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EXPOSING POLITICIANS' TIES TO CRIMINAL ORGANIZATIONS: THE EFFECTS OF LOCAL GOVERNMENT DISSOLUTIONS ON ELECTORAL OUTCOMES IN SOUTHERN ITALIAN MUNICIPALITIES

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**Fiscal Federalism**

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**ABSTRACT:** Since 1991, the Italian national government can dissolve municipal councils when infiltration by organized crime is suspected (Law 164/1991). We exploit variation over time and space in the application of this law to study voters' responses to politicians' publicly exposed ties to criminal organizations. Using a difference-in-differences approach, we find that public exposure of ties to organized crime significantly depresses turnout in local elections, and negatively impacts the electoral performance of incumbents and purely local political parties. The breach in the local political principal-agent relationship also translates into citizens' reduced willingness to contribute to the financing of local public goods.

JEL Codes: K42, H89, O17

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## **1. Introduction**

Electoral accountability lies at the heart of our conception of democracy (Barro 1973; Mayhew 1974; Ashworth 2012), and elections are often viewed as a critical means for voters to express their (dis)content with the performance of their politicians (Mitchell 2000; Strøm et al. 2003; Besley 2006; Geys and Mause 2015). Although this by no means always takes place, elections can also provide the opportunity for voters to respond to (what they perceive as) dishonest politicians or instances of outright corruption. Voters in modern democracies indeed expect politicians to adhere to a certain model of integrity, and strongly prefer them to abstain from illicit, inappropriate or illegal activities during the execution of their mandate. For instance, public debates about politicians' extra-parliamentary interests and earnings often involve heated discussions on the ethical aspects of such behaviour (Noel-Baker 1961; Hollingsworth 1991; Geys and Mause 2013).

Empirical research into the underlying corruption–accountability relation generally indicates that electoral support for the incumbent significantly decreases in the aftermath of a political scandal. Ferraz and Finan (2008) exploit random audits in Brazilian municipalities to show that publicly exposed corrupt incumbents are punished at the next elections. Costas-Pérez et al. (2012) and Chong et al. (2015) likewise find that providing voters with information about the inappropriate use of public funds reduces support for the incumbent in, respectively, Spain and Mexico. In similar vein, a substantial academic literature illustrates that corruption scandals tend to have negative implications for tax collection efforts (Artés et al. 2015; Timmons and Garfias 2015), depress voters' trust in politicians (Anderson and Tverdova 2003; Chang and Chu 2006; Solé-Ollé and Sorribas-Navarro 2014) and reduce voter turnout due to popular dissatisfaction with the political class (Peters and Welch 1980; Caillier 2010; Bauhr and Grimes 2013; see, however, Kostadinova 2009).

Previous research in this field predominantly concentrates on the electoral and broader social effects of politicians charged with specific illegal activities such as, for instance, embezzlement of public funds, corruption or accepting bribes. In this article, we take a broader perspective and are, to the best of our knowledge, the first to explicitly analyse the effects of politicians' publicly exposed ties to criminal organizations. Although this is arguably a very specific form of corruption (Gambetta and Reuter 1995; Heywood 1997), it is highly economically and politically relevant. Criminal organizations are often equipped with substantial economic and military resources, and their detrimental economic effects have been extensively documented in a variety of contexts (Pinotti 2015). Recent studies furthermore illustrate that criminal organizations can also represent a serious threat to elected governments, and are likely to induce important distortions in the political selection process (Dal Bó et al. 2006; Acemoglu et al. 2013; Daniele 2015; Daniele and Geys 2015; De Feo and De Luca 2015). Investigating voters' reactions to politicians' publicly exposed ties to organized crime thus is critical to evaluate whether the democratic process in itself can be an effective tool in restraining the (political) influence of criminal organizations.

Our empirical analysis employs data from southern Italian municipalities in the regions of Calabria, Campania and Sicily covering the period 1985-2013. We select these three regions because the mafia has traditionally been concentrated here, and the set of municipalities in our analysis thus becomes restricted to those that are sufficiently comparable in terms of the *potential* involvement of organized crime in local politics (Sberna 2011; Daniele and Geys 2015). Our identification strategy then is based on a law created by the Italian national parliament in 1991 aimed at reducing the impact of organized crime on local politics (Law 164/1991). Law 164/1991 states that the national government has the power to dissolve a

municipal council – and appoint a temporary technocratic government – whenever any evidence arises of direct or indirect ties between local politicians and organized crime. Since its introduction in 1991, several council dissolutions for presumed mafia infiltration have been enforced every single year. In total, 254 dissolutions have taken place over the period 1991-2014. Importantly, the enforcement of this law within a given municipality at a specific point in time represents an exogenous shock to the local political establishment, since its occurrence and timing is fully determined at the national level. Furthermore, and crucially, it implies the public exposure of incontrovertible evidence of ties between local politicians and criminal organizations, which is likely to induce a sharp change in citizens' perceptions of local politicians. Hence, variation over time and space in the application of this law provides a unique opportunity to test the electoral reactions to such mafia-related scandals using a difference-in-differences (DiD) strategy.

Comparing political outcomes in municipalities with *and* without the enforcement of Law 164/1991 before *and* after its enforcement, we show that public exposure of politicians' ties to organized crime causes a statistically significant drop in voter turnout during subsequent local elections. This is in line with previous studies showing a decrease in voter turnout following alternative cases of corruption (Caillier 2010; Bauhr and Grimes 2013), and indicates that voters express their dissatisfaction with the political class at least in part through increased abstention. Importantly, while we observe a similar drop in voter turnout in national elections taking place in the years immediately following local council dissolutions, this drop is much weaker (i.e. approximately 30% to 40% of the drop in local turnout). The difference in the strength of both effects strongly suggests that voters' discontent is specific to local politicians, or, at least, that voters are able to largely target the expression of their discontent to the local political level. In line with such interpretation, we also find that the

enforcement of Law 164/1991 has a negative impact on the electoral performance of the incumbent party (which is most clearly implicated by the council's dissolution) as well as purely local political parties (which we show are more likely to be in power when council dissolutions take place). Instead, voters appear to turn towards local chapters of national parties. This is particularly true for nationally active left-wing parties, which have traditionally been less affected by mafia infiltration (see Dickie 2005).

Finally, we also find evidence of a significant decrease in local government's ability to collect fiscal revenues in the period immediately following a council dissolution for presumed mafia infiltration. Voters thus appear to become less willing to pay local taxes or contribute to the financing of local public goods when they perceive local politicians as being delegitimized by mafia connections. This finding is consistent with the idea – well-known from social exchange theory (Blau 1964; Akerlof 1982) – that public exposure of politicians' apparent ties to organized crime breaches their side of the (psychological) contract between politicians and voters (in which politicians should abstain from illicit, inappropriate or illegal activities), and voters' subsequent 'retaliation' via their tax payments.

Overall, our results indicate that voters use local politicians' public exposure of ties to organized crime to evaluate their political environment. The resulting shift in voters' political decisions is in line with theories of retrospective voting, which maintain that voters use elections to remove low-quality candidates from political power (Persson and Tabellini 2002; Besley 2006). More importantly, however, it also contributes to the expanding literature on the efficacy and influence of anti-corruption programs (Olken 2007), and particularly on the role of "information disclosure about corruption (...) [to] reduce capture of public resources" (Ferraz and Finan 2008: 706; Reinikka and Svensson 2005; Gentzkow et al. 2006). Our

findings indeed underline that the public availability of information about the results of anti-corruption programs have the ability to reduce asymmetric information problems in the political process, which in turn allows voters to select better politicians (see also Ferraz and Finan 2008).

## **2. Institutional Framework**

### *2.1. Law 164/1991*

Following a period of intense mafia-related killings, the Italian government reinforced its legislation aimed at fighting organized crime in the early 1990s. A crucial innovation thereby was the introduction of Law 164/1991, which aims at breaking ties between organized crime and politicians in local institutions. The law particularly states that whenever direct or indirect links emerge between local elected politicians and criminal organizations, or when there are suggestions of undue pressures influencing or compromising the normal functioning of the local administration, the municipal council can be dissolved and replaced by a temporary technocratic caretaker government. Any proposal to dissolve a local government derives from a parliamentary commission (the '*Commissione Parlamentare Antimafia*') within the Ministry of Interior, and must be approved by the President of the Republic and the government cabinet. The technocratic caretaker government consists of three commissioners nominated by the Ministry of Interior (generally high-level bureaucrats), who will govern the municipality for a period of 12 to 24 months. Subsequently, local elections will be organized, and a new municipal government can take charge. The inauguration of this new government naturally also brings about the discharge of the commissioners.

Figure 1 shows the distribution of the enforcement of Law 164/1991 over time. This clearly illustrates that dissolutions have taken place every single year since the introduction of the



new legal framework, which helps differentiating the effects of the law from those of time-specific events in our analysis below. The substantial peak of dissolutions in the early 1990s links to a period of intense and escalating conflict between the mafia and Italian institutions (Dickie 2005), and indicates a high initial willingness to employ the new legal tool in the fight against organized crime. In more recent years, the number of dissolutions due to presumed mafia infiltration increased strongly again. This observation might be associated with a recent reinvigoration of the political will to fight organized crime as well as a re-intensification of the political power of criminal organizations. The fact that several of the recent dissolutions have been implemented in municipalities in northern Italy – which had not occurred previously – gives some weight to the latter interpretation, since it suggests that criminal organizations are extending their (political) activities outside their ‘traditional’ strongholds. In this paper, we restrict the sample to municipalities in Calabria, Campania and Sicily, as most dissolutions have historically taken place in these three regions (see Figure 2), and the mafia has traditionally been concentrated here.

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Figures 1 and 2 about here

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From a methodological perspective, it is important to observe that the enforcement of Law 164/1991 is fully determined at the national level, and its occurrence and timing therefore remains exogenous from the perspective of the local political establishment. Furthermore, even when (some) voters might have had suspicions about local politicians before the council dissolution, the dissolution itself arguably still constitutes an important shock because it provides incontrovertible *evidence* of ties between local politicians and criminal organizations. Given the specifics of the decision process, its timing is also unpredictable by the local population, such that the exact moment of the dissolution remains unexpected. This

allows us to exploit these dissolutions as the basis for our identification strategy when studying voters' responses to politicians' publicly exposed ties to criminal organizations (see below). We should also note in this respect that since 34 municipalities have seen their council dissolved twice (and seven municipalities even had a third dissolution), we restrict attention to the first dissolution that occurs in any given municipality. Later dissolutions are presumably less informative or unexpected, and thus are less likely to induce a sharp change in citizens' perceptions of local politicians.

## *2.2. Local political system*

Local government in Italy is organised along a parliamentary system, and consists of a legislative branch (*Consiglio*, or local council) and an executive branch (*Giunta*, or local government). Both local political institutions are headed by the mayor. During municipal elections, citizens directly elect the councillors (*Consiglieri*) and – since 1993 – the mayor (*Sindaco*). Importantly, not all 8000 Italian municipalities hold elections at the same time, but they do all operate on an electoral cycle of similar length (i.e. five years). Consequently, local elections are effectively quasi randomly distributed across municipalities in a five year cycle. After an election, the mayor is in charge of appointing a certain number of aldermen (*Assessori*) depending on the population size of the municipality. Municipal councils have important powers in terms of local taxes (particularly taxes on property) and the provision of public goods (for instance, culture and recreation, transport, economic development, education, waste management, local police and social welfare).

### 3. Empirical analysis

#### 3.1. Estimation Strategy

As indicated above, we use the exogenously imposed enforcement of Law 164/1991 to identify voters' responses to the public exposure of politicians' ties to organized crime. We particularly exploit the temporal and geographical variation in these shocks to local politics via a difference-in-differences approach comparing municipalities with/without the enforcement of Law 164/1991 before/after its enforcement. Using subscript  $i$  for municipalities and  $t$  for time, the baseline specification is:

$$Y_{i,t} = \alpha_i + \beta_1 \text{AfterDissolution}_{i,t} + \beta_2 \text{Year}_t + \beta_3 \text{Controls}_{i,t} + \varepsilon_{i,t} \quad (1)$$

$Y_{i,t}$  covers a set of political outcomes at the municipal level at time  $t$ , which can be expected to be dependent upon citizens' perceptions of the integrity – or lack thereof – of the local political class. In close correspondence to previous work on the implications of political scandals (e.g., Peters and Welch 1980; Ferraz and Finan 2008; Kostadinova 2009; Caillier 2010; Bauhr and Grimes 2013; Chong et al. 2015), we thereby analyse voter turnout rates as well as electoral support for the incumbent (or voters' partisan preferences more generally). Given that these outcomes by definition are specific to elections, the time dimension of the analysis at this point includes only election years. In addition, we extend previous work by also analysing local governments' ability to collect local fiscal revenues, which evaluates the extent to which any breach in trust in the local political principal-agent relationship translates into citizens' lower willingness to contribute to the financing of local public goods (as predicted by social exchange theory; Blau 1964; Akerlof 1982; more details below). Since this information is available on a yearly basis, the analysis here includes all years. The exact operationalisation of these various dependent variables is provided in subsequent sections below.

Our main explanatory variable in equation (1) is  $AfterDissolution_{i,t}$ . It is operationalised as an indicator variable equal to one in municipalities dissolved for ties between local politicians and criminal organizations in the period after the dissolution (0 otherwise). To assess the temporal persistence of any observed effects, we thereby distinguish between the first election following the mafia-related council dissolution (i.e. *First election after dissolution*) and all subsequent elections after the dissolution in our sample (i.e. *Later elections after dissolution*). Throughout the analysis, we furthermore include a full set of municipality fixed effects ( $\alpha_i$ ) as well as a full set of year fixed effects ( $Year_t$ ). The former intend to capture any (un)observed heterogeneity across municipalities, while the latter account for time-specific elements common to all municipalities. Finally, in some specifications we also introduce province-year fixed effects, which accommodate for the potential influence of any type of time-varying changes at the provincial level (we have 19 provinces in our sample). Summary statistics are reported in Appendix 1.

Clearly, as mentioned above, a central assumption underlying our empirical approach is that the dissolution of local council reveals new information to voters about their political principals (thus representing a novel signal about the quality of local government), and that this information is widely disseminated within the local population. The information-dissemination assumption appears trivially acceptable since the dissolution of one's municipal council is unlikely to go unnoticed among voters. The new-information assumption is more difficult to verify directly, but complete confirmation of citizens' priors would not induce any significant effects in the analysis below. Furthermore, our use of municipality fixed effects ( $\alpha_i$ ) (as well as province-year fixed effects in some models) captures citizens' priors about local-level corruption.

### 3.2. Voter Turnout

In Table 1, we estimate model (1) using voter turnout rates – measured as the total number of votes cast during an election as a percentage of the total eligible population in the municipality<sup>1</sup> – as the dependent variable. In panel I of Table 1, we focus on voter turnout in municipal elections over the period 2000-2013, whereas panel II analyses turnout in national elections between 1987 and 2008. Since we unfortunately lack information on voter turnout in municipal elections prior to 2000, the time period and number of observations available for analysis in panel I is considerably lower than in panel II. In both panels, the results in columns (1), (3) and (5) focus on the immediate effect of politicians' publicly exposed ties to criminal organizations in the first election after the dissolution, whereas columns (2), (4) and (6) also assess the presence of any longer-term effects across subsequent elections after the dissolution. In each case, several sets of results are provided. Columns (1) and (2) exclude province-year fixed effects, which are included in columns (3) to (6). Moreover, Columns (1) to (4) include all available observations, whereas columns (5) and (6) restrict the sample to municipalities where Law 164/1991 is enforced at some point in time. While the latter leads to a very restrictive sample particularly in panel I, it confines our inferences to the sample of municipalities where organised crime is most obviously politically active in the period under analysis – whether or not it has already been *revealed*. As such, it goes some way towards controlling for possible unobserved differences between municipalities with and without mafia infiltration, and arguably can provide an estimate of the mafia revelation effect distinctly from the mafia infiltration effect.

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<sup>1</sup> This operationalisation includes both valid, invalid and null votes. An alternative operationalisation using only valid votes as a percentage of the total eligible population in the municipality does not affect any of the inferences drawn below in terms of effect sizes and significance levels. Note also that we likewise experimented with the share of invalid and null votes (relative to all votes cast in the election) as the dependent variable. These auxiliary regressions consistently show small positive coefficient estimates, but these effects always remain statistically insignificant at conventional levels (full details upon request).

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Table 1 about here

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The results in panel I of Table 1 show that publicly exposing local politicians' ties to criminal organizations has an important effect on voter turnout in subsequent municipal elections. The coefficient estimates suggest that voters become statistically significantly less likely to participate in local elections, with an estimated effects size of 2.8 to 3.9 percent in the first election after the dissolution. Even in the very restrictive samples used in column (5) and (6), the estimated effects remain statistically significant and substantively meaningful. Interestingly, columns (2) and (4) indicate that the effect also appears to be quite persistent over time. While this observation cannot be confirmed in column (6), it should be observed that the number of observations for dissolved municipalities in later elections in this sample is very small, which substantially undermines the power of our test procedure in this instance. Overall, however, our findings are in line with previous studies indicating a decline in citizens' interest in politics following corruption scandals (Chong et al., 2011; Stockemer, 2013; Stockemer et al., 2013; Costas-Pérez, 2014).

Panel II of table 1 shows that there is similar decline in voter turnout rates in national elections after the enforcement of law 164/1991. The coefficient estimates, however, are consistently substantially lower than in panel I (i.e. approximately 30% to 40% of the voter turnout drop in municipal elections). This apparent concentration of the turnout decline in municipal elections strongly indicates that *local* political issues – such as local politicians' publicly exposed ties to criminal organizations – are the predominant driving force behind the findings in panel I. Moreover, it provides some indication that alternative possible mechanisms based on, for instance, vote buying activities of criminal organizations (Dickie

2005; De Feo and De Luca 2015) are unlikely to explain our results. Indeed, if such mechanism were driving the results in panel I of Table 1, we should expect them to likewise exist in national elections – and thus observe a similar drop in turnout *also* in the results for national elections in panel II.

### 3.3. Party choice

Our findings thus far illustrate that voters react to politicians’ publicly exposed ties to criminal organizations by increased abstention on Election Day. This section takes the analysis one step further and turns to the potential effects of mafia-related corruption scandals on voters’ party choice. Previous research has highlighted an important negative effect of publicly exposed corruption on the incumbent’s – or incumbent party’s – vote share (e.g., Ferraz and Finan 2008; Chang et al. 2010; Costas-Perez et al. 2012; Chong et al. 2015). Table 2 – which follows the same format as Table 1 – evaluates the presence of a similar effect in our setting. We therefore estimate equation (1) using an indicator variable equal to one if the incumbent party (i.e. the party in power at the time of the dissolution) is re-elected in post-dissolution elections as the dependent variable. We expect  $\beta_1 < 0$ .

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Table 2 about here

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The results in Table 2 are in line with our expectations, and suggest a statistically significant drop in incumbent’s probability of retaining control over the local council in post-dissolution elections. Across all specifications in Columns (1) to (4), the estimated effect size is also substantively meaningful, since the incumbent party’s probability of winning the elections after a mafia-corruption scandal declines with 11 to 17 percent. Columns (5) and (6), however, provide substantially weaker results in terms of effect size and statistical

significance. Although the power of the analysis here is reduced by the fact that the number of observations is only 10% of the sample in Columns (1) to (4), some caution is clearly required in assessing the impact of a mafia-corruption scandal on the local incumbent's probability of re-election.

Intuitively, negative effects on the incumbent party's electoral appeal would seem obvious to arise, since this party is clearly most immediately implicated by the council dissolution. Table 2 does not indicate, however, whether such effects would similarly arise with respect to the overall local party system. Table 3 therefore extends the analysis to all political parties active within a given municipality, and assesses more generally whether – and, if so, in which direction – voters' political preferences shift following the public exposure of local politicians' ties to organized crime. In this case, the dependent variable(s) when estimating equation (1) is a set of four indicator variables set to 1 if a specific political party wins the local elections. We thereby consider four groups of political parties: i.e. purely local parties (i.e. without clear affiliation to national parties), left-wing, right-wing and centrist parties. The results are summarized in Table 3. The top panel of Table 3 shows the results when concentrating on the first election following the council dissolution, whereas the bottom panel also includes any potential effects in later elections after the enforcement of Law 164/1991. To preserve space, we only report the results when including province-year and municipality fixed effects, but the results are qualitatively unchanged considering different specifications (details upon request).

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Table 3 about here

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The key findings in Table 3 suggest that purely local parties are significantly *less* likely to win local elections following the dissolution of the municipal council. Their probability of gaining control over the local council indeed declines with approximately 20 percent in the first post-dissolution election, and just under 15 percent in later post-dissolution elections. In contrast, left-wing parties become significantly *more* likely to win elections in the post-scandal period: i.e. roughly 19 percent in the short term and almost 14 percent in the longer term. Right-wing parties also appear to become somewhat more likely to local elections, but this effect is only about half the size of that observed for left-wing parties. No effects are found for centrist parties. The substantial shift towards nationally active left-wing parties results may well be linked to voters' perceptions about different parties' politicians' integrity. On the one hand, Dickie (2005) presents substantial anecdotal evidence suggesting that the Italian Communist party had been immune to mafia infiltration until its dissolution at the end of the 1980s. It is at least conceivable that the same observation persists to some degree also for current Italian left-wing parties. On the other hand, purely local parties might be more likely to be infiltrated by criminal organizations since, in stark contrast to the local divisions of national or regional parties, they are not accountable to any higher-level organization.

To further substantiate this interpretation, we turn to an analysis of the probability that local councils are dissolved for suspected mafia infiltration in Table 4. The estimation model is given by (with subscript  $i$  for municipalities and  $t$  for time):

$$Dissolution_{i,t} = \alpha_i + \beta_1 Party_{i,t} + \beta_2 Year_t + \beta_3 Controls_{i,t} + \varepsilon_{i,t} \quad (2)$$

The dependent variable  $Dissolution_{i,t}$  is an indicator variable equal to one for municipalities where the local council is dissolved in the year *before* the enforcement of Law 164/1991. The key independent variables – captured by  $Party_{i,t}$  – are a set of indicator variables equal to 1

if a given political party is in power in municipality  $i$  in year  $t$ . As before, we thereby consider four groups of political parties: i.e. purely local parties, left-wing, right-wing and centrist parties. As such, the model evaluates the probability that a certain political party controls the municipal council at the time of the enforcement of Law 164/1991 (i.e. at the time of the mafia-corruption scandal). Based on our discussion above, we would expect a higher (lower) probability of mafia-related dissolutions in municipalities governed by purely local (left-wing) political parties.

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Table 4 about here

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The results in Table 4 are broadly consistent with our expectations. That is, we observe that municipalities governed by purely local parties (which constitute the reference category in Table 4) are *most* likely to be dissolved for suspected mafia infiltration. The coefficient estimates for all other parties are indeed negative. Moreover, we observe the strongest effect – in terms of both statistical significance and estimated effect size – for left-wing political parties. These parties thus appear *least* likely to be dissolved for suspected mafia infiltration. Consequently, citizens’ observed shifts in party choice in the aftermath of a mafia-related council dissolution (see Table 3) can at least in part be rationalized by the fact that purely local parties are indeed most likely to be accused of having ties with the mafia.<sup>2</sup>

Taken together, tables 2 to 4 again suggest a precisely ‘targeted’ voter response. That is, voters can seemingly target their retribution to politicians and parties directly linked to the

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<sup>2</sup> Purely local parties in our Italian setting are often focused on a limited number of very specific policy issues, or are built around local personalities. As such, these parties tend to be subject to frequent mergers, break ups or other changes in their composition or their name, and generally witness high turn-around across elections (for a similar observation in a different setting, see Vermeir and Heyndels 2006). Even so, however, voters may decide to turn away from purely local parties following a mafia-related political scandal because they lose trust in the category of ‘local parties’ more generally (rather than in a *specific* local party).

scandal rather than simply punish all politicians independent of their partisan affiliation (or their actual tie to the scandal). This finding is at odds with recent results by Chong et al. (2015) in Mexico, who show that increased knowledge about the incumbent's level of corruption reduces *both* incumbent *and* challenger support in roughly equal measure. Voters in their setting appear to simply withdraw from the political process. One possible explanation for this difference might be that many challengers in their Mexican data had previous political experience at a level of government with “the most discredited jobs in Mexican politics” (Chong et al. 2015: 70). Hence, most challengers in their setting are likely to be known to voters and tend to have a tainted political past. This is not the case in our Italian dataset since “first-time politicians represent a very significant share of the overall population” (Daniele 2015; see also Daniele and Geys 2015). Voters in Italian municipalities thus are much less likely to be familiar with the incumbents' challengers, which may be a reason to give them the benefit of the doubt.

#### *3.4. Local fiscal revenues*

Overall, our findings in Tables 1 to 4 corroborate the idea that politicians' publicly exposed ties to criminal organizations have important electoral implications in subsequent years. This strongly suggests that voters witness a substantial decrease in trust in local politics following the exposure of mafia ties to local politicians (for similar observation on other types of political scandals, see Anderson and Tverdova 2003; Chang and Chu 2006; Solé-Ollé and Sorribas-Navarro 2014). In this section, we broaden the analysis beyond purely electoral outcomes and explore whether the public exposure of ties to organized crime also affects citizens' willingness to pay for local public goods through local taxation.

It is well-known from social exchange theory that actors' perceived obligations towards one another are dependent upon both an explicit and an implicit contract or agreement between them (Blau 1964; Akerlof 1982). The implicit (or psychological) contract thereby "entails a social exchange that is superimposed upon the strictly economic transaction [i.e. the explicit contract]" (Blau 1964: 94) and comes about "as a result of normative expectations and value orientations in collectives" (Blau 1964: 5). For instance, in a work environment the implicit contract between employers and employees may be such that employers "give trust, loyalty and recognition to workers, and workers give effort in return" (Barkema 1995: 22; see also Frey 1993a, b). In our setting, a likely manifestation of such a psychological contract between politicians and voters could consist of politicians' abstention from illicit, inappropriate or illegal activities during their political mandate and voters' regular payment of their taxes. The public exposure of politicians' apparent ties to organized crime could in such framework be viewed as an important breach of politicians' side of this implicit agreement. Since corruption perceptions are generally a strong determinant of tax compliance (Cummings et al. 2009; Torgler and Schneider 2009; Rothstein et al. 2012; Timmons and Garfias 2015), one might therefore expect that voters could 'retaliate' via their tax payments. The psychological contract between politicians and voters thus is likely to place important "demand-side constraints on tax collection" (Timmons and Garfias 2015: 13).

To assess this, we estimate equation (1) with an indicator of local governments' ability of revenue collection as the dependent variable. This indicator was recently employed also by Drago et al. (2014), and effectively measures the ratio between actually collected revenues within a municipality in a given year and the total amount of assessed revenues this municipality should have collected within that year. As such, it can be interpreted as a proxy for the local government's ability to fight tax evasion (Drago et al. 2014). Local revenues are

of critical importance to Italian local governments since they constitute a main source of income in the municipal budget. For instance, local revenues on average corresponded to 52% of the entire budget for Italian municipalities in 2009 (IFEL 2014). Consequently, Italian municipalities tend to be financially dependent on a strong ability of local revenue collection. Generally, such revenues derive partly from local taxes (e.g., on properties and waste disposal) and partly from retributions charged for locally provided public goods (e.g. kindergartens, local public transport, and museums).

The results are summarized in Table 5. Note that we do not restrict the sample to electoral years in this analysis since we observe the evolution of the revenue indicator on a yearly basis. Furthermore, since the commissioners nominated by the national government might have had an impact on local government performance, we extend equation (1) with an addition indicator variable equal to one in the year(s) of the commissioners' government (i.e. *Under Law 164*).

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Table 5 about here

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The results in Table 5 are indicative of a drop in the ability of revenue collection after a mafia-corruption scandal. Interestingly, the effect appears to arise almost immediately, since we observe negative point estimates already during the period of the commissioners' government (though this generally remains statistically insignificant at conventional levels). The observed effects strengthen to approximately 3.5 percentage points when a new local government is appointed after the first round of post-dissolution elections, which is equivalent to about 20% of a standard deviation. Such findings are consistent with the idea that voters react to politicians' breach of the psychological contract underlying the local

political principal-agent relationship via their tax payments.<sup>3</sup> Nonetheless, columns 3 and 4 clearly illustrate that the drop in revenue ability is *not* persistent over time, but rather improves again after later elections. Hence, the local political class appears to be able to redeem itself over time. This lack of persistence in corruption's revenue effects over time is also observed in Timmons and Garfias' (2015) study of revealed financial corruption and tax compliance in Brazilian municipalities.<sup>4</sup> They suggest that continued information about corruption may be crucial to sustain a link between politicians' integrity and tax compliance, which may also play some role in our setting.

To more comprehensively assess the timing of the observed effects, Figure 3 depicts the results when using a more flexible functional form, which allows for more detailed temporal variation in the estimated effect of mafia infiltration. Specifically, rather than including only indicator variables for the first and later electoral periods following the mafia-related council dissolution (i.e. *First election after dissolution*, and *Later elections after dissolution*), we include a set of time-specific dummy variables ( $D+x$ ) that take value one only for municipalities put under commissioners in the years  $x$  and  $x+1$  subsequent to the dissolution of the government due to (presumed) mafia infiltration (with  $x = 2, \dots, 14$ ). Note that the post-dissolution period starts two years after the actual dissolution since the appointed commissioners govern the municipality for a period of 12 to 24 months (see above). Moreover, we look at bi-yearly periods to maintain sufficient observations for dissolved municipalities in each post-dissolution time-period. The left-hand panel of Figure 3 employs

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<sup>3</sup> Since the observed effects already arise during the commissioners' term, one alternative explanation might be that the commissioners' actions are linked to the decrease in revenue ability (i.e. a 'supply' rather than a 'demand'-side effect). Given the importance of local revenues to municipal governments, this appears unlikely to be an important factor in our setting.

<sup>4</sup> Artés et al. (2015) likewise illustrate that revealed financial corruption is associated with a reduction of local tax revenues (and expenditures) in Spain.

all available observations, whereas the right-hand panel of the figure restricts the sample to municipalities where Law 164/1991 is enforced at some point in time.

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Figure 3 about here

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The results in Figure 3 indicate a significant U-shaped pattern. The drop in the municipalities' ability of revenue collection after a mafia-corruption scandal starts already in the period when the commissioners are governing the municipality (i.e. *Under Law 164* in Figure 3), and gradually strengthens until six to seven years after the dissolution. Afterwards, the ability of revenue collection recovers and even becomes somewhat higher than in municipalities *not* involved in a mafia-corruption scandal by the end of our observation period (i.e. 14-15 years after the dissolution). This temporal pattern suggests that the first government elected after the mafia-corruption scandal – and in power for the five-year term in years two to seven after the dissolution – suffers most strongly from voters' reaction to politicians' breach of the psychological contract, but that later governments experience a redemption effect.

#### **4. Conclusion**

This paper contributes to the literature on anti-corruption policies by studying voters' responses to politicians' publicly exposed ties to criminal organizations in Southern Italian municipalities (1985-2013). For identification of causal effects, we exploit Law 164/1991, which was approved by the Italian parliament in 1991 to help break ties between local politicians and criminal organizations. According to this law, the Italian parliament can temporarily dissolve a city council whenever there is the presumption of organized crime's infiltration in the city council, and replace the elected politicians with a team of external

technocrats. The exogenous nature of the decision to dissolve a local city council (i.e. both the verdict and the timing are fully determined at the national level) and the variation over time and space in the application of this law provides a unique opportunity to compare the electoral outcomes of municipalities with and without mafia-related government dissolutions before and after such dissolution.

Our main results indicate that in the aftermath of a mafia-related political scandal voters reduce their support for local-based parties (which are more likely to be involved in corruption) and increase their support for nationally active left-wing parties (which are less likely to be involved in such scandals). This indicates that – in line with theories of retrospective voting (Persson and Tabellini 2002; Besley 2006) – voters use elections to remove low-quality candidates from political power. Moreover, the accountability mechanisms at work appear very precise in the sense that voters can seemingly target their retribution to politicians and parties directly linked to the scandal (rather than punish all politicians). A similarly ‘targeted’ response is also observed with respect to voter turnout. Indeed, following the dissolution of a city council for organized crime infiltration, we find evidence of a significant decrease in voter turnout at local elections, but a much weaker response in turnout rates for national elections. While such a decline in turnout is consistent with voters’ dissatisfaction translating into increased electoral abstention (Peters and Welch 1980; Caillier 2010; Bauhr and Grimes 2013; Chong et al. 2015), voters again seem able to target their discontent toward the local political class directly involved in the corruption scandal.

Finally, we provide evidence that the apparent breach in trust in the local political principal-agent relationship has effects also beyond the electoral arena. In fact, significant detrimental



effects can likewise be observed with respect to citizens' willingness to contribute to the financing of local public goods. Local fiscal revenues represent an important source of income for Italian municipalities, which is directly managed by the city council, and our results suggest that voters mete out punishment for exposed corruption via their tax payments – in line with predictions from social exchange theory (Blau 1964; Akerlof 1982; Frey 1993a, b).

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Table 1: Effect of public exposure of ties to organized crime on voter turnout

	(1)	(2)	(3)	(4)	(5)	(6)
<b>Panel I: Turnout in municipal elections (2000-2013)</b>						
<i>First election after dissolution</i>	-0.038 *** (-3.25)	-0.039 *** (-3.49)	-0.037 *** (-3.20)	-0.038 *** (-3.25)	-0.028 ** (-2.45)	-0.029 *** (-2.61)
<i>Later elections after dissolution</i>		-0.031 *** (-2.98)		-0.026 ** (-2.44)		-0.012 (-0.71)
$R^2$ (within)	0.39	0.40	0.49	0.50	0.43	0.43
$N$	3,053	3,087	3,053	3,087	376	410
<b>Panel II: Turnout in national elections (1987-2008)</b>						
<i>First election after dissolution</i>	-0.016 *** (-2.57)	-0.013 ** (-2.06)	-0.013 ** (-2.45)	-0.011 * (-1.92)	-0.014 ** (-2.19)	-0.008 (-1.12)
<i>Later elections after dissolution</i>		-0.018 *** (-2.72)		-0.015 ** (-2.36)		-0.002 (-0.28)
$R^2$ (within)	0.32	0.31	0.44	0.44	0.58	0.50
$N$	9,182	9,471	9,182	9,471	874	1,163
<i>Municipality FE</i>	YES	YES	YES	YES	YES	YES
<i>Year FE</i>	YES	YES	YES	YES	YES	YES
<i>Province-Year FE</i>	NO	NO	YES	YES	YES	YES

Note: The table shows the results from a difference-in-differences regression analysis using voter turnout as dependent variable. Panel I focuses on turnout in local elections, while panel II evaluates turnout in national elections. *First election after dissolution* is an indicator variable equal to one for municipalities where Law 164/1991 is enforced in the first election after its enforcement. *Later elections after dissolution* is an indicator variable equal to one in municipalities where Law 164/1991 is enforced in all elections subsequent to the first election after its enforcement. The slight difference in the number of observations in columns (1), (3) and (5) relative to columns (2), (4) and (6) derives from the exclusion of later-election observations from the sample in the former. Columns (1) to (4) employ all available observations, whereas columns (5) and (6) restrict the sample to municipalities where Law 164/1991 is enforced at some point in time. T-statistics based on standard errors clustered at the municipality level in brackets. \*  $p < 0.10$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ .

Table 2: Effect of public exposure of ties to organized crime on the incumbent (1985-2011)

	(1)	(2)	(3)	(4)	(5)	(6)
<i>First election after dissolution</i>	-0.143 *** (-2.66)	-0.147 *** (-2.77)	-0.189 *** (-3.18)	-0.186 *** (-3.13)	-0.119 (-0.99)	-0.043 (-0.45)
<i>Later elections after dissolution</i>		-0.128 ** (-2.49)		-0.156 *** (-2.87)		-0.080 (-0.72)
$R^2$ (within)	0.12	0.12	0.26	0.26	0.57	0.52
$N$	6,877	7,018	6,877	7,018	585	726
<i>Municipality FE</i>	YES	YES	YES	YES	YES	YES
<i>Year FE</i>	YES	YES	YES	YES	YES	YES
<i>Province-Year FE</i>	NO	NO	YES	YES	YES	YES

Note: The table shows the results from a difference-in-differences regression analysis using as dependent variable an indicator variable equal to one if the incumbent party wins the local election. *First election after dissolution* is an indicator variable equal to one for municipalities where Law 164/1991 is enforced in the first election after its enforcement. *Later elections after dissolution* is an indicator variable equal to one in municipalities where Law 164/1991 is enforced in all elections subsequent to the first election after its enforcement. The slight difference in the number of observations in columns (1), (3) and (5) relative to columns (2), (4) and (6) derives from the exclusion of later-election observations from the sample in the former. Columns (1) to (4) employ all available observations, whereas columns (5) and (6) restrict the sample to municipalities where Law 164/1991 is enforced at some point in time. T-statistics based on standard errors clustered at the municipality level in brackets. \* p<0.10; \*\* p<0.05; \*\*\* p<0.01.

Table 3: Effect of public exposure of ties to organized crime on party preferences (1985-2011)

	<i>Local Party</i>	<i>Left Party</i>	<i>Right Party</i>	<i>Centrist Party</i>
<b>Panel I: Short-term effect</b>				
<i>First election after dissolution</i>	-0.196 *** (-3.91)	0.186 *** (3.45)	0.086 * (1.94)	0.027 (0.59)
<i>R<sup>2</sup> (within)</i>	0.49	0.21	0.23	0.36
<i>N</i>	6,877	6,877	6,877	6,877
<b>Panel II: Long-term effect</b>				
<i>First election after dissolution</i>	-0.187 *** (-3.85)	0.190 *** (3.53)	0.081 * (1.80)	0.022 (0.49)
<i>Later elections after dissolution</i>	-0.147 *** (-3.08)	0.138 *** (2.60)	0.079 * (1.86)	0.005 (0.11)
<i>R<sup>2</sup> (within)</i>	0.49	0.21	0.22	0.36
<i>N</i>	7,018	7,018	7,018	7,018
<i>Municipality FE</i>	YES	YES	YES	YES
<i>Year FE</i>	YES	YES	YES	YES
<i>Province-Year FE</i>	YES	YES	YES	YES

Note: The table shows the results from a difference-in-differences regression analysis using as dependent variable an indicator variable reflecting the political colour of the winning party at the municipal (i.e. Local Party, Left Party, Right Party and Centre Party). *First election after dissolution* is an indicator variable equal to one for municipalities where Law 164/1991 is enforced in the first election after its enforcement. *Later elections after dissolution* is an indicator variable equal to one in municipalities where Law 164/1991 is enforced in all elections subsequent to the first election after its enforcement. Panel I therefore focuses on the short-term immediate effects on voting patterns, while panel II evaluates longer-term effects. T-statistics based on standard errors clustered at the municipality level in brackets. \*  $p < 0.10$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ .

Table 4: Enforcement of Law 164/1991 and Political Party in Power (1985-2011)

	(1)	(2)
<i>Local Party</i>	Reference category	
<i>Left Party</i>	-0.020 *** (-3.35)	-0.019 *** (-3.24)
<i>Right Party</i>	-0.012 (-1.37)	-0.013 (-1.47)
<i>Centrist Party</i>	-0.010 (-1.35)	-0.017 ** (-2.45)
$R^2$ (within)	0.04	0.21
$N$	5,067	5,067
<i>Municipality FE</i>	YES	YES
<i>Year FE</i>	YES	YES
<i>Province-Year FE</i>	NO	YES

Note: The table shows the results from a difference-in-differences regression analysis using as dependent variable an indicator variable equal to one in the year *before* the dissolution of the municipal council due to mafia infiltration. The independent variables are indicator variables equal to one when a political party (i.e. Left Party, Right Party and Centre Party; Local Party is the reference group) is in power in a municipality in a given year. T-statistics based on standard errors clustered at the municipality level in brackets. \*  $p < 0.10$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ .

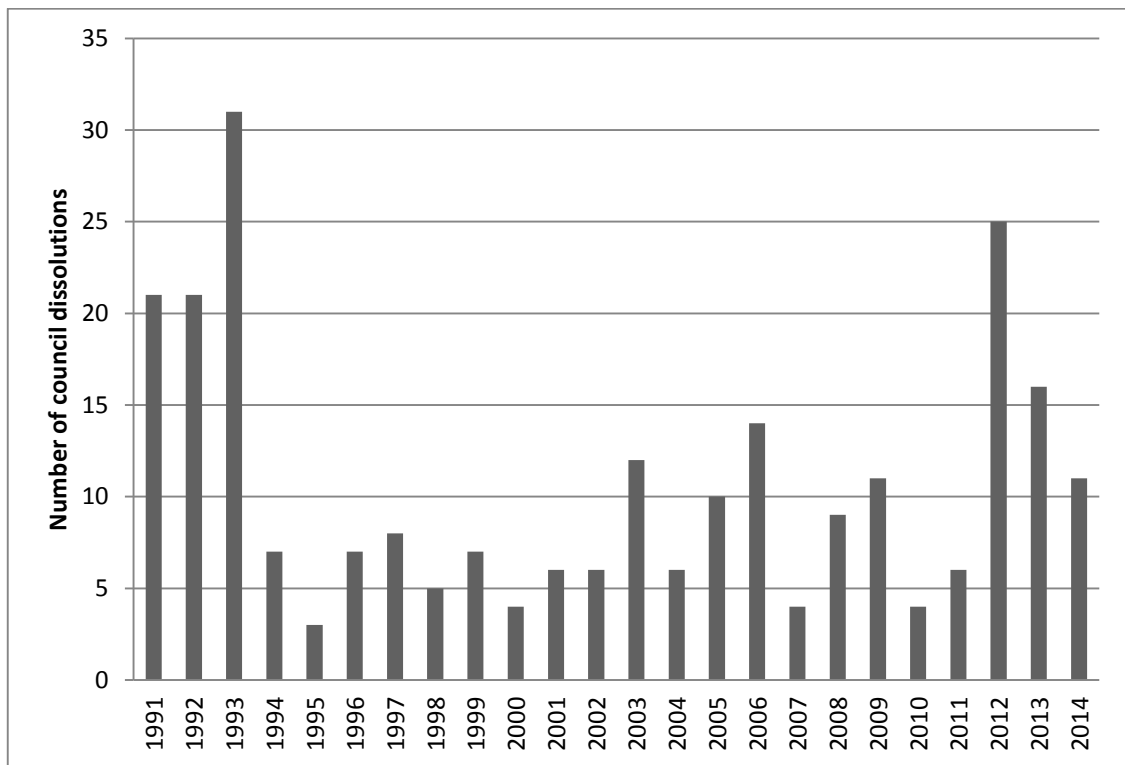


Table 5: Effect of public exposure of ties to organized crime on revenue collection (1993-2012)

	(1)	(2)	(3)	(4)
<i>Under Law164</i>	-1.033 (-0.84)	-1.637 (-1.36)	-1.822 (-1.57)	-1.923 * (-1.65)
<i>First election after dissolution</i>	-3.278 *** (-2.64)	-3.557 *** (-3.08)	-3.451 *** (-2.82)	-3.153 *** (-2.64)
<i>Later elections after dissolution</i>		-0.416 (-0.33)		-0.070 (-0.05)
<i>R<sup>2</sup></i>	0.56	0.55	0.62	0.61
<i>N</i>	23,752	24,905	22,318	23,303
<i>Municipality FE</i>	YES	YES	YES	YES
<i>Year FE</i>	YES	YES	YES	YES
<i>Province-Year FE</i>	NO	NO	YES	YES

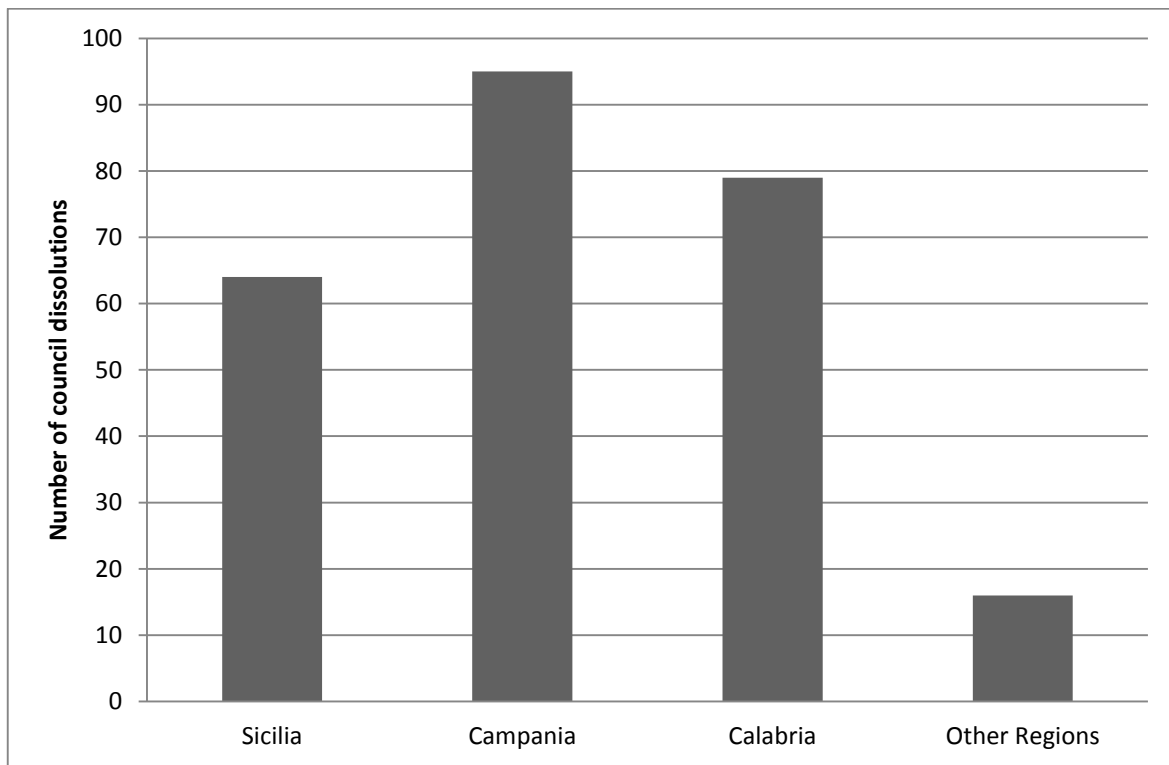
Note: The table shows the results from a difference-in-differences regression analysis using as dependent variable the ratio between actually collected revenues and the total amount of assessed revenues that a municipality should collect within the year. *Under Law 164* is an indicator variable equal to one during the enforcement of Law 164/1991 when the three appointed commissioned govern the municipality. *First election after dissolution* is an indicator variable equal to one for municipalities where Law 164/1991 is enforced in the first election after its enforcement. *Later elections after dissolution* is an indicator variable equal to one in municipalities where Law 164/1991 is enforced in all elections subsequent to the first election after its enforcement. The slight difference in the number of observations in columns (1) and (3) relative to columns (2) and (4) derives from the exclusion of later-election observations from the sample in the former. T-statistics based on standard errors clustered at the municipality level in brackets. \*  $p < 0.10$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ .

Figure 1: Municipality councils dissolved for mafia infiltration over time



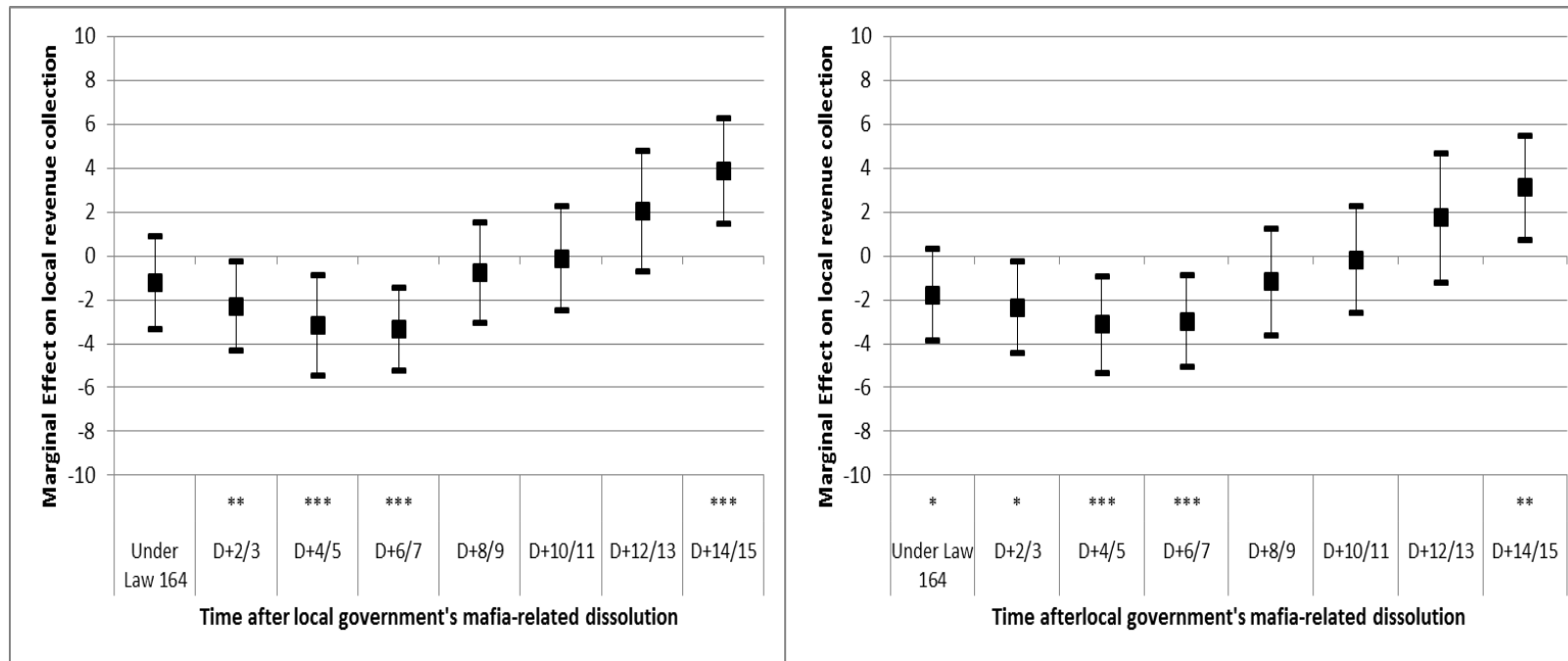
Note: The figure presents the number of municipality councils dissolved for organized crime infiltration in the period 1991-2014 on a yearly basis.

*Figure 2: Municipality councils dissolved for mafia infiltration across regions*



Note: The figure presents the number of municipality councils dissolved for organized crime infiltration in the period 1991-2014 across regions.

Figure 3: Municipality councils dissolved for mafia infiltration across regions



Note: The figure shows the results from a difference-in-differences regression analysis using as dependent variable the ratio between actually collected revenues and the total amount of assessed revenues that a municipality should collect within the year. *Under Law 164* reflects the period during the enforcement of Law 164/1991 when the three appointed commissioned govern the municipality, whereas  $D+x$  reflects the years  $x$  and  $x+1$  subsequent to its enforcement (with  $x = 2, \dots, 14$ ). All models include a full set of time-province and municipality fixed effects. The left-hand panel employs all available observations, whereas the right-hand panel restrict the sample to municipalities where Law 164/1991 is enforced at some point in time. T-statistics based on standard errors clustered at the municipality level indicated at the bottom of the figure. \*  $p < 0.10$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ .

## Appendix 1 – Summary Statistics

	Obs.	Mean	Std. Dev.	Min	Max
<b><i>Local Elections</i></b>					
Local Turnout	3861	0.732	0.108	0.117	0.957
First election after dissolution (dummy)	3861	0.013	0.114	0	1
Later elections after dissolution (dummy)	3861	0.009	0.093	0	1
<b><i>National Elections</i></b>					
National Turnout	11282	0.753	0.102	0.038	1
First election after dissolution (dummy)	11289	0.011	0.104	0	1
Later elections after dissolution (dummy)	11289	0.028	0.165	0	1
<b><i>Party Choice Outcomes</i></b>					
Incumbent Party Won (dummy)	7018	0.368	0.482	0	1
Year Before Council Dissolution (dummy)	5670	0.018	0.133	0	1
First election after dissolution (dummy)	7018	0.015	0.121	0	1
Later elections after dissolution (dummy)	7018	0.020	0.140	0	1
Local Party (dummy)	7018	0.346	0.475	0	1
Left Party (dummy)	7018	0.257	0.437	0	1
Right Party (dummy)	7018	0.088	0.284	0	1
Centrist Party (dummy)	7018	0.204	0.403	0	1
<b><i>Revenue Collection</i></b>					
Revenue Collection	24905	51.920	18.156	0.303	117.045
Under Law164 (dummy)	26519	0.009	0.096	0	1
First election after dissolution (dummy)	26519	0.025	0.156	0	1
Later elections after dissolution (dummy)	26519	0.046	0.211	0	1

## 2011

- 2011/1, **Oppedisano, V; Turati, G.:** "What are the causes of educational inequalities and of their evolution over time in Europe? Evidence from PISA"
- 2011/2, **Dahlberg, M; Edmark, K; Lundqvist, H.:** "Ethnic diversity and preferences for redistribution"
- 2011/3, **Canova, L.; Vaglio, A.:** "Why do educated mothers matter? A model of parental help"
- 2011/4, **Delgado, F.J.; Lago-Peñas, S.; Mayor, M.:** "On the determinants of local tax rates: new evidence from Spain"
- 2011/5, **Piolatto, A.; Schuett, F.:** "A model of music piracy with popularity-dependent copying costs"
- 2011/6, **Duch, N.; García-Estévez, J.; Parellada, M.:** "Universities and regional economic growth in Spanish regions"
- 2011/7, **Duch, N.; García-Estévez, J.:** "Do universities affect firms' location decisions? Evidence from Spain"
- 2011/8, **Dahlberg, M.; Mörk, E.:** "Is there an election cycle in public employment? Separating time effects from election year effects"
- 2011/9, **Costas-Pérez, E.; Solé-Ollé, A.; Sorribas-Navarro, P.:** "Corruption scandals, press reporting, and accountability. Evidence from Spanish mayors"
- 2011/10, **Choi, A.; Calero, J.; Escardíbul, J.O.:** "Hell to touch the sky? Private tutoring and academic achievement in Korea"
- 2011/11, **Mira Godinho, M.; Cartaxo, R.:** "University patenting, licensing and technology transfer: how organizational context and available resources determine performance"
- 2011/12, **Duch-Brown, N.; García-Quevedo, J.; Montolio, D.:** "The link between public support and private R&D effort: What is the optimal subsidy?"
- 2011/13, **Breuilé, M.L.; Duran-Vigneron, P.; Samson, A.L.:** "To assemble to resemble? A study of tax disparities among French municipalities"
- 2011/14, **McCann, P.; Ortega-Argilés, R.:** "Smart specialisation, regional growth and applications to EU cohesion policy"
- 2011/15, **Montolio, D.; Trillas, F.:** "Regulatory federalism and industrial policy in broadband telecommunications"
- 2011/16, **Pelegrín, A.; Bolancé, C.:** "Offshoring and company characteristics: some evidence from the analysis of Spanish firm data"
- 2011/17, **Lin, C.:** "Give me your wired and your highly skilled: measuring the impact of immigration policy on employers and shareholders"
- 2011/18, **Bianchini, L.; Revelli, F.:** "Green politics: urban environmental performance and government popularity"
- 2011/19, **López Real, J.:** "Family reunification or point-based immigration system? The case of the U.S. and Mexico"
- 2011/20, **Bogliacino, F.; Piva, M.; Vivarelli, M.:** "The impact of R&D on employment in Europe: a firm-level analysis"
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- 2011/22, **García-Quevedo, J.; Mas-Verdú, F.; Montolio, D.:** "What type of innovative firms acquire knowledge intensive services and from which suppliers?"
- 2011/23, **Banal-Estañol, A.; Macho-Stadler, I.; Pérez-Castrillo, D.:** "Research output from university-industry collaborative projects"
- 2011/24, **Lighthart, J.E.; Van Oudheusden, P.:** "In government we trust: the role of fiscal decentralization"
- 2011/25, **Mongrain, S.; Wilson, J.D.:** "Tax competition with heterogeneous capital mobility"
- 2011/26, **Caruso, R.; Costa, J.; Ricciuti, R.:** "The probability of military rule in Africa, 1970-2007"
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- 2011/31, **García-Quevedo, J.; Pellegrino, G.; Vivarelli, M.:** "The determinants of YICs' R&D activity"
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- 2011/33, **Pedraja, F.; Cordero, J.M.:** "Analysis of alternative proposals to reform the Spanish intergovernmental transfer system for municipalities"
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- 2011/36, **Brühlhart, M.; Schmidheiny, K.:** "Estimating the Rivalness of State-Level Inward FDI"
- 2011/37, **García-Pérez, J.I.; Hidalgo-Hidalgo, M.; Robles-Zurita, J.A.:** "Does grade retention affect achievement? Some evidence from Pisa"
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- 2011/43, **Cortés, D.:** "Decentralization of government and contracting with the private sector"
- 2011/44, **Turati, G.; Montolio, D.; Piacenza, M.:** "Fiscal decentralisation, private school funding, and students' achievements. A tale from two Roman catholic countries"

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2012

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- 2012/1, **Montolio, D.; Trujillo, E.:** "What drives investment in telecommunications? The role of regulation, firms' internationalization and market knowledge"
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- 2012/7, **Vergolini, L.; Zanini, N.:** "How does aid matter? The effect of financial aid on university enrolment decisions"
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- 2012/9, **Jofre-Monseny, J.; Marín-López, R.; Viladecans-Marsal, E.:** "What underlies localization and urbanization economies? Evidence from the location of new firms"
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- 2012/23, **Ploeckl, F.:** "Space, settlements, towns: the influence of geography and market access on settlement distribution and urbanization"
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- 2012/27, **Andini, M.; De Blasio, G.; Duranton, G.; Strange, W.C.:** "Marshallian labor market pooling: evidence from Italy"
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- 2012/31, **Curto-Grau, M.; Solé-Ollé, A.; Sorribas-Navarro, P.:** "Partisan targeting of inter-governmental transfers & state interference in local elections: evidence from Spain"

- 2012/32, **Kappeler, A.; Solé-Ollé, A.; Stephan, A.; Väilä, T.:** "Does fiscal decentralization foster regional investment in productive infrastructure?"
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2013

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- 2013/1, **Sánchez-Vidal, M.; González-Val, R.; Viladecans-Marsal, E.:** "Sequential city growth in the US: does age matter?"
- 2013/2, **Hortas Rico, M.:** "Sprawl, blight and the role of urban containment policies. Evidence from US cities"
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- 2013/23, **Costa-Campi, M.T.; Duch-Brown, N.; García-Quevedo, J.:** "R&D drivers and obstacles to innovation in the energy industry"
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- 2013/26, **Lambertini, L.; Mantovani, A.:** "Feedback equilibria in a dynamic renewable resource oligopoly: pre-emption, voracity and exhaustion"



- 2013/27, Feld, L.P.; Kalb, A.; Moessinger, M.D.; Osterloh, S.: "Sovereign bond market reactions to fiscal rules and no-bailout clauses – the Swiss experience"
- 2013/28, Hilber, C.A.L.; Vermeulen, W.: "The impact of supply constraints on house prices in England"
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- 2013/30, Wang, R.; Wang, W.: "Dress-up contest: a dark side of fiscal decentralization"
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- 2013/32, Saarimaa, T.; Tukiainen, J.: "Local representation and strategic voting: evidence from electoral boundary reforms"
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- 2013/34, Flacher, D.; Harari-Kermadec, H.; Moulin, L.: "Financing higher education: a contributory scheme"
- 2013/35, Carozzi, F.; Repetto, L.: "Sending the pork home: birth town bias in transfers to Italian municipalities"
- 2013/36, Coad, A.; Frankish, J.S.; Roberts, R.G.; Storey, D.J.: "New venture survival and growth: Does the fog lift?"
- 2013/37, Giuliotti, M.; Grossi, L.; Waterson, M.: "Revenues from storage in a competitive electricity market: Empirical evidence from Great Britain"

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- 2014/1, Montolio, D.; Planells-Struse, S.: "When police patrols matter. The effect of police proximity on citizens' crime risk perception"
- 2014/2, García-López, M.A.; Solé-Ollé, A.; Viladecans-Marsal, E.: "Do land use policies follow road construction?"
- 2014/3, Piolatto, A.; Rablen, M.D.: "Prospect theory and tax evasion: a reconsideration of the Yitzhaki puzzle"
- 2014/4, Cuberes, D.; González-Val, R.: "The effect of the Spanish Reconquest on Iberian Cities"
- 2014/5, Durán-Cabré, J.M.; Esteller-Moré, E.: "Tax professionals' view of the Spanish tax system: efficiency, equity and tax planning"
- 2014/6, Cubel, M.; Sanchez-Pages, S.: "Difference-form group contests"
- 2014/7, Del Rey, E.; Racionero, M.: "Choosing the type of income-contingent loan: risk-sharing versus risk-pooling"
- 2014/8, Torregrosa Hetland, S.: "A fiscal revolution? Progressivity in the Spanish tax system, 1960-1990"
- 2014/9, Piolatto, A.: "Itemised deductions: a device to reduce tax evasion"
- 2014/10, Costa, M.T.; García-Quevedo, J.; Segarra, A.: "Energy efficiency determinants: an empirical analysis of Spanish innovative firms"
- 2014/11, García-Quevedo, J.; Pellegrino, G.; Savona, M.: "Reviving demand-pull perspectives: the effect of demand uncertainty and stagnancy on R&D strategy"
- 2014/12, Calero, J.; Escardíbul, J.O.: "Barriers to non-formal professional training in Spain in periods of economic growth and crisis. An analysis with special attention to the effect of the previous human capital of workers"
- 2014/13, Cubel, M.; Sanchez-Pages, S.: "Gender differences and stereotypes in the beauty"
- 2014/14, Piolatto, A.; Schuett, F.: "Media competition and electoral politics"
- 2014/15, Montolio, D.; Trillas, F.; Trujillo-Baute, E.: "Regulatory environment and firm performance in EU telecommunications services"
- 2014/16, Lopez-Rodriguez, J.; Martinez, D.: "Beyond the R&D effects on innovation: the contribution of non-R&D activities to TFP growth in the EU"
- 2014/17, González-Val, R.: "Cross-sectional growth in US cities from 1990 to 2000"
- 2014/18, Vona, F.; Nicolli, F.: "Energy market liberalization and renewable energy policies in OECD countries"
- 2014/19, Curto-Grau, M.: "Voters' responsiveness to public employment policies"
- 2014/20, Duro, J.A.; Teixidó-Figueras, J.; Padilla, E.: "The causal factors of international inequality in CO<sub>2</sub> emissions per capita: a regression-based inequality decomposition analysis"
- 2014/21, Fleten, S.E.; Huisman, R.; Kilic, M.; Pennings, E.; Westgaard, S.: "Electricity futures prices: time varying sensitivity to fundamentals"
- 2014/22, Afcha, S.; García-Quevedo, J.: "The impact of R&D subsidies on R&D employment composition"
- 2014/23, Mir-Artigues, P.; del Río, P.: "Combining tariffs, investment subsidies and soft loans in a renewable electricity deployment policy"
- 2014/24, Romero-Jordán, D.; del Río, P.; Peñasco, C.: "Household electricity demand in Spanish regions. Public policy implications"
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- 2014/26, Solé-Ollé, A.; Sorribas-Navarro, P.: "Does corruption erode trust in government? Evidence from a recent surge of local scandals in Spain"
- 2014/27, Costas-Pérez, E.: "Political corruption and voter turnout: mobilization or disaffection?"

- 2014/28, **Cubel, M.; Nuevo-Chiquero, A.; Sanchez-Pages, S.; Vidal-Fernandez, M.:** "Do personality traits affect productivity? Evidence from the LAB"
- 2014/29, **Teresa Costa, M.T.; Trujillo-Baute, E.:** "Retail price effects of feed-in tariff regulation"
- 2014/30, **Kilic, M.; Trujillo-Baute, E.:** "The stabilizing effect of hydro reservoir levels on intraday power prices under wind forecast errors"
- 2014/31, **Costa-Campi, M.T.; Duch-Brown, N.:** "The diffusion of patented oil and gas technology with environmental uses: a forward patent citation analysis"
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- 2014/34, **Huisman, R.; Trujillo-Baute, E.:** "Costs of power supply flexibility: the indirect impact of a Spanish policy change"
- 2014/35, **Jerrim, J.; Choi, A.; Simancas Rodríguez, R.:** "Two-sample two-stage least squares (TSTSLS) estimates of earnings mobility: how consistent are they?"
- 2014/36, **Mantovani, A.; Tarola, O.; Vergari, C.:** "Hedonic quality, social norms, and environmental campaigns"
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- 2014/38, **Ferraresi, M.; Rizzo, L.; Zanardi, A.:** "Policy outcomes of single and double-ballot elections"

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- 2015/1, **Foremny, D.; Freier, R.; Moessinger, M-D.; Yeter, M.:** "Overlapping political budget cycles in the legislative and the executive"
- 2015/2, **Colombo, L.; Galmarini, U.:** "Optimality and distortionary lobbying: regulating tobacco consumption"
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- 2015/17, **Batalla-Bejerano, J.; Trujillo-Baute, E.:** "Impacts of intermittent renewable generation on electricity system costs"
- 2015/18, **Costa-Campi, M.T.; Paniagua, J.; Trujillo-Baute, E.:** "Are energy market integrations a green light for FDI?"
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- 2015/20, **García-López, M.A.; Hémet, C.; Viladecans-Marsal, E.:** "How does transportation shape intrametropolitan growth? An answer from the regional express rail"
- 2015/21, **Esteller-Moré, A.; Galmarini, U.; Rizzo, L.:** "Fiscal equalization under political pressures"
- 2015/22, **Escardíbul, J.O.; Afcha, S.:** "Determinants of doctorate holders' job satisfaction. An analysis by employment sector and type of satisfaction in Spain"
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- 2015/25, **Angelucci, C.; Russo, A.:** "Petty corruption and citizen feedback"

- 2015/26, Moriconi, S.; Picard, P.M.; Zanaj, S.:** "Commodity taxation and regulatory competition"
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- 2015/38, González-Val, R.; Marcén, M.:** "Regional unemployment, marriage, and divorce"
- 2015/39, Foremny, D.; Jofre-Monseny, J.; Solé-Ollé, A.:** "'Hold that ghost': using notches to identify manipulation of population-based grants"
- 2015/39, Mancebón, M.J.; Ximénez-de-Embún, D.P.; Mediavilla, M.; Gómez-Sancho, J.M.:** "Does educational management model matter? New evidence for Spain by a quasiexperimental approach"

