigandage". Brigands aimed their acts of violence against rich landowners and petty bourgeois, which were the only affluent individuals in a mostly agricultural world and were considered as turncoats for being responsible for Italy's unification. Importantly for our purposes, the people subject to violence were also the only ones allowed to vote in parliamentary elections, as the electoral law limited the active electorate to the more affluent and lettered male citizens (2 per cent of the total population).

To oppose brigandage, in 1863 the Italian government established the martial rule in some provinces of the South. This was the so-called Pica Law (henceforth, PL), named after its proponent, Giuseppe Pica. For our identification purposes, the Italian situation at that time and PL have two important merits. First, PL was a hasty (and, somehow, clumsy) response to brigandage. The government did not have time to re-draw administrative maps and therefore used ancient provincial boundaries to define the areas of enforcement of PL. This implies that the provinces "treated" by

PL comprised core (generally, rugged) areas where the fighting between brigands and the army was more intense, and a sort of periphery, which was not directly touched by brigandage but was used at most as a buffer zone where the army retained the possibility to trail and chase fugitive criminal bands. In these peripheral areas, usually located on the border with provinces that were "non-treated," police forces were engaged in the prevention of crime to deter the spread of brigandage. In other words, neighboring areas in treated and non-treated provinces were different because only in the former ones crime prevention activity and overall safety increased thanks to PL. This allows us to use a difference-in-differences approach in a spatial regression discontinuity framework (Dell, 2010) for a clean identification of the causal impact of law enforcement on electoral turnout. A second advantage derives from the fact that PL has been introduced in 1863, that is only two years after the establishment of a stable parliamentary system for Southern citizens in centuries. This feature guarantees that habit formation in voting is not an issue for us, contrary to what found by a large literature highlighting the importance of past levels of electoral turnout in predicting current ones (Bendor et al., 2011). This excludes that deep-rooted voting habits may bias our estimates.

We find that PL generated a rise in electoral turnout between 11 and 14 percentage points from 1861 to 1865 in treated areas as compared to non-treated ones. This is a sizable effect in a period in which the percentage of eligible voters showing up at polls averaged around 60 per cent. This result is confirmed even when we take into account local geographical or economic characteristics and is not driven by contamination effects or omitted variable biases. We also rule out alternative explanations: since higher turnout did not entail a change in the political balance among parties, we can exclude that PL rose the incentives to be connected to the ruling party as in electoral models with private rent-seeking (see, among others, Fisman, 2001; Diermeier et al., 2005; Ferguson and Voth, 2008; Acemoglu et al., 2010). Lastly, PL had also long-lasting effects: treated municipalities displayed statistically significant larger turnout rates for almost 30 years after the repeal of the law.

This is consistent with the idea that historical events can have persistent social and economic consequences which, in turn, may also affect the economic development of an area (Nunn, 2009).

As for all papers based on very specific historical events, one important issue is the external validity of the results. In other terms, how can the estimated effects of a ruthless martial law applied at the end of the XIX century in a just unified and still underdeveloped country be policy-relevant nowadays? To answer this question, we first of all notice that our identification strategy comes to help. We identify the effect using as treated areas border regions where there was no extreme application of the martial law but more simply a safer context not too dissimilar from what nowadays would be implemented through a careful control of the territory by the police. Thus the finding that a police-induced safer environment is a determinant of voter turnout is interesting for those places where the relationship between state capacity and civicness is still an open issue (see Glaeser and Sims, 2015; Gibbons, 2004; Glaeser, 2011).[3] Admittedly, Italy's unification represents a very specific phase of the evolution of voting preferences – one in which Italians were called to form new political preferences, adapt to new laws and new formal institutions. Nevertheless we deem our results to be informative for those countries that still have to complete their transition toward a democratic system. A further challenge to external validity concerns the fact that only 2 per cent of the Italian Southern population was eligible to vote so that the choice of voting could be more the result of strategic behavior than a proxy of informal institutions. In this regard, we recall that available experimental evidence shows that strategic voting underpredicts turnout levels when groups are large enough (see, for example, Levine and Palfrey (2007), when the size of the electorate exceeds 30). In this sense, our setting about Southern Italy after unification may not be too different from the one of countries nowadays, where the absolute number of voters is relatively low and law enforcement and security are assigned to local police forces.

[3]In Appendix A, we provide some evidence based on cross-country data about the relation between law enforcement and political participation nowadays.

The remaining of the paper is organized as follows. The next section discusses in greater detail the related literature and our contribution to it. Then, we describe the historical and institutional setting. Section 4 presents the dataset and discusses the empirical specification with all the possible challenges to the identification of a causal effect. The baseline results and a set of robustness checks and placebo exercises are in section 5, while the next one analyzes the long-run impact of PL. The last section concludes.

2 Related Literature

The study of the interaction between civic involvement and public intervention evolves around the idea that individuals' willingness to behave civically is strongly influenced by economic and institutional conditions (Krueger, 1974). Bisin and Verdier (2001), Tabellini (2008) and Guiso et al. (2008) present models of intergenerational transmission of values. In Tabellini's model, any institutional change, such as an increase in the quality of law enforcement, can be amplified by cultural transmission. Most importantly, voting may determine path dependence in the transmission of civicness: if initial conditions are favorable, then individuals will choose strong legal enforcement, otherwise they may opt for limited enforcement. Glaeser et al. (2007) build a model to show that democracies are more stable in areas with a higher endowment of human capital.[4] Aghion et al. (2010) and Pinotti (2012) analyze the interaction between trust and public regulations and show how more stringent regulations may cause that only "bad agents" (for example, polluting firms) remain on the market, thus increasing the need for even stricter regulations. A similar issue is investigated by Carlin et al. (2009) with regard to financial markets. Accetturo et al. (2014) use a regression discontinuity design to show that European Union funds had a negative and causal impact on local endowments of trust and cooperation.

[4]Empirical evidence on this was provided by Barro (1999) and Papaioannou and Siourounis (2008). On the relationship between education and civic involvement see also Milligan et al. (2004), Dee (2004), and Jaitman (2013).

All in all, this literature supports, mostly on a theoretical ground, the idea that public intervention may induce relevant shifts in the local endowments of civicness, even in the short run. However, the type of intervention matters for the sign of the effect. Policies that are likely to raise the opportunities for rent-seeking (e.g., transfers or market regulations) may reduce civicness, while policies like law enforcement or schooling favor the accumulation of civic capital. Our paper contributes to this literature providing a first empirical investigation on the causal impact of law enforcement on civicness.

A second stream of literature related to our work is that on crime (or violence) and political participation. Fernandez and Kuenzi (2010) find that citizens exposed to criminal violence have a lower level of satisfaction with regards to the functioning of democracy in their country; according to Carreras (2013), they are also less prone to support political institutions. Contrary to ours, these papers are based on conditional correlations without tackling endogeneity issues. The only exception is the work by Collier and Vicente (2014) which shows the effects of political violence on electoral turnout in Nigeria using a randomized experiment based on a public awareness campaign against violence: they find that political participation both in State and Presidential elections increased by 7 to 11 percentage points, an estimate quantitatively similar to ours.

Finally, the results of our paper are informative on the debate of whether formal and informal institutions are complement or substitute. The fact that law enforcement reinforces civicness supports the idea that the two types of institutions are not linearly independent as pointed out by Ahlerup et al. (2009), with relevant consequences on the estimation of the marginal effects of good informal institutions on economic growth.[5]

[5] Ahlerup et al. (2009) present an interesting literature review that supports the substitutability hypothesis, especially at the micro level. In their empirical analysis, based on country-level data, they find that the marginal effect of social capital decreases with the quality of formal institutions.

3 Historical events

3.1 The rise of brigandage

In 1859 a process of political consolidation started in the Center and North of the Italian peninsula under the leadership of the Kingdom of Sardinia (that included Sardinia and Piedmont). Originally, the new Kingdom of Italy was not supposed to include the Southern part of the peninsula (Kingdom of Two Sicilies). The annexation of the South, however, was forced by the Garibaldi's Thousands expedition (May 1860) that easily defeated the weak Two Sicilies' army and entered Naples (September 1860).[6] On March 1861 the King of Sardinia was proclaimed as the first King of Italy.

In the aftermath of the annexation, parts of the population of Southern Italy began to express their discontent. There were several reasons for this. First, the majority of the population observed a sudden worsening of their economic conditions due to a new and much heavier tax regime and to a number of new regulations of the agricultural market (Fortunato, 1911). Second, the purchase of public lands by landowners greatly damaged the most humble agricultural laborers who passed from self-employed workers of public lands to precarious employees of landowners. Third, the Kingdom of Italy introduced mass conscription, which implied the abstraction for several years (2 for the army, 5 for the navy) of young and very productive farm hands. Fourth, the Pope's strong opposition to the Italian unification process also played a role: the annexation to the Kingdom of Italy was felt by the majority of the very religious Southern population as a threat to their Catholic faith and their own traditions.

As an extreme form of protest, organized groups of rebels started engaging in criminal activities. Two phases can be distinguished. In the *first phase* (1860-61, i.e.

[6]The final unification to the rest of Italy was achieved after the conquest of the last pockets of resistance (Gaeta, 60 kilometers north of Naples; Civitella, close to the Adriatic coast; Messina, Sicily) and the annexation plebiscites. Italian unification was finalized in three additional steps. Veneto and Venice were annexed in 1866. Latium and Rome in 1870. Trento, Trieste and their relative regions after World War I in 1919.

before and just after the proclamation of Italian unification), there was a generalized rebellion of peasants led by the lower ranks of the disbanded Kingdom of the Two Sicilies' army. On July 1861, the Italian army was provided with exceptional powers, that included mass arrests, destruction of houses and farms, and extensive actions against entire towns. As a consequence of this repression, a *second phase* started (late 1861); bands of brigands retreated in inner and rugged areas, became smaller, and started a guerrilla war against the Italian army. Criminal activities were also widespread and were generally aimed against the richest part of the population and the representatives of the new Government for economic and political reasons. Large estate owners and petty bourgeois concentrated in their hands a very large part of the overall wealth, which was futher expanding thanks to the acquisition of State and Church's land. Moreover, the sudden crumble of the former Kingdom of Two Sicilies was actually driven by the spreading of liberal ideas in the local ruling class. From the rebels' point of view, this was a betrayal against the former King of the Two Sicilies.

In the second phase, these rebellions, known in history under the name of *brigandage*, interested almost all interior regions of the continental South, while they did not occur where economic conditions were comparatively better, as in urban and industrialized areas and in the most productive agricultural regions. Core areas in terms of brigandage were Basilicata, Abruzzo, Northern Apulia, and Calabria.

3.2 Reaction to brigandage: the Pica Law

In the second phase, military repression encountered more difficulties, as bands were now smaller and better trained, moved on a well-known territory (while the army generally lacked of adequate maps), and generally avoided field battles with the army. Moreover, the efficacy of the repression was significantly limited by the fact that, in principle, brigands were supposed to be judged by civil courts and death penalty had been banned by the Sardinia's regulations since 1859.

The persistence of the insurgency constituted a relevant concern for the central

government. Besides the progressive deterioration of public order in brigandage areas, the presence of foreign fighters and the constant aids coming from Rome (still under the Papal sovereignty) actually represented a threat to the unity of the entire state.[7] For this reason, in 1863, the Government supported the bill proposed by MP Giuseppe Pica, aimed at providing an organic set of rules for the repression of brigandage. This is known as the Pica Law (PL).

Enacted on August 15th 1863, PL aimed at providing "temporary and exceptional means of defense" to restore public order. In practice, PL identified a number of provinces "infested by brigandage."[8] As shown in Panel (a) of Figure 1, basically all Southern provinces were interested with the exception of the major urban center of the South (Naples) and wealthier agricultural lands such as Terra di Bari and Terra d'Otranto in Apulia, Calabria Ulteriore I, and Abruzzo Ulteriore I, where brigandage was not spreading. PL-provinces (in red) were, instead, mostly internal with geographic characteristics that made the insurgency easier, like woods or high mountains. In these provinces, PL envisaged new public order rules aimed at repressing and preventing criminal activity.

As for the *repressive* arm, PL temporarily derogated Italy's Constitution (*Statuto Albertino*), as military courts were allowed to rule on brigandage felonies. The new regulations defined a brigand whoever was caught armed in a group of at least three persons,[9] allowed to create militias for hunting brigands, and set prizes to be granted for killing or arresting outlaws. Military courts' penalties included jailing, executions, forced labor, and exile.

As for the *preventing* arm, PL targeted those individuals who, in the proponents' view, were likely to create public order problems. In particular, all "lazy" persons

[7] From the near Papal States, the former King of the Two Sicilies provided constant incitements and financial and military aids to the armed struggle against unified Italy. Brigands also attracted the sympathies of many catholic and conservative powers like Austria, Spain, and Bavaria (linked to the former King with close dynastic ties). From several of these countries, a number of volunteers reached Rome to continue the fight against the newly formed Italian Kingdom.

[8] The list of provinces was published few days later in a decree approved on August 20th, 1863. They were Abruzzo Citeriore, Abruzzo Ulteriore II, Basilicata, Benevento, Calabria Citeriore, Calabria Ulteriore II, Capitanata, Molise, Principato Ulteriore, Principato Citeriore, and Terra di Lavoro.

[9] This made quite impossible to perform normal activities in rural areas like hunting or pasturing.

(i.e., unemployed) or vagabonds could be house arrested, jailed or sent to exile. The designation of an individual as "lazy" was up to a provincial special commission without the possibility to appeal; house arrests, exile or jailing were ordered without a real process. Generally, all individuals with criminal records received this treatment (Cammarano, 1995). Enforcement of such regulation was tough as local police directly accompanied those persons to house arrests and periodically checked their compliance.

The two arms of PL provisions were enforced in different areas. The regions where PL was applied were characterized by a rugged internal area where the fighting between the army and brigands was more frequent due to orographic conditions and a periphery with no brigandage that was used as a buffer zone to contain the spreading of the revolt. The *repressive* arm was enforced in the internal areas, while the *preventive* one in the periphery at the border with provinces where PL was not in force (since no fightings were taking place).

Panel (b) of Figure 1 shows an example of the geographical distribution of repressive and preventive arm areas for the case of Calabria. From late 1861, four large bands of brigands operated in the Sila Plateau at the border between Calabria Citeriore and Calabria Ulteriore II: in 1863 both provinces were declared as "infected" under the provisions of the PL. This implied that on the Sila plateau (red area) the army enforced the repressive provisions; while in the rest of the two provinces only the preventive arm was applied.

PL passed in the Parliament with a very large bi-partisan support of the ruling liberal center-right party (*Destra Storica*) and the left-leaning official opposition (*Sinistra Storica*), in consideration of the emergency nature of the threat. The only group that officially opposed it was the *Estrema*, an extreme left, socialist-leaning group.

PL regulations and the deployment of more than 100,000 soldiers (Candeloro, 1972) succeeded in ending most criminal activities in 1865 by killing or arresting the most important leaders; sporadic uprisings still continued until 1870, when Military

Zones in the South were abolished. PL was revoked on December 31st, 1865.

3.3 Winners and losers: the electoral law

The rural population was the great loser of the repression of brigandage. Besides the excesses of the army and the brigands, peasants greatly suffered from an economic point of view. They lost the possibility to freely move across the country and this represented a major limitation for the share of the population living on pasture. In many cases, strong restrictions were posed on hunting and access to woods (which provided the main source of energy in an agricultural world) was denied several times.

However, the fate of peasantry ranked quite lowly among the new government's concerns. For a newly born country, the military consolidation (even from external pressures) of a sudden unification was first rate. Moreover, peasants were not allowed to vote, as in any mid-XIX century liberal state. Despite having acquired the separation of powers (executive, legislative, and judiciary) that still characterizes contemporary democracies, the active electorate was limited to a really small portion of the population. After the unification, indeed, the Kingdom of Sardinia's electoral rule was automatically extended to the entire country. The elections were based on a majoritarian system with a second round in cases in which none of the candidates reached 50 percent in the first round. According to the 1859 electoral law, eligible voters had to meet the following requirements: (i) being males older than 25; (ii) having reading and writing skills; (iii) having a tax bill of at least 40 liras per year.

The gender and age criteria restricted the group of eligible voters to 5.2 millions of people, 24 percent of the total population (22 millions in 1861). The tax bill and the reading and writing requirements restricted it even more strongly.[10] The interplay of the three criteria left 400,000 eligible voters, about 2 percent of the

[10]Nominal daily wage for an agricultural worker in the South averaged between 0.85 to 1.22 liras (Fenoaltea, 2002; Sipari, 1863), while the national fraction of illiterates was 78 percent in 1861 and ranged from 57-60 percent in Piedmont and Lombardy to 90-91 in Calabria, Sicily, and the island of Sardinia.

total population in 1861.

How were these voters affected by PL? The answer is not straightforward.

In the areas where the *repressive* arm was at work and the fighting against brigands' bands more intense, the presence of the army was particularly welcome for the richest part of the population, as criminal acts were aimed at this group. However, that presence gave also room to several cases of abuse: heavy-handed searches in the houses and pillages were not infrequent, even against well-off individuals (Enciclopedia Italiana, 1930). Even aristocrats, which were typically shielded by the army tight control, were likely to suffer the general disruption of the agricultural activity that was negatively affecting the value of their properties.

The situation was definitely different where only the *preventive* arm was at work due to the absence of brigands' bands. Here voters enjoyed a much safer context characterized by less crime and a lower probability to face peasants' revolts. The disappearance of potential criminals (or individuals with criminal records) also benefitted petty bourgeois, who were more likely to be the target of petty crimes and did not have, unlike landowners, the financial means to afford private protection from criminal activity. This is to say that in these areas the voters were more neatly benefitting from PL.

4 Data and empirical specification

4.1 Data sources

Our empirical analysis is mostly based on three data sources: the dataset collected by the Istituto Carlo Cattaneo (ICC) on political elections in Italy from 1861 to 2008, the 1861 Census, and the *Atlante Statistico dei Comuni* (ASC) managed by the Italian Statistical Office (Istat).

The ICC database collects data on electoral results for all elections of the Kingdom and, later, the Republic of Italy. For earlier elections (from 1861 to 1919), it contains the name of the elected member of Parliament, his/her political affiliation,

the number of votes he/she received, the total number of eligible voters, and the overall turnout. For this period, the Italian political map was partitioned into three levels. The first is the municipality, which is the smallest administrative unit of the Italian state. For electoral purposes, municipalities were grouped into equally-sized (in terms of voters) constituencies; each constituency elected one member of parliament. A group of constituencies formed a province, that is the level at which the treatment status for the PL was defined.

The ICC data indicates all municipalities where there was at least one eligible voter; electoral data (like turnout and the share of votes for each candidate) is instead available at the constituency level.

For the period under analysis (1861 and 1865), each constituency was made of a relatively low number of municipalities. Figure 2 shows the size distribution of the constituencies: the largest one contained 8 municipalities, 85 percent of them had less than 6 municipalities, the average is 4. Restricting to the municipalities with at least one resident eligible voter, we are left with 560 municipalities corresponding to 30 percent of the total number of municipalities in continental South, 144 constituencies, and 16 provinces.[11]

The only exception to the rule that municipalities were a smaller geographical unit than a constituency is the city of Naples, that was, at that time, the most important urban center in Italy. For the first two Italian elections (1861 and 1865), Naples was partitioned into 12 constituencies and was the only municipality in continental South electing more than one member of the Parliament.

The ICC database is then merged with the 1861 Census and Istat's *Atlante Statistico dei Comuni* (ASC) which provide, respectively, data on population size and geographical characteristics at the municipality level.[12]

Two other datasets are used. First, to proxy for local agricultural productivity

[11] Obviously, this is not a representative sample of the South of Italy, in that municipalities with at least one eligible voter are on average larger, less mountainous and with a lower seismic hazard. In other words, they tend to have more amenities than average, which is not surprising considering that richer and more educated individuals tend to locate in larger urban areas (Glaeser and Gottlieb, 2009).

[12] See http://www.istat.it/it/archivio/113712, for details.

we use data on the quality of the soil by the European Soil Database (ESDB).[13] Second, information on the exact location of the fights in the first (1860-61) and in the second (after 1861) phases between the army and brigands and the enforcement of *preventive* and *repressive* arms are obtained from two publications of the Italian Army: Cesari (2010) and Greco (2011).

4.2 Identification

With these data at hand, we aim at establishing a causal link between tougher enforcement due to PL and voters' turnout.

The provinces of the former Kingdom of the Two Sicilies where PL was enforced were not randomly selected. Treated areas were heavily "infested" by brigandage and characterized by geographical and economic conditions that greatly favored the uprising. A simple regression that uses, as a variable of interest, a dummy variable equal to one for PL municipalities would give inconsistent estimates. Indeed, the rugged terrains of treated provinces are likely to increase the costs for voting and the circulation of information, thus affecting turnout. In general, the contemporary presence of brigands' bands and both the *repressive* and *preventive* arms generates relevant confounding factors which prevent the estimate of a causal parameter.

We cope with this problem by adopting a spatial regression discontinuity design (SRDD, Dell, 2010; Becker et al., 2016) in a diff-in-diffs framework. SRDD techniques take into account the fact that the border between treated and non-treated areas forms a bi-dimensional discontinuity in longitude-latitude space; this differs from the typical regression discontinuity (RD) design in which thresholds are determined by a single dimension (age or income, for example). As stressed by Dell (2010), the identifying assumptions in a spatial setting are identical to those in

[13] ESDB provides very detailed data (1-km-by-1-km) on a number of geological characteristics. As in Combes et al. (2010), we aggregate this information at municipality level; given that soil characteristics are usually discrete, we use the value that appears more often in each area. We consider 10 geological characteristics: Topsoil mineralogy (7 classes), Subsoil mineralogy (6 classes), Parent material hydrogeological type (8 classes), Topsoil available water capacity (4 classes), Subsoil available water capacity (5 classes), Depth to rock (5 classes), Soil profile differentiation (4 classes), Soil erodibility (5 classes), Carbon content (3 classes), and Hydrogeological class (7 classes).

a single-dimensional RD; the methodological challenge relates, instead, on how to specify the polynomial for the two forcing variables (latitude and longitude).

Following Dell (2010), we estimate the following equation:

$$\Delta turn_{mjb} = \alpha + \beta T_m + f(\text{geographic location}_m) + \kappa\phi_b + \varepsilon_{mjb} \tag{1}$$

where m and j, and b index, respectively, the municipality, the constituency where the municipality is located, and the border the municipality is close to.[14] The dependent variable $\Delta turn_{mjb}$ is the change in turnout between 1861 and 1865 elections and is measured at the constituency level. T_m is a dummy equal to one if municipality m belongs to a PL province and zero otherwise. ϕ_b are border fixed effects.

$f(\text{geographic location}_m)$ is the polynomial for the forcing variables. Here we adopt two approaches. Following closely Dell (2010), we use a flexible polynomial that includes both longitude and latitude. In what follows we refer to this as *Dell-specification.*[15] In an alternative approach, which we consider a robustness check, all regressions are run with a standard uni-dimensional RD by using the minimum distance to the border as a forcing variable and a second-degree polynomial. From now on we refer to this as *Dist-specification.*

To reinforce similarity between treated and non-treated areas, as in Dell (2010), we restrict the sample to the municipalities that are distant at most 50 kilometers from the border. In this way, the sample used in the empirical analysis restricts to 290 observations in 89 constituencies and 14 provinces.

Two things are worth noticing in the specification of equation (1). First, equation (1) is a multi-level regression, where the dependent variable is measured at a more aggregated level (the constituency) than most of the explanatory variables. Thus we always cluster standard errors at the constituency level and run weighted estimates

[14] Going back to panel (a) of Figure 1, there are four different border between treated and non-treated provinces, namely: the within Campania border, the within Abruzzi border, the within Calabria border, and the Basilicata-Apulia border.

[15] More specifically, being x the longitude and y the latitude of municipality m, $f(\text{geographic location}_m) = x_m + y_m + x_m^2 + y_m^2 + x_m^2 y_m + x_m y_m^2$.

to take into account the contribution of each municipality to the electoral results of the constituency it belongs to.[16] As to weights, in the baseline estimates we assume that, in each constituency, voters are a fixed share of the population so that weights are equal to each municipality's share of the total population of its constituency. Different weighting schemes are used for robustness purposes. We deem such a multi-level specification to be preferable to one where all the data are collapsed at the constituency level since in the latter case we would not know how to aggregate the forcing variable and the other covariates being the information on the spatial distribution of *voters* across municipalities missing. However, we will show such constituency-level regressions as a robustness check.

A second remark relates to the city of Naples that, as we said, was divided into 12 constituencies. In the baseline regression, we consider those 12 constituencies as 12 different observations (i.e., we have 12 data points on turnout) with identical values for the forcing variables and identical weight equal to 1 (as they are not sharing candidates with other municipalities). In a robustness check, we consider Naples as a single unit by taking an unweighted average for all constituencies.

4.3 Is β a causal parameter?

The coefficient of interest is β, that measures the effect of PL on changes in turnout. Its causal interpretation rests on the following hypotheses: (i) the validity of the exclusion restrictions, (ii) a common pre-treatment trend, (iii) a stable unit treatment value assumption (SUTVA).

4.3.1 Exclusion restriction

β captures the effects of tougher law enforcement on elections only if other determinants of turnout do not vary discretely around the geographical discontinuity used for identification. To this aim, we check whether standard balancing proper-

[16] As a check, we also computed standard errors by taking into account spatial dependence like in Conley (1999). The results, not reported in the paper but available upon request, display less conservative standard errors than the one we use in our main specification.

ties over observables are satisfied along the border between treated and non-treated municipalities.

First, we consider three municipality-level geographical indicators aimed at proxying for social and economic conditions: altitude, seismic hazard, and slope of the ground. Since altitude influences the agricultural productivity and the types of crops, it may have an effect on the value of land, on the existence of large estates and, in turn, on the structure of social classes (i.e., whether farmers work as daily laborers or farm their own properties; Banfield, 1958). Seismic hazard controls for the fact frequent earthquakes destroy capital and labor endowments and negatively affect the incentives to accumulate production factors.[17] As a result, areas with high seismic risks have a relatively lower economic value and weaker scope for agglomeration economies (Rosenthal and Strange, 2008). The higher the slope of the ground, calculated as the difference (in meters) between the highest and the lowest point in the municipality, the lower is the agricultural productivity of land (steeper lands are harder to farm) and more likely is the presence of brigandage.[18]

Second, we look at three constituency level characteristics aimed at capturing the nature of the political competition in the district. The first one is related to the political preferences of voters and, in particular, to whether local citizens share the government's views; this is captured by a dummy ($DS61$) equal to one if the winner in 1861 was politically aligned with the national government. The second one is linked to the size of the constituencies, and it is captured by the number of eligible voters as of 1861: the number of voters is inversely proportional to the probability for a voter to be pivotal and to have a large influence on turnout levels (see Geys, 2006, for a review). We also control for the geographical dispersion of voters by including the total surface of the constituency: this aims at proxying for both possible heterogeneities in the voters' preferences and the density of their information network.

[17] Seismic hazard data are provided by the Italian Statistical Office on a four-point scale ranging between 1 (high seismicity) and 4 (very low seismicity).

[18] Brigands' bands were indeed more frequent in rugged areas where the outrushes from the Army were easier.

Third, we analyze the geographical distribution of actual fights between brigands and the Army in both phases of brigandage. Voters in municipalities where victims of brigandage were over-represented might show different turnout rates and voting behavior than those in provinces with a lower number of victims. As pointed out in the political science literature looking at the relation among crime, victimization, and political participation, " more victimized people participate in politics more than comparable non-victims. Rather than becoming withdrawn or disempowered, crime victims tend to become more engaged in civic and political life" (Bateson, 2012; Blattman, 2009).[19,20] To this aim, we check the balance of these fight episodes at the municipality level along the border between treated and non-treated areas.

Table 1 shows in the first two columns the averages (and standard deviations) of all these observables for treated and non-treated municipalities, respectively; in the third column the simple mean difference between the latter two values, while in the fourth the same difference computed after controlling for geographical characteristics (i.e. *Dell-specification* with a polynomial for latitude and longitude) and border fixed effects. All the figures refer only to municipalities within 50 kilometers from the border. By comparing the third and the fourth column we see that treated and non-treated municipalities are indeed statistically identical under several dimensions with the sole exception of the altitude that is higher in treated municipalities. For this reason, as a robustness check we include geographical characteristics (Slope, Altitude, and Seismic hazard) as additional regressors of equation (1).

We also check whether agricultural productivity (a key determinant of local economic development in a pre-industrial world) systematically differs along the border between treated and non-treated units. To proxy for agricultural productivity we use the ESDB data on geological characteristics. Since soil characteristics are described by several discrete variables, it is not meaningful to run mean differences as

[19]We thank an anonymous referee from the Journal of Economic Behavior and Organization for raising this issue.

[20]Similarly, Bellows and Miguel (2009) shows that in Sierra Leone "individuals whose households directly experienced more intense war violence are robustly more likely to attend community meetings, more likely to join local political and community groups, and more likely to vote."

in Table 1. Borrowing from Combes et al. (2010), we report the adjusted-R^2 of a regression of a dummy equal to one for the treated areas on various sets of dummies for soil characteristics. Results are displayed in the first column of Table 2 and show that the explanatory power of soil characteristics in predicting treatment status is rather weak since the adjusted-R^2 slightly exceeds 0.1 in just one case. R^2 is larger when all geological dummies are included in the regression but it drops down to 0.1 when we use the *Dell-specification* polynomial for latitude and longitude (column 2). Therefore we conclude that agricultural productivity is not particularly different between treated and non-treated units.

As to other unobservable characteristics, we deem that exclusion restrictions are not violated thanks to the centralized nature of the newly formed Italian State at that time. According to the Sardinian and Italian regulations, the main goal of the provinces was the enforcement of law and the defense of public order, whereas other levels of government were entitled to provide other services (e.g. municipalities were in charge of education and infrastructures). The head of a province, called *Prefetto*, was not elected by the population (as in the case of the Mayor) but was directly appointed by the Ministry of Interior and responsible only to him. This implies that the *Prefetto*'s policies were not the expression of local preferences but rather driven by nationwide directives.

A final challenge to our identification strategy comes from the possible endogeneity of provincial borders. Had provincial borders been defined in response to the brigandage, exclusion restrictions would be violated and the estimate of β would be inconsistent. However, history helps us. Provincial borders in 1863 were the same of the former Kingdom of Two Sicilies that, in turn, were designed in the Napoleonic era in 1806 under completely different historical conditions.

4.3.2 Common trend

The common trend pre-treatment condition is less trivial. The use of a dependent variable in first-differences allows us to control for time-invariant confounding factors

at the municipality level that might be correlated with the level of turnout or the electoral result. However, if the trends before the treatment between the treated and the control group were systematically different, our estimates would be inconsistent. Admittedly, we cannot control for common trends before treatment because there were no elections in Southern Italy before 1861.[21] This, however, turns to be an advantage for our identification strategy: the absence of a stable parliamentary system in the Kingdom of Two Sicilies allows excluding the formation of deep-rooted voting habits that would bias our estimates if not appropriately controlled for.

Still, involvement into politics might have been different across the provincial border before treatment. However, some characteristics of our exercise mitigate this issue. First, we concentrate only on borders within the former Kingdom of Two Sicilies, which means that we use territories that shared common history and institutions for a very long time (700 years). Moreover, those institutions were characterized by a strongly centralized approach that dated back to the '60s of the XVIII century, when a series of reforms harmonized the administrative framework of the Kingdom of Two Sicilies. This implies that there is no systematic reason for the involvement of elites in politics to be different across the provincial borders we use for identification. Additional evidence provided in Appendix B supports this statement.

4.3.3 SUTVA

The third condition (SUTVA) states that the potential outcome of one observation should not be affected by the treatment status of other units; in our context this means that the enforcement of PL in certain areas should not influence turnout rates in other treated and non-treated municipalities. This would occur if, for instance, petty criminals would decide to move away from PL provinces (where enforcement was tougher) to neighboring non-treated areas; or if, likewise, eligible voters would

[21] Except for two short-lived experiences in 1820 and 1848 for which data on turnout are not available.

choose to migrate from treated to non-treated areas or vice-versa in response to PL and according to their own preferences toward the law.

There are several reasons why our empirical design prevents such "spillovers" from occurring. First, as shown in Table 1, the variation of the number of eligible voters between 1861 and 1865 balances on the border so that we can exclude relevant migration patterns. Second, we compare, in a robustness check, similar but not contiguous areas across the border, assuming that migration is more likely to occur between neighboring municipalities. We do this by excluding in the regression sample all treated and non-treated municipalities whose distance from the border is equal to 10 kilometers or less.

5 Results

5.1 Baseline and robustness

A graphical illustration of the effect of the spatial discontinuity in PL enforcement is provided in Figure 3 where we plot the change in turnout against the forcing variable (in this case we use the minimum distance to the border).[22] The dots represent average values of the local polynomial estimates, while the continuous lines provide the quadratic fit. There is evidence of a jump in the change in turnout at the border: PL is associated with a clear increase in the political participation at the local level.

Due to the presence of other confounding factors like orographic factors or border effects, a graphical representation does not to provide a precise measure of the magnitude and significance of the coefficient. Therefore, we switch to parametric methods by estimating equation (1) with the aim of unveiling a causal impact of PL on electoral turnout. In Table 3 we present the results of both *Dell* and *Dist* specifications. Columns (1) and (3) show the estimation without controls

[22] Most regression discontinuity analyses complement parametric estimates with local polynomial regressions. However, these methods are consistent only with very large datasets which is not our case.

under the two alternative specifications; in columns (2) and (4) we add geographical controls (altitude, slope, and seismic hazard) that are not perfectly balanced over the border between treated and non-treated units. The results confirm that a tougher law enforcement generates a rise in turnout by 11 percentage points in the *Dell-specification* and 14 in the *Dist-specification*. This is not a small effect since the average turnout rate in 1861 was 57 percent in the entire country and 60 percent in the sub-sample used in the estimation. In both specifications, the inclusion of additional controls does not change the point estimate of β, thus in the remainder of the paper we use only the more parsimonious specification without controls.

As previously discussed, a possible challenge to our identification strategy is the violation of the SUTVA, since many voters or criminals might have decided to move to bordering areas in response to PL. As for the voters' mobility, in Table 1 we have already shown that the change in the number of eligible voters perfectly balances on the border between treated and non-treated units. However, we further investigate this issue by excluding from the baseline regression all municipalities (both treated and non-treated) within 10 kilometers from the border (columns (1) and (2) in Table 4) and thus using municipalities with a distance from the border lying between 10 and 50 kilometers ($10 \leq dist_m \leq 50$). The baseline estimates are fully confirmed and, despite the fact that confidence intervals largely overlap, the point estimates are now even larger.

In columns (3) to (6) of Table 4 we consider alternative weighting schemes. In the baseline regressions each municipality is weighted by its share of the corresponding constituency's population, thus implying that, within each constituency, voters are assumed to be a fixed share of the population; this might not be the case if, for example, the portion of richest people is different across municipalities. Since we do not have the exact number of voters at the municipality level, we check the robustness of our results by artificially attributing a larger share of voters in relatively larger or smaller municipalities within each constituency. We consider two different cases. In the first one, being w the weight used in the baseline regression,

we re-weight all the observations by $w^{1.3}$ so that we implicitly give a relatively lower weight to smaller municipalities within each constituency. In the second case, we do the opposite using $w^{0.7}$. In both cases, our baseline results fully hold.

Finally, we check whether our results are somehow influenced by the multi-level nature of our estimation technique or by the special condition of Naples. First, we collapse the data at the constituency level and compute for each constituency its latitude, longitude, and distance from the provincial border as the arithmetic average of all the municipalities belonging to that constituency.[23] Results are displayed in the first two columns of Table 5 and again fully confirm the evidence of the baseline regressions.

To address the issue of Naples, we similarly collapse all the figures for the 12 constituencies of Naples into one observation and re-estimate equation (1). Results hold through again. As a further robustness exercise, we also checked that baseline estimations are stable even when we exclude one constituency at a time.[24]

5.2 Placebo experiments

We further test the robustness of our results through two placebo tests. The first one relates to the exclusion restriction hypothesis. If provincial borders matter for turnout for reasons other than PL, we should observe an effect also on other borders. We therefore construct "fake" treated and control provinces as shown in Figure 4: we take only provinces that in the baseline were treated and arbitrarily attribute the fake control status to those bordering the baseline control areas; the fake treated provinces are now the ones bordering the fake control provinces.[25] The results, shown in Table 6, are clear-cut: for all specifications, we do not find any significant effect.

The second placebo test relates to the relationship between space and turnout.

[23] Other weighting schemes (e.g. weighting according to the population share within the constituency or taking just the most populous municipality) give very similar results. For these regressions we use robust standard errors.

[24] Results are available upon request.

[25] Fake treated provinces are now: Calabria Citeriore, Molise, Benevento, and Principato Ulteriore.

A SRDD exercise relies on the hypothesis that the change in turnout between 1861 and 1865 smoothly varies over space with the only exception of PL borders. To test this assumption, we arbitrarily move the border away from the actual boundary and check whether we observe any jump. In other terms, we shift the border from 20 to 40 km within non-treated areas and from 20 to 100 km within treated ones and recursively estimate equation (1). Figure 5 reports the point estimate and the 95 percent confidence intervals for each estimate; to ease comparison, we also report the estimate for the actual border. Since none of the estimated coefficients is statistically significant, with the only exception of the true PL borders, we conclude that indeed the change in turnout smoothly varies across space.

5.3 Civic capital or private rents?

So far, our results have decisively pointed to the fact that a tougher law enforcement warranted by PL generated a strong increase in turnout. According to our interpretation, this is due to the fact that the provision of an essential service like security is likely to raise the trust in government and therefore induce a civic behavior like going to vote.

An alternative explanation, however, is still possible. Given the small size of the electorate at that time, we cannot exclude the existence of private rents from voting. They might include the returns to connection with politicians, favors obtained from supporting a candidate, the possibility of exercising political control and thus diverting resources in a desired direction, or the labor market premium enjoyed by former politicians, for instance because of their subsequent involvement in lobbying (see for example Fisman, 2001; Diermeier et al., 2005; Ferguson and Voth, 2008; Acemoglu et al., 2010). This is a relevant issue as private rents in voting were quite pervasive even Southern Italy in XIX century (Guiso and Pinotti, 2013).

In principle, by raising the discretionary powers of the executive, PL may have tilted the returns in two (opposite) ways. On the one hand, if a tougher law enforcement generated a less corruptible environment, rent-seekers would have an incentive

to go to vote with the aim of restoring the previous situation; in this case, we should observe an increase in the preferences for opposition parties. On the other hand, large discretionary powers of the executive should increase the returns to be connected to the politicians in office, thus tilting preferences toward the incumbent party.

In both cases, higher turnout should be associated with a change in the electoral results. We check this using three different dummy indicators as dependent variables within the same specification of equation (1). The first dummy variable is equal to one when the winning candidate in 1865 in constituency j belongs to the same party that won in 1861. This is an indicator of persistency at the local level and aims at measuring whether there was some change in the returns to the connections to the local incumbent (regardless his political alignment). The second one is equal to one when the winning party in 1865 belongs to the Government party, i.e., *Destra Storica*. This is a measure of alignment with the national Government; in this case we also control for the same variable in 1861 ($DS61$) to keep the flavor of a diff-in-diffs estimator. The third one is equal to one when the winning party in 1865 is the so-called *Estrema*, the only one that voted against PL. In our view, this is a signal of the willingness to upset, in a radical way, the current political equilibria. Also in this case, we control for the same variable in 1861 ($ES61$).

In all three exercises, the estimated coefficient of PL is not statistically different from zero, thus we can reject the hypothesis that higher mobilization was due to private rents (Table 7).

However, given the majoritarian nature of the elections, this might not be enough to dispel any doubt on the existence of private rents. For example, consider the case of a constituency in a PL province with a strong political orientation to the opposition; if PL generated a rise in the incentives to be aligned with the Government, we could observe an increase in the preferences for the Government party, but not necessarily a change in the ruling party if such an increase is not strong enough to tilt the final result. Yet, if this were true, the share of votes going to the winning

candidate should decrease. By the same token, it should increase if PL reinforced the incentives to vote against the Government.

To exclude that any of these mechanisms is at work, we use the change in the share of votes going to the winning candidate between 1861 and 1865 as a dependent variable in equation (1). The results in Table 7 are again against this alternative explanation.

6 Long run effects

So far, we have detected a short-run impact of PL on voter turnout. Though, an interesting question, also from a policy perspective, is whether this effect is persistent over time, that is whether turnout kept on being higher in treated areas even after PL was repealed on December 31st, 1865.

A recently growing literature (see Nunn, 2009, for a review) has stressed the role of historical accidents, sometimes even small events (Dell, 2014), in shaping different economic and institutional structures, even long after the initial event had occurred. This is because institutions (especially, informal ones) tend to be highly persistent over time.

To address this issue, we check whether treated areas observed persistently higher levels of turnout after 1865 than non-treated ones. For most of the elections between 1867 and 1909 we run the following regression:[26]

$$turn_{mjb} = \sigma + \psi T_m + f(\text{geographic location}_m) + \mu\phi_b + \zeta_{mjb} \tag{2}$$

where $turn_{mjb}$ is the level of turnout registered in constituency j where municipality m is located.

The coefficient of interest is ψ. As usual, we perform an SRDD by using both *Dell* and *Dist* specifications. As in equation (1), all municipalities are weighted by

[26] We exclude the elections held in 1882, 1886, and 1890 since in those years electoral rules changed (from a majoritarian to a proportional system) and available data are quite partial (in particular, we do not have data for all the relevant constituencies) and not particularly reliable. After 1909 full enfranchisement was granted without census thresholds.

their share over the total population of the constituency and standard errors are clustered at the constituency level.

Results are displayed in Figure 6. Panel (a) reports the point estimate of ψ and its 95 percent confidence interval for the *Dell-specification*; panel (b) shows the results for the *Dist-specification*.

Interestingly, the 11-14 percentage points increase we estimated for 1865 with respect to 1861 persisted for more than 30 years after the repeal of PL.[27] From 1867 to 1895 the estimated coefficient of PL is smaller, but still statistically significant, thus pointing to a still relevant though depreciating effect. In particular, this effect started fading out in 1897 and was completely washed away at the beginning of the XX century. Quite notably, the fading out does not seem to depend on the partial enfranchisement that took place at the beginning of the 1880s, when voting population actually quadrupled to 2 million, as the estimate of ψ in the 1890s is quite comparable to previous decades.[28]

7 Concluding remarks

Informal institutions can be affected, in a persistent way, by the proper functioning of a State. In this paper we have shown that a tougher enforcement of law can raise electoral turnout. We have proved evidence of a causal relationship of law enforcement on turnout using a historical event that took place in the XIX century in Italy. This is known as the Pica Law which was established to fight brigandage in Southern Italy: while determining a strong curtailing of civil rights for the large majority of the population, it ensured a safer environment to wealthy people, who were the only ones allowed to vote. We apply a spatial regression discontinuity technique in a diff-in-diffs framework to identify the causal effect of enforcement on voting habits.

[27] Despite the partial overlap of confidence intervals between 1861 and 1865, results in Table 3 have already shown that the difference of those values is significantly different from zero.

[28] The result that PL did not alter local political equilibria still hold in the longer dataset. Results are available upon request.

The results show that the areas where the Pica Law was enforced recorded a relatively greater mobilization of the electorate. We provided evidence showing that this is more likely the genuine response of the electorate to the provision of a highly valued public good (like security) rather than the attempt to extract private rents from voting. We also find that the Pica Law had a rather prolonged effect which lasted at least 30 years after the repeal of the law.

Two remarks are worth doing. Despite the focus on the implementation of a ruthless martial law at the end of the XIX century in a poor and rural area like the South of Italy, we consider our analysis policy relevant even nowadays. This mostly follows from our identification strategy which, as explained, does not rely on areas where the application of the Pica Law was aggressive, but rather in those where it implied a more standard control of the territory by the police. In other words, nothing so different from what today may occur or be needed in troubled neighborhoods of some large cities in advanced, emerging and developing economies.

A second remark relates to the outcome we studied. The focus on political outcomes, as the one we take in this paper, is generally considered crucial for the strong linkages between civicness and economic development. However, since the political effects of the Pica Law were concentrated on a very small portion of the population (the electorate), we could not investigate the full chain that goes from law enforcement to economic development through political involvement and civicness. Nevertheless we have observed a strong causal and long-lasting effect of law enforcement on political participation, which the literature on social capital considers a determinant of economic development.

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A Law enforcement and political participation today

In this Appendix, we provide some descriptive evidence on the relationship between law enforcement and political involvement by using more recent data.

First, we analyze cross-country evidence. Figure 7 shows the unconditional correlation between civic involvement and crime rate taken from the Better Life Index computed by the OECD. The crime rate is calculated as the simple average between (standardized measures of) assault and homicide rates, while civic involvement is the average of (standardized measures of) consultation on rule-making and voter turnout.[29] The *Consultation on rule-making* indicator aims at capturing the extent to which formal consultation processes are built into the regulatory law-making process and is based on a composite index which combines various pieces of information on the openness and transparency of the consultation process.[30] In the upper panel of Figure 7 there is a quite sizable negative relationship between civic involvement and crime for the entire sample of countries, which becomes even stronger when we exclude high-crime countries like Brazil and Mexico (bottom panel).

A more robust descriptive evidence on the positive correlation between law enforcement and political participation can be based on the microdata of the World Value Survey (WVS; wave 2010-2014). WVS provides information on both individual attitudes toward politics and feeling of security for a sample of 52 countries, both developed and emerging, and therefore allows to control for a very large number of individual characteristics and country fixed effects. In particular, we estimate the following equation:

$$y_e = \phi + \lambda S_e + \rho Z_e + \xi_e \tag{3}$$

where e is the individual, S_e is a self-reported assessment of security (based on the question: "how secure do you feel in your neighborhood?") coded between 1 (feel not secure at all) and 4 (very secure). S_e enters equation (3) as a set of three dummy

[29] Standardized values are computed as $[x_i - x_{\min}]/[x_{\max} - x_{\min}]$, where x_i is the value of the index for country i and $x_{\min}$ and $x_{\max}$ are, respectively, its minimum and maximum value

[30] The indicator refers to the existence of institutional practices but does not, however, gauge whether these procedures are in fact effective. See http://www.oecdbetterlifeindex.org/ for details.

variables where we exclude $S_e = 1$.

As for the dependent variables (y_e), we use a set of indicators that capture different aspects of civic involvement. In particular, we use: "how important is politics in the citizen's view"; "how interested she is in politics"; "her degree of trust in government"; "her degree of trust in political parties"; "her degree of trust in the parliament"; "whether she turns out at elections". While the last indicator is a binary variable equal to 1 whether the citizen usually or always goes to vote, all the other indicators are coded from 1 (low interest/trust) to 4 (high interest/trust).

We include a large set of controls (Z_e) for individual attitudes and characteristics, like dummies for educational level, gender, marital status, number of children, citizenship, city size, country, and a third degree polynomial for age.

Results are displayed in Table 8. For all the estimated equations, we see that citizens who feel more secure in their neighborhood tend to attach more importance to and be more interested in politics; they also trust more political institutions and go more often to vote.

B A Test on common trend assumption: an investigation on political involvement of the elites

In this section, we provide evidence on the fact that political involvement by elites in the Kingdom of Two Sicilies balanced on the border between treated and non-treated provinces before 1861.

The Italian 1861 elections introduced, for the first time, a stable parliamentary representation in continental South. However, starting from the French revolution, Southern elites were recurrently involved in revolutionary attempts with the aim to renovate the formal institutions of the Kingdom. All cases were short-lived and repression followed immediately.

Due to data availability, we concentrate on two events: the 1799 revolution and the 1848 parliamentary experience.

B.1 Historical facts and data

1799 Revolution. – During the Napoleonic era, the continental part of the Kingdom of Two Sicilies was conquered by the French army between December 1798 and January 1799; the so-called Neapolitan Republic was proclaimed on January 1799, under the leadership of a group of liberal intellectuals (Duggan, 2007). This experience was, however, short-lived. A small monarchic army, which landed in Calabria in February 1799, grew in a few months, thanks to popular support and the crucial help of the British fleet in coastal areas. By June 1799 the entire continental South (Naples included) was back in monarchic hands. The subsequent repression implied the execution of 122 individuals.

There are no available datasets containing a list of all revolutionary leaders; however, detailed information on executed is available by combining different historical sources (Fortunato, 1884; Cuoco, 1913; Parascandolo, 1893). These include name, surname, and place of birth. We use information on the place of birth to proxy for the intensity of the involvement of local elites in liberal politics.

1848 Parliament. – Like many countries in continental Europe, the Kingdom of Two Sicilies experienced a revolution in 1848 aimed at transforming it in a constitutional monarchy (Duggan, 2007). The constitution was granted on January 1848 and elections took place on April 1848. Even in this case, the parliamentary experience was short-lived; the Parliament met once and was subsequently dissolved by the King. New elections took place on June and, as before, the Parliament met once and was dissolved one year later with no other sessions.

Data on turnout for this constitutional experience are not available at local level. We only have the complete list of the Members of Parliament with their town of origin for the June Parliament (from Imbriani, 1848). To proxy for the involvement of local elites in parliamentary politics, we use information on the place of birth of MPs.

B.2 Estimation and results

We estimate the following equation:

$$Y_{mb} = \alpha + \beta T_m + f(\text{geographic location}_m) + \kappa\phi_b + \varepsilon_{mb} \tag{4}$$

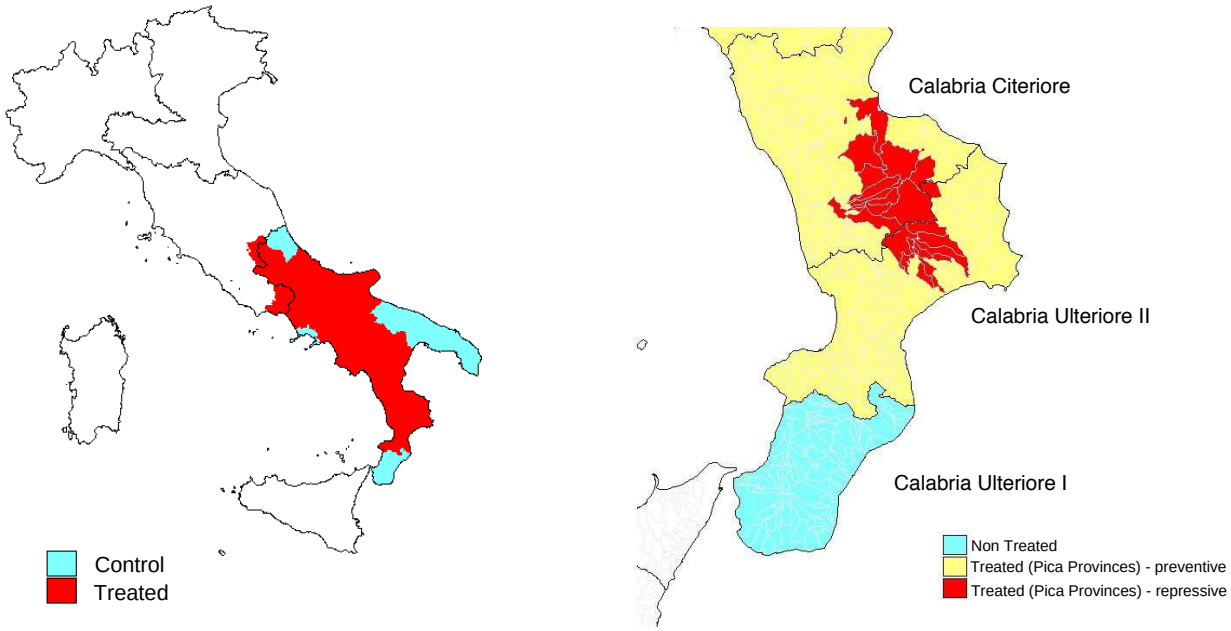
where T_m is a dummy equal to one if municipality m belongs to a PL province and zero otherwise, ϕ_b are border fixed effects, and $f(\text{geographic location}_m)$ is the polynomial for the forcing variables (Dell specification, see section 4.2). Y_{mb} is the outcome variable, that is:

- Number of executed individuals in 1799 born in municipality m (# Executed 1799);
- Dummy equal to one if municipality m is the place of birth of one of the executed in 1799 (D Executed 1799);
- Number of MP of 1848 born in municipality m (# MP 1848);
- Dummy equal to one if municipality m is the place of birth of one of the MP of 1848 (D MP 1848).

Results are displayed in Table 9. In almost all regressions β is not statistically different from zero.[31] In general, these results show that the involvement in (liberal) politics by the elites of the Kingdom of Two Sicilies balanced on the border between treated and non-treated provinces, suggesting that the common trend assumption is respected.

[31] The only exceptions are the specifications with the number of executed individuals due to the over-representation of Naples (the center of the revolution) among the executed individuals. However, even in this case, the estimation is quite imprecise with p-values around 0.08–0.09.

Figure 1: The enforcement of the Pica Law in the continental Southern part of Italy

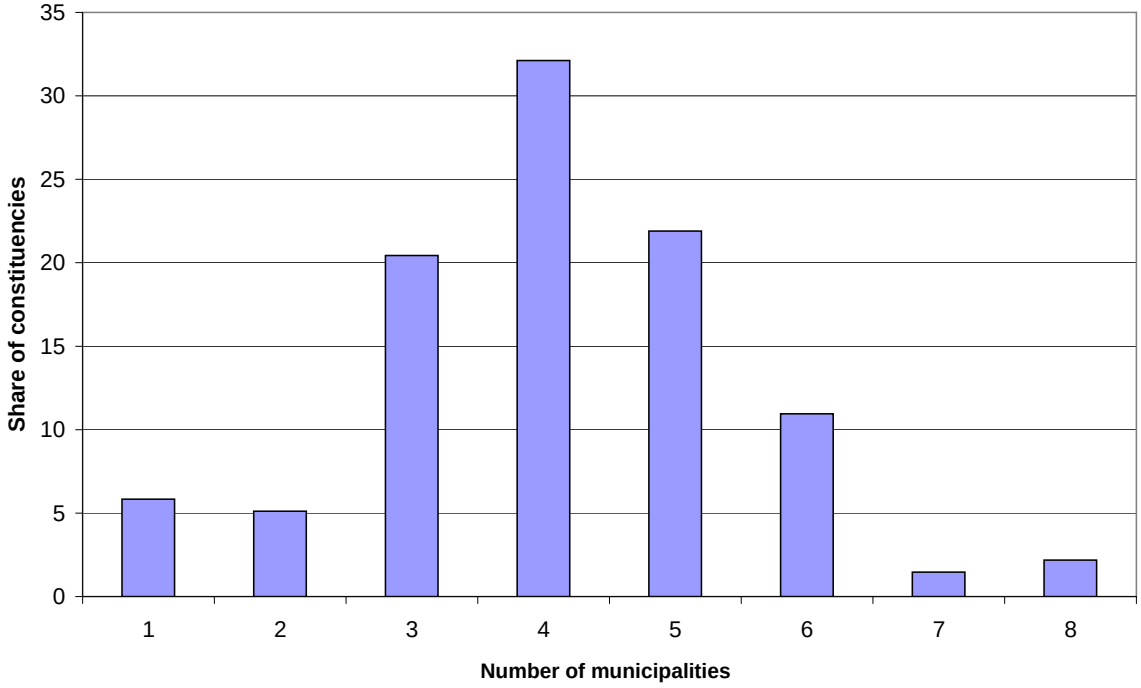


(a) Treated vs. Non-Treated areas

(b) Preventive vs. Repressive arm

Source: Law 1409/1863, Cesari (2010), and Greco (2011).

Figure 2: The distribution of constituencies by number of municipalities



Source: ICC database.

Note: The constituencies and their municipalities refer to the breakdown of the territory that was used for electoral purposes in 1861-65. The graph is restricted to constituencies with at least one eligible voter and located in the continental Southern part of Italy.

Table 1: Descriptive Statistics

	Treated	Non-treated	Mean differences	Mean difference under SRDD
	(1)	(2)	(3)	(4)
Δ turn	3.656	-4.495	8.151**	11.456**
	[15.348]	[20.482]	(4.017)	(5.037)
Turnout 1861	60.728	60.763	-0.036	2.347
	[12.340]	[19.252]	(3.647)	(5.145)
Δ eligible	-66.022	17.913	-83.935	-122.406
	[214.487]	[380.020]	(71.302)	(85.091)
Slope	756.517	536.833	219.684***	105.345
	[497.560]	[417.056]	(79.732)	(82.962)
Altitude	327.916	141.632	186.284***	80.351**
	[266.267]	[164.532]	(41.416)	(25.320)
Seismic hazard	1.771	2.182	-0.411***	-0.144
	[0.619]	[0.622]	(0.125)	(0.101)
$DS61$	0.581	0.735	-0.154	-0.198
	[0.494]	[0.443]	(0.102)	(0.132)
Fights–first phase	0.250	0.406	0.145*	0.107
	[0.435]	[0.492]	(0.076)	(0.086)
Fights–second phase	0.077	0.019	0.057*	0.073
	[0.267]	[0.138]	(0.033)	(0.051)
Eligible voters in 1861	916.206	1020.279	-104.073	-81.933
	[264.992]	[367.360]	(70.763)	(85.717)
Surface of the constituency	24057.101	24829.138	-772.037	290.014
	[26666.821]	[24263.549]	(5,592.537)	(4511.221)

Source: Our calculations on ICC, Istat data, Cesari (2010), and Greco (2011).

Notes: Number of observations: 290. The first two columns show the means (and, below in squared brackets, the standard deviations) of each variable for the treated (column (1)) and non-treated (column (2)) municipalities within 50 kilometers from the border. Column (3) reports the simple mean difference between the values of the first two columns, while column (4) the same difference while controlling for geographical characteristics using the *Dell-specification*. In columns (3) and (4) the standard errors in brackets are clustered at the constituency level. The variables included in the Table are defined as follows. $\Delta turn$ is the change in turnout between 1861 and 1865. *Turnout 1861* is level of turnout in 1861. $\Delta eligible$ is the change in the number of eligible voters between 1861 and 1865. *Slope* is the difference (in meters) between the higher and the lowest point in the municipality. *Altitude* is the altitude (in meters) of the town. *Seismic hazard* is derived from the Italian Statistical Office classification on a four point scale between 1 (high seismicity) and 4 (very low seismicity). $DS61$ is a dummy equal to one if the elected Member of Parliament in the constituency was aligned with the Government party. *Fights–first phase* is a dummy equal to one if the municipality observed a fight between the army and brigands in the first phase of the brigandage (1860-61). *Fights–second phase* is a dummy equal to one if the municipality observed a fight between the army and brigands in the second phase of the brigandage (1861-70). *Eligible voters 1861* is the number of eligible voters in 1861 in the constituency. *Surface of the constituency* is measured in hectares.

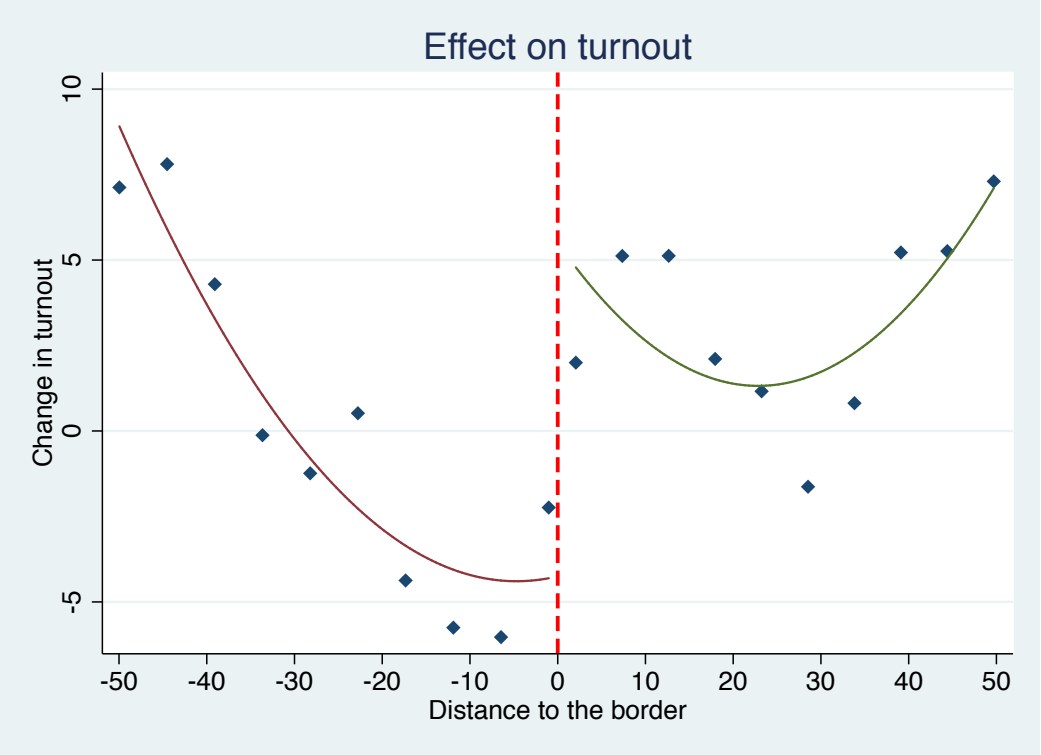
Table 2: Descriptive Statistics: soil characteristics

	(1)	(2)
Topsoil mineralogy (7 classes)	0.116	0.087
Subsoil mineralogy (6 classes)	0.081	0.088
Parent material hydrogeo. type (8 classes)	0.087	0.068
Topsoil available water capacity (4 classes)	0.063	0.050
Subsoil available water capacity (5 classes)	0.073	0.051
Depth to rock (5 classes)	0.022	-0.007
Soil profile differentiation (4 classes)	0.038	0.007
Soil erodibility (5 classes)	0.058	0.049
Carbon content (3 classes)	0.039	0.036
Hydrogeological class (7 classes)	0.015	0.052
All dummies	0.293	0.107

Source: Our calculations on European soil data centre data.

Notes: Number of observations: 290. Col. (1): adjusted R^2 when regressing the treatment dummy on soil characteristics. Col. (2): partial adjusted R^2 for soil characteristics when regressing the treatment dummy on soil characteristics, polynomial for forcing variables under SRDD, and border fixed effects.

Figure 3: A spatial discontinuity analysis



Source: Our calculations on ICC and Istat data.

Notes: The dots represent the local averages of the dependent variable (based on Epanechnikov kernel with rule-of-thumb bandwidth), while the continuous lines the quadratic polynomial estimates. The border between treated and non-treated provinces is fixed at the 0 value.

Table 3: Baseline regression

Dependent variable: $\Delta turn$				
Specification:	*Dell*	*Dell*	*Dist*	*Dist*
	(1)	(2)	(3)	(4)
β	11.456**	11.146**	14.780**	14.041*
	(5.037)	(5.239)	(7.243)	(7.131)
Slope		0.002		0.003
		(0.004)		(0.003)
Altitude		0.008		0.003
		(0.009)		(0.008)
Seismic hazard		3.897		4.135
		(3.738)		(3.381)
R^2	0.177	0.192	0.109	0.661
Observations	290	290	290	290
Number of clusters	89	89	89	89

Source: Our calculations on ICC and Istat data.

OLS weighted estimates of equation (1); standard errors (in parenthesis) clustered at the constituency level. Weights are equal to each municipality's share of the total population of the constituency it belongs to. The dependent variable is the change in turnout between 1861 and 1865 elections and is measured at the constituency level. The *Dell-specification* includes a polynomial for latitude and longitude, both considered as forcing variables, while the *Dist-specification* includes a polynomial for the distance to the border between treated and non-treated areas. The other regressors are defined as follows. *Slope* is the difference (in meters) between the higher and the lowest point in the municipality; *Altitude* is the municipality's altitude in meters; *Seismic hazard* is a discrete variable ranging from 1 (high seismicity) and 4 (very low seismicity) and is taken from the Italian Statistical Office classification.

* significant at 10 percent, ** significant at 5 percent, *** significant at 1 percent.

Table 4: Robustness I

Dependent variable: $\Delta turn$						
	$10 \leq dist_m \leq 50$		weight $w^{1.3}$		weight $w^{0.7}$	
Specification:	*Dell*	*Dist*	*Dell*	*Dist*	*Dell*	*Dist*
	(1)	(2)	(3)	(4)	(5)	(6)
β	14.053**	20.218**	12.030**	16.012**	10.733**	13.259*
	(5.670)	(10.081)	(5.099)	(7.596)	(5.090)	(7.043)
R^2	0.205	0.133	0.197	0.129	0.158	0.090
Observations	232	232	290	290	290	290
Number of clusters	89	89	89	89	89	89

Source: Our calculations on ICC and Istat data.

OLS weighted estimates of equation (1); standard errors (in parenthesis) clustered at the constituency level. Weights are computed as the share of city population within each constituency (w) in columns (1) and (2); $w^{1.3}$ in columns (3) and (4); $w^{0.7}$ in columns (5) and (6). The dependent variable is the change in turnout between 1861 and 1865 elections and is measured at the constituency level. The *Dell-specification* includes a polynomial for latitude and longitude, both considered as forcing variables, while the *Dist-specification* includes a polynomial for the distance to the border between treated and non-treated areas. No other controls are included.

* significant at 10 percent, ** significant at 5 percent, *** significant at 1 percent.

Table 5: Robustness II

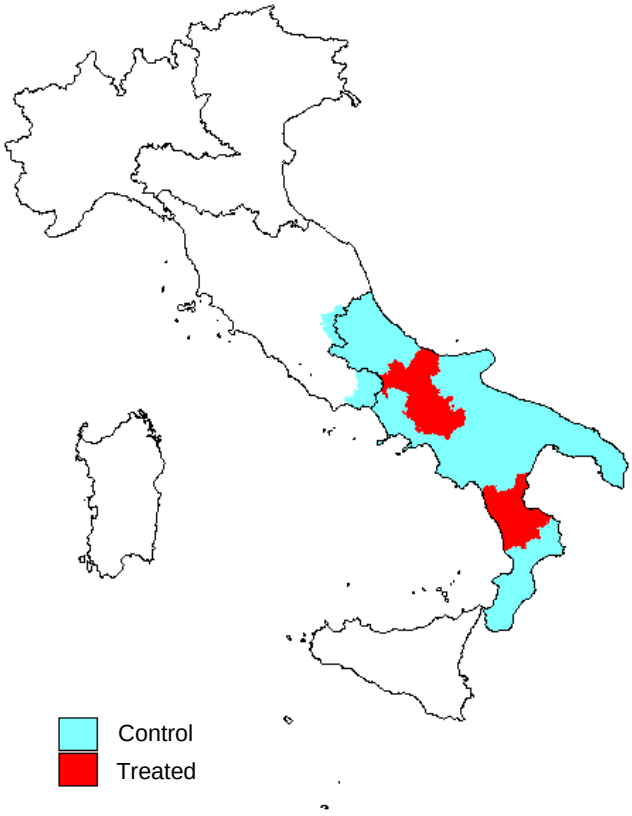
Dependent variable: $\Delta turn$				
	Collapsing at constituency		Collapsing Naples	
Specification:	*Dell*	*Dist*	*Dell*	*Dist*
	(1)	(2)	(3)	(4)
β	13.985**	18.704**	12.063**	15.540*
	(5.803)	(8.091)	(5.015)	(7.917)
Observations	83	83	279	279
R-squared	0.207	0.157	0.212	0.133
Number of clusters			82	82

Source: Our calculations on ICC and Istat data.

In column (1) OLS estimates of equation (1) where all the data have been collapsed at the constituency level. In column (2) OLS weighted estimates of equation (1) where the figures for the 12 constituencies of Naples are collapsed into one, city-level observation and standard errors (in parenthesis) are clustered at the constituency level; weights are equal to each municipality's share of the total population of the constituency it belongs to. The dependent variable is the change in turnout between 1861 and 1865 elections and is measured at the constituency level. The *Dell-specification* includes a polynomial for latitude and longitude, both considered as forcing variables, while the *Dist-specification* includes a polynomial for the distance to the border between treated and non-treated areas. No other controls are included.

* significant at 10 percent, ** significant at 5 percent, *** significant at 1 percent.

Figure 4: Placebo borders I



Notes: Red areas represent placebo treated provinces while blue areas placebo non-treated provinces. Both set of provinces belong to the former Kingdom of Two Sicilies, i.e. to the current continental Southern part of Italy. For the construction of placebo borders see the description in section 5.2

Table 6: Placebo borders II

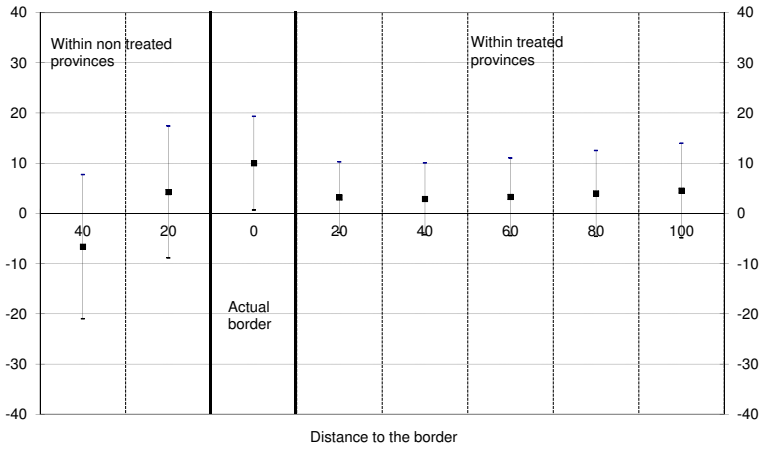
Dependent variable: $\Delta turn$				
Specification:	*Dell* (1)	*Dell* (2)	*Dist* (3)	*Dist* (4)
β	-1.398	-1.135	-1.487	-7.710
	(4.191)	(4.076)	(6.804)	(6.533)
Controls	No	Yes	No	Yes
R^2	0.107	0.116	0.032	0.082
Observations	363	363	363	363
Number of clusters	103	103	103	103

Source: Our calculations on ICC and Istat data.

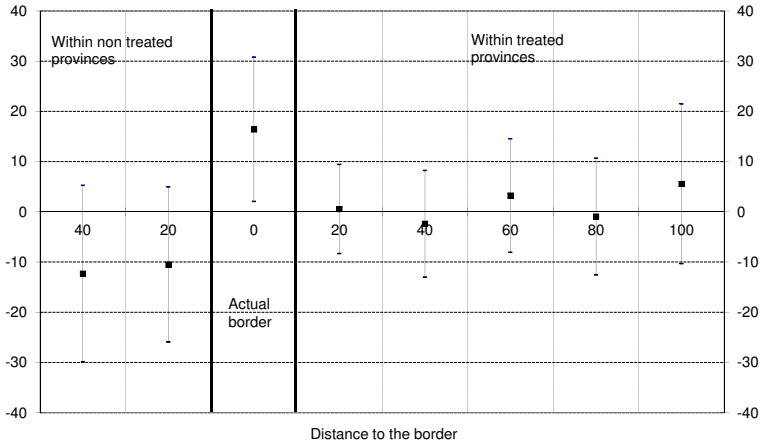
OLS weighted estimates of equation (1); standard errors (in parenthesis) clustered at the constituency level. Weights are equal to each municipality's share of the total population of the constituency it belongs to. The dependent variable is the change in turnout between 1861 and 1865 elections and is measured at the constituency level. The *Dell-specification* includes a polynomial for latitude and longitude, both considered as forcing variables, while the *Dist-specification* includes a polynomial for the distance to the border between treated and non-treated areas. The controls, included only in columns (2) and (4), are defined as follows. *Slope* is the difference (in meters) between the higher and the lowest point in the municipality; *Altitude* is the municipality's altitude in meters; *Seismic hazard* is a discrete variable ranging from 1 (high seismicity) and 4 (very low seismicity) and is taken from the Italian Statistical Office classification.

* significant at 10 percent, ** significant at 5 percent, *** significant at 1 percent.

Figure 5: Placebo borders III



(a) *Dell-specification*



(b) *Dist-specification*

Source: Our calculations on ICC and Istat data.
Notes: OLS weighted estimates of equation (1); standard errors (in parenthesis) clustered at the constituency level. Weights are equal to each municipality's share of the total population of the constituency it belongs to. The two figures report the point estimate and the 95% confidence interval of the estimate of β. Placebo borders are identified by shifting the actual ones from 20 to 40 km within non-treated areas and from 20 to 100 km within treated ones. The *Dell-specification* includes a polynomial for latitude and longitude, both considered as forcing variables, while the *Dist-specification* includes a polynomial for the distance to the border between treated and non-treated areas.

Table 7: Electoral outcomes

Dependent variable:	victory in 1865 of 1861 winners		victory of "Destra storica"	
Specification:	*Dell*	*dist*	*Dell*	*dist*
	(1)	(2)	(3)	(4)
β	0.024	0.296	-0.033	-0.058
	(0.136)	(0.188)	(0.136)	(0.183)
Observations	290	290	290	290
R-squared	0.037	0.036	0.145	0.123
Number of clusters	89	89	89	89

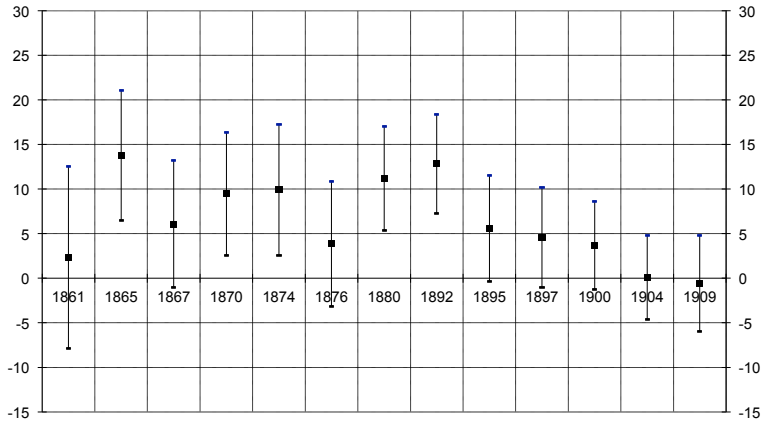
Dependent variable:	victory of "Estrema"		Δ share of votes 1861-65	
Specification:	*Dell*	*dist*	*Dell*	*dist*
	(5)	(6)	(7)	(8)
β	0.005	0.019	0.466	-2.740
	(0.007)	(0.018)	(5.828)	(6.097)
Observations	290	290	251	251
R-squared	0.685	0.634	0.073	0.040
Number of clusters	89	89	88	88

Source: Our calculations on ICC and Istat data.

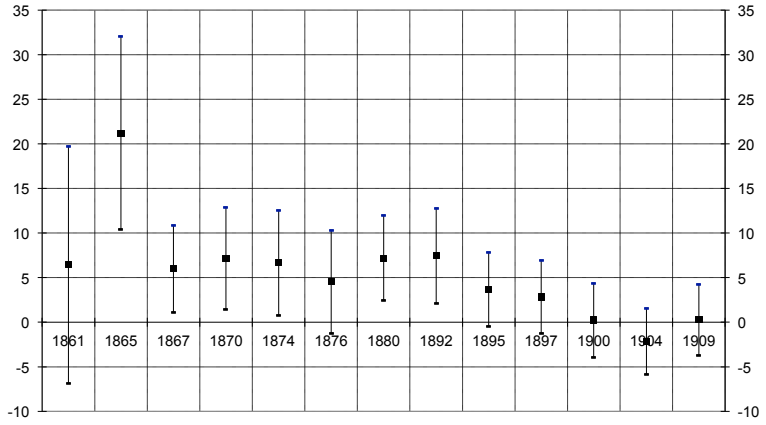
Notes: OLS weighted estimates of equation (1); standard errors (in parenthesis) clustered at the constituency level. Weights are equal to each municipality's share of the total population of the constituency it belongs to. The dependent variable, always defined at the constituency level, varies across columns: in columns (1) and (2) it is a dummy variable equal to 1 if the winning candidate in 1865 comes from the same party which won in 1861 and 0 otherwise; in columns (3) and (4) it is a dummy variable equal to 1 if the winning party in 1865 coincides with the Government party and 0 otherwise; in columns (5) and (6) it is a dummy variable equal to 1 if the winning party in 1865 was the *Estrema* party and 0 otherwise; in column (7) and (8) it is the 1861-65 change in the share of votes going to the winning candidate. The *Dell-specification* includes a polynomial for latitude and longitude, both considered as forcing variables, while the *Dist-specification* includes a polynomial for the distance to the border between treated and non-treated areas. No other controls are included.

* significant at 10 percent, ** significant at 5 percent, *** significant at 1 percent.

Figure 6: Persistent effects of Pica Law?



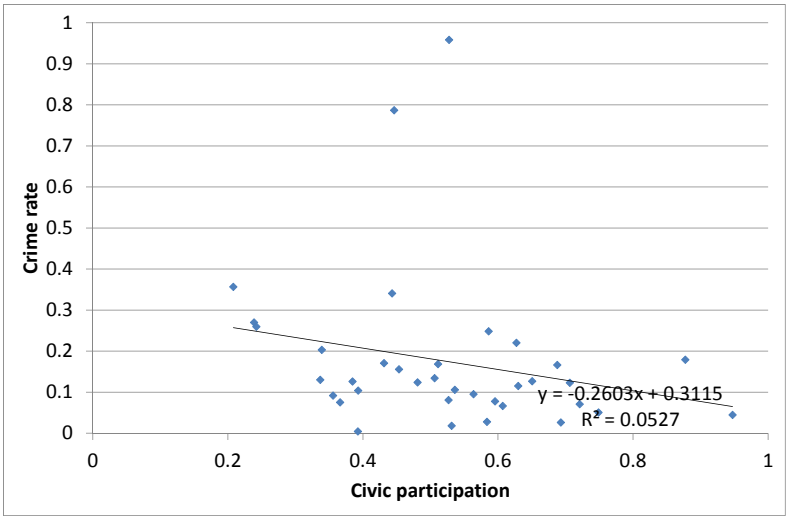
(a) *Dell-specification*



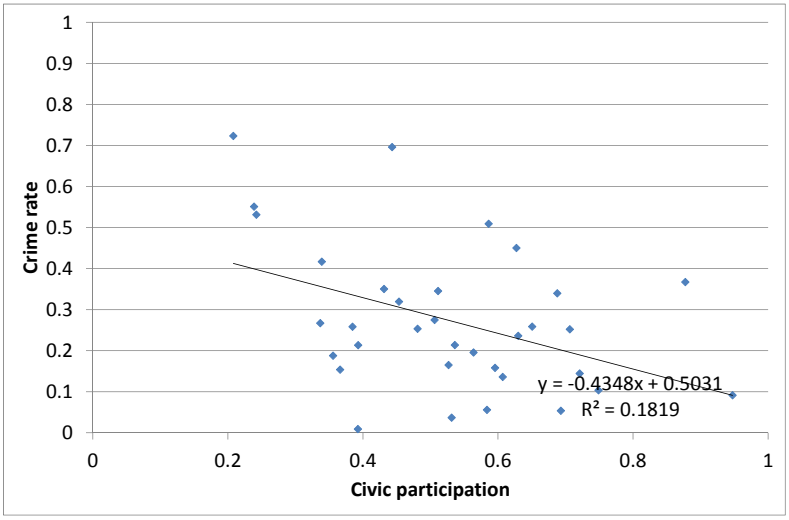
(b) *Dist-specification*

Source: Our calculations on ICC and Istat data.
OLS weighted estimates of equation (2); standard errors are clustered at the constituency level; weights are equal to each municipality's share of the total population of the constituency it belongs to. The dependent variable is the level of turnout in each of the years shown on the x-axis and is measured at the constituency level. The figures report the point estimate and the 95% confidence interval of the estimate of ψ. The *Dell-specification* includes a polynomial for latitude and longitude, both considered as forcing variables, while the *Dist-specification* includes a polynomial for the distance to the border between treated and non-treated areas. No other controls are included.

Figure 7: Civic participation and crime rates in the OECD



(a) full sample



(b) excluding Mexico and Brazil

Source: Better Life Index (OECD).

Notes: Crime rate is the average between the standardized values of the assault rate and the homicide rate. Civic participation is the average between the standardized values of the consultation on rule-making rate and voter turnout. Standardized values are computed as $(x_i - x_{\min})(x_{\max} - x_{\min})$, where x_i is the value of the index for country i and $x_{\min}$ and $x_{\max}$ are, respectively, the minimum and the maximum values of the index. See http://www.oecdbetterlifeindex.org/ for details.

Table 8: Civic participation and security in the World Value Survey

Coefficient of interest: Do you feel in your neighborhood			
	Not very secure	Quite secure	very secure
Dependent variables:			
Importance of politics	0.109***	0.108***	0.139***
(coded 1 to 4)	(0.040)	(0.042)	(0.046)
No. Obs.		50,815	
R2		0.083	
Interest in politics	0.062	0.093**	0.128***
(coded 1 to 4)	(0.040)	(0.044)	(0.047)
No. Obs.		51,231	
R2		0.113	
Trust in government	0.109***	0.227***	0.334***
(coded 1 to 4)	(0.033)	(0.035)	(0.038)
No. Obs.		50,086	
R2		0.215	
Trust in political parties	0.090***	0.172***	0.247***
(coded 1 to 4)	(0.031)	(0.034)	(0.037)
No. Obs.		49,386	
R2		0.241	
Trust in Parliament	0.104***	0.210***	0.295***
(coded 1 to 4)	(0.036)	(0.035)	(0.039)
No. Obs.		49,264	
R2		0.251	
Usually or always go to vote	0.027***	0.040***	0.046***
(coded 0-1)	(0.011)	(0.014)	(0.016)
No. Obs.		49,444	
R2		0.173	

Source: Our calculations on World Value Survey data (Wave: 2010-14).

Notes: Standard errors in parenthesis (clustered at the country level). OLS weighted estimates, of equation (3). Weighted regressions according to sample design. All regression includes controls for: educational level, gender, marital status, number of children, a polynomial of third degree of age, citizenship status, city size, and country dummies. The variable of interest is a self-reported assessment of security (based on the question: "how secure do you feel in your neighborhood?") coded between 1 (feel not secure at all) and 4 (very secure). It enters equation (3) as a set of three dummy variables where we exclude the value 1 (feel not secure at all). * significant at 10 per cent, ** significant at 5 per cent, *** significant at 1 per cent.

Table 9: A test for common trend

Dependent variable:	# Executed 1799[(1)]	# Executed 1799[(1)]	# MP 1848[(2)]	# MP 1848[(2)]
β	-0.151*	-0.149*	-0.069	-0.048
	(0.085)	(0.088)	(0.166)	(0.166)
Controls	NO	YES	NO	YES
R^2	0.127	0.129	0.013	0.021
Observations	279	279	279	279
Dependent variable:	D Executed 1799[(3)]	D Executed 1799[(3)]	D MP 1848[(4)]	D MP 1848[(4)]
β	-0.079	-0.078	0.048	0.060
	(0.050)	(0.050)	(0.050)	(0.051)
Controls	NO	YES	NO	YES
R^2	0.122	0.122	0.035	0.045
Observations	279	279	279	279

Source: Our calculations on historical data on 1799 executions and 1848 MPs.

Notes: OLS estimates of equation (4); standard errors (in parenthesis) robust for heteroskedasticity. Forcing variables are polynomial for latitude and longitude (*Dell specification*). List of controls include: *Slope* is the difference (in meters) between the higher and the lowest point in the municipality; *Altitude* is the municipality's altitude in meters; *Seismic hazard* is a discrete variable ranging from 1 (high seismicity) and 4 (very low seismicity) and is taken from the Italian Statistical Office classification.

* significant at 10 per cent, ** significant at 5 per cent, *** significant at 1 per cent.

[1] Number of executed individuals in 1799 born in municipality m (# Executed 1799).

[2] Number of MP of 1848 born in municipality m (# MP 1848).

[3] Dummy equal to one if municipality m is the place of birth of one of the executed in 1799 (D Executed 1799).

[4] Dummy equal to one if municipality m is the place of birth of one of the MP of 1848 (D MP 1848).

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