

# Regional and local development in Europe: Public policies, investment strategies, institutions

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## Paper 4: Organised crime, captured politicians, and the allocation of public resources

### Abstract

What is the impact of organised crime on the public finances of local governments? This paper studies the consequences of collusion between members of criminal organisations and politicians in Italy. The ‘capturing’ of local government’s decision-making from organised crime is identified by exploiting a national law that allows the dissolution of municipal governments upon evidence of mafia ‘infiltration’, i.e. the collusion between public officials and members of organised crime. Newly-collected data on local public finances allow to investigate the consequences of this collusion on the spending decisions and the fiscal efficiency of local governments over the 1998-2013 period. Differences-in-differences estimates reveal that infiltrations significantly affect the proportion of resources allocated to key components of local capital expenditure. Municipal governments controlled by the mafia invest more for construction, and less for law enforcement. In addition, infiltrated governments collect fewer taxes for waste and garbage. The analysis also uncovers key political elements and conditions associated with mafia-government collusions.

**Keywords:** organised crime, local public finances, collusion, government captures, Italy.

**JEL Classification:** K42; H72; D72.

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# 1. Introduction

Organised crime is detrimental to the functioning of any democratic or economic system (Gambetta, 1993). Its presence produces institutional failures with the potential to influence key aspects of the legal economic activity, undermining the long run development of every society (Shleifer and Vishny, 1993; Pinotti, 2015). The strength of mafia groups, as well as their influence on the legal economy, relies on the diffused external complicity, i.e. an increasing close relationship between organised crime groups and public officials such as national or local politicians and public administrators (Dickie, 2005). Thanks to the development of such networks, organised crime has become highly pervasive and fully integrated into the everyday socio-economic and political life of many countries in the world (Leonardi, 1995; Trigilia, 2001; Allum and Siebert, 2003).

Yet, understanding the extent to which these dynamics condition the choices and activities of policy-makers is far from easy. What impact does the collusion between members of criminal organisations and politicians have on local public finances? In this paper, we tackle this question by investigating a particular aspect of organised crime activity: its ‘infiltration’ within local governments. Such infiltration occurs when criminal groups manage to ‘capture’ local politicians who in turn manipulate policy decisions in their favour. We study the case of Italy, country home to the first form of organised crime, by using a unique yearly municipal-level dataset for the three Italian regions where organised crime is most widespread and rooted: Calabria, Campania and Sicily.<sup>1</sup>

In order to measure the presence of organised crime, we exploit the staggered enforcement of national law 164/1991, which allows for the dissolution of a municipal government upon evidence of collusion between elected officials and criminal organisations. The enforcement of this law within a given municipality at a specific point in time represents a sudden shock to both the local political establishment and the organised crime group, given that its occurrence and timing is solely determined at the national level and kept secret until its implementation.

More specifically, we exploit the enforcement of this policy to identify and compare municipal governments with and without infiltration before and after such infiltration occurs. Differences-in-differences estimates reveal that the influence of organised crime on local governments does

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<sup>1</sup> A focus on southern regions rather than on Italy as a whole has the advantage of restricting the sample to a relatively homogenous area in terms of unobservable elements such as culture or social capital, traditionally considered as highly diversified across this country (Putnam, 1993, Leonardi, 1995).

not affect the total level of public spending of municipalities, but does have consequences both for the allocation of public resources and the collection of fiscal revenues. In particular, infiltrated local governments modify capital expenditures in sectors that are strategic to the interests of organised crime. According to our estimates, infiltration leads to an increase in the share of total investments in construction and waste management, and to a decrease in the annual share of investment in police force. Moreover, infiltrated municipalities exhibit a lower ability to collect waste and garbage taxes. An extensive set of robustness tests confirm these findings.

Our estimates could pick up some non-mafia related effects (e.g. low quality of politicians, unstable governments) or be determined by political characteristics of the municipal elections correlated with infiltrations. To address this issue, we perform a series of further tests, ensuring that our results are driven by mafia collusion and not by any of these potentially unobserved components. We identify a set of political characteristics of municipal elections with which the infiltration is correlated. Although descriptive, this exercise is noteworthy in that it uncovers a relationship between infiltrations and elections where there is just one candidate running for office, the mayor is running for her second and last term, and the right-wing party wins the election. Using our differences-in-differences setting, we show that none of these factors have an impact on public spending or on revenues collection.

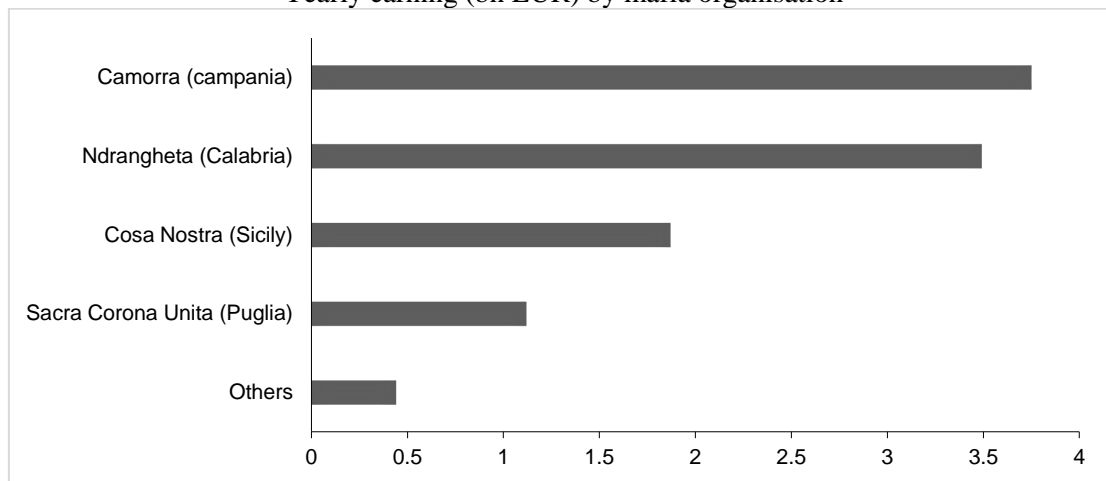
In the final part of the paper, we focus on the systematic correlation between collusion and elections won by right-wing parties, implementing a regression discontinuity design based on close elections. Our results show that the probability of infiltration increases when the right-wing party barely wins an election. However, closely elected right-wing governments are not systematically related to variations in public spending during infiltration periods. These results further corroborate our main hypothesis that the observed variations in public finances are due to collusion between organised crime and politicians as opposed to any other unobserved factors.

The rest of the paper is organised as follows: section 2 provides the background, reviews the relevant literature, and describes the contribution of our work; section 3 focuses on the institutional setting used as a basis for the difference-in-differences analysis and discusses our identification strategy; section 4 discusses the data; section 5 presents the main results; section 6 reports a set of robustness tests; section 7 extends the analysis by studying the relationship between infiltration and political factors and in particular the relationship between right-wing parties and infiltration; section 8 concludes.

## 2. Background and review of the literature

According to recent estimates, the total combined annual revenue of the Italian mafias is €10.7 billion, with the *Camorra* and the *'Ndrangheta* being the most profitable organisations (Figure 1). The main sources of revenue are illegal activities such as drug trafficking, extortions and corruption. These activities generate a turnover approximately equal to 1.6% of the Italian GDP.

**Figure 1**  
Yearly earning (bn EUR) by mafia organisation

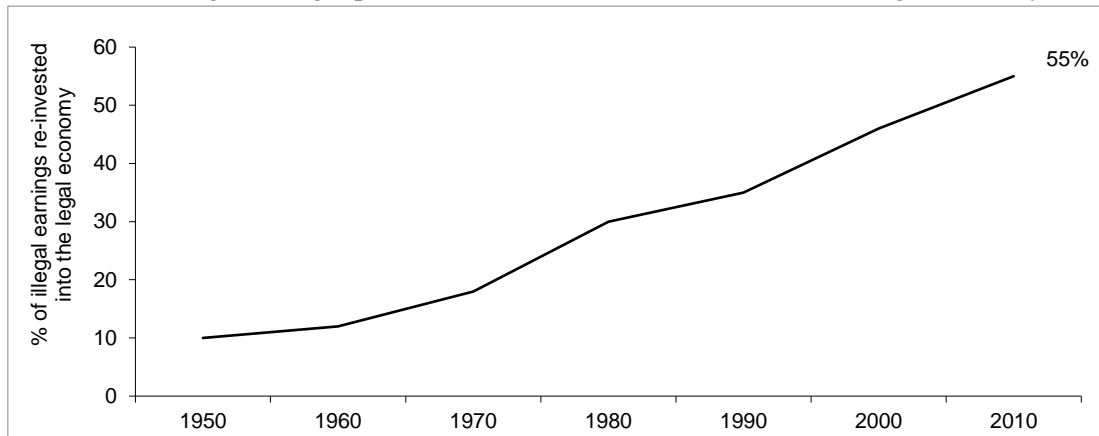


Source: authors' own elaboration using Transcrime (2013) data.

Since the 1970s, organised crime groups have become increasingly sophisticated and their business model has shifted from one based on extortion to one based on entrepreneurship (Gambetta, 1993; Lupo, 2004). The nature of the relationship between the mafia and the State has also changed. Rather than representing an enemy to fight, the government has instead become an opportunity to exploit. As Figure 2 shows, the result of this shift has been that a significant portion of the massive liquidity generated by illegal activities has been re-invested into the legal economy.

**Figure 2**

Percentage of illegal profits of Italian mafias re-invested into the legal economy



Source: Transcrime and Geo L.O.C. of the Financial Guard

A very high share of criminal organisations' profits thus come from public investments. Indeed, public finances are seen in the literature as potentially being severely affected by corruption and political collusion, both of which are practices commonly employed by the mafia. There is a substantial body of evidence emphasizing how these government failures impact the cost-effectiveness of public investments (Shleifer and Vishny, 1993; Mauro, 1997; Tanzi and Davoodi, 1997; Cadot et al., 2006; Crescenzi et al., 2016) as well as the specific spending sectors in which governments decide to invest (Mauro, 1998; Ehrlich and Lui, 1999; Gupta et al., 2001; Rajkumar and Swaroop, 2008). However, no empirical evidence exists on whether and how government expenditures are conditioned by government captures being perpetrated specifically by criminal organisations.

This topic has been overlooked also by the applied economics literature studying the effects of organised crime. Evidence has been produced to show that the mafia affects economic performance (Pinotti, 2015), firms' productivity (Ganau and Rodriguez-Pose, 2017), foreign direct investments (Daniele and Marani, 2011) and the quality of governance (Allum and Siebert, 2003; Pinotti and Stanig, 2017). A strand of this literature has examined the impact of mafia-government linkages on political and electoral outcomes, finding that criminal organisations sell votes to the party expected to win the elections (De Feo and De Luca, 2013), and that violence is strategically used to influence elections and get captured politicians elected (Alesina et al., 2016). Buonanno et al. (2016) find a systematic correlation between the strength of *Cosa Nostra* and the proportion of votes for the main Italian conservative party.

However, despite the growing scholarly interest in studying the consequences of mafia activities, the degree to which organised crime influences the allocation of public resources is unclear,

because empirical research investigating the rent-seeking behaviour of the mafia is almost non-existent. Notable exceptions are the works of Barone and Narciso (2015), arguing that the presence of organised crime affects the distribution of national public funds to firms<sup>2</sup>, and of Olivieri and Sberna (2014), asserting that pre-electoral mafia violence inflates local public expenditures. However, none of these works focus on the impact of criminal infiltrations within local governments. Our paper contributes to the literature by performing the first empirical analysis on the effects of collusions between organised crime and local politicians.

Our study adopts a novel method to measure mafia activities. The large majority of the above-mentioned works have identified the presence and intensity of the mafia by employing proxies such as the number of mafia-related crimes, murders, and violent attacks (Alesina et al., 2016; Daniele and Marani, 2011; Olivieri and Sberna, 2014; Barone and Narciso, 2015), historical or geological indicators (Bandiera, 2003; Buonanno et al., 2015; Buonanno et al., 2016; Dimico et al., 2017; De Feo and De Luca, 2017), or artificial constructs for counterfactual analysis (Pinotti, 2015). These measures aim to calculate the impact of organised crime in a broad sense, encompassing the whole range of possible actions perpetrated by such criminal groups. They do not, however, take into consideration the fact that organised crime in Italy has evolved over time, progressively reducing the use of violence and becoming increasingly integrated within the boundaries of democratic society (Cantone, 2010). While in conflict with the State, criminal organisations do not wish to displace the latter but rather to ‘infiltrate’ it, co-existing with it through the creation of a network based on mutual interests. Criminal organisations use violence only as a last resort when previous strategies have failed. Hence, the use of violence may reveal the extent, but not the real strength, of organised crime.

The consequences of criminal activities that do not employ violence have yet to be empirically identified. By focusing on collusion between organised crime and politicians, we aim to shed light on this more silent but equally dangerous phenomenon, studying the strategy of mafia groups in capturing government resources. The national law we use to identify ‘infiltrations’ (law 164/1991) has previously been employed in the empirical literature (Acconcia et al., 2014; Daniele and Geys, 2015, 2016; Galletta, 2016)<sup>3</sup>. Our approach differs, however, from previous studies in that we aim

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<sup>2</sup> Barone and Narciso (2015) analyse the role of organised crime in the allocation of national public subsidies to businesses in Sicily. Their results show that organised crime positively affects both the probability of obtaining funding and the amount of public funds received.

<sup>3</sup> Acconcia et al. (2014) exploit temporary contraction in public investment occurring in post-dissolution periods to obtain estimates of the fiscal multiplier for Italian provinces. Daniele and Geys (2015; 2016) provide an assessment of the impact of the 1991 law on different post-dissolution outcomes, such as elected politicians' levels of education and turnout at local elections. Galletta (2016) empirically investigates the presence of spillover effects resulting from the strengthening of law 164/1991.

to estimate the impact of organised crime infiltrations within local governments rather than evaluate the effect of the law. More specifically, our focus is on the period *before* the enforcement of the law, i.e. *before* the dissolution of mafia-infiltrated municipalities took place.

### 3. Empirical strategy

#### Law 164/1991: dissolution of municipal governments for mafia infiltration

The rise in mafia infiltrations within the local administrations throughout the 1980s led the Italian central government to introduce a set of tougher anti-mafia measures in the early 1990s. In order to contrast the cases of collusion between local politicians and members of organised crime, a new law has been introduced in 1991, imposing the dissolution of a city council on evidence of ‘mafia infiltration’ into the local government<sup>4</sup> (D.L. 31/05/1991 n.164). According to law 164/1991, the national government can decree the dissolution of a municipal government “*when evidence emerges regarding direct or indirect links between members of the local government and criminal organisations [...] jeopardising the free determination of electoral bodies and the good functioning of municipal administrations*”<sup>5</sup>.

The dissolution of a local government requires a number of steps. First, a proposal for dissolution must be put forth by the provincial prefect, who has been informed by either the magistrates or the police of the risk of infiltration of a municipal government. The prefect then establishes a commission composed by the vice-prefect and officials of different law enforcement bodies (*Polizia dello Stato, Carabinieri* and *Guardia di Finanza*). The commission investigates over the activity of the government for a period between three and six months and produces a report, which is sent by the prefect to the Ministry of Interior. Any proposal for dissolution signed by the Minister must be approved by the cabinet of the National Government (Council of Ministers) and the President of the Republic before being implemented. Municipalities having their government

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<sup>4</sup> Some of the most common reasons for dissolving local governments using law 194/1991 have been: administrators or bureaucrats having affinity/kinships with mafia members or recurrent criminal records; construction permits awarded illegitimately due to bid rigging; severe cases of infringement of building regulations; absence of rigorous controls over the execution of public works; significant flaws in tax collection; cases of clientelism; illegal elections.

<sup>5</sup> <http://www.gazzettaufficiale.biz/atti/2001/20010223/01A10530.htm>

dissolved are those where mafia infiltration has been attested by the Italian judicial system and confirmed by multiple political institutions. Importantly, infiltrated municipalities are unaware that they are under investigation, as the process of dissolution is kept fully secret until its implementation. Once the investigation is concluded, both the members of the criminal organisation and the local politicians are arrested.

Upon the removal of the infiltrated local administration, the central government appoints three non-elected, external commissioners, ruling the municipality for a period of 12 to 24 months and typically committed to make significant cuts to financial flows into public investment projects (Acconcia et al., 2014). After the end of the transition period, regular elections are held.

According to law 164/1991, infiltration occurs when organised crime captures local politicians in order to manipulate policy decisions in their favour. This criminal strategy can be perpetrated in different ways. It can, for example, occur directly, as in the case of Pompei (in the province of Naples) where “*the speaker of the municipal council has been identified as the main link between the local administration and the local mafia boss, who has also been arrested in the same investigation*”<sup>6</sup>. Alternatively, it can occur through the contamination of the electoral competition. This was the case in Plati’ (in the province of Reggio Calabria), where “*the party winning the electoral competition benefitted from electoral favours from the local mafia group, who was able to divert a large number of votes and aimed to maintain political control of the territory*”<sup>7</sup>. Finally, infiltration can occur simply through the use of threats and intimidations. To this regard, Africo (in the province of Reggio Calabria) was dissolved because “*the policy decisions of the municipal council were not made freely and without bias because local politicians were repeatedly intimidated and threatened by criminal organisations*”<sup>8</sup>.

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<sup>6</sup> Official Gazette (*Gazzetta Ufficiale*) – Decree of the President of the Republic no. 133 of June 2001: <http://www.gazzettaufficiale.biz/atti/2001/20010223/01A10530.htm>

<sup>7</sup> Official Gazette (*Gazzetta Ufficiale*) – Decree of the President of the Republic no. 119 of Marzo 2012: <http://www.gazzettaufficiale.biz/atti/2012/20120093/12A04237.htm>

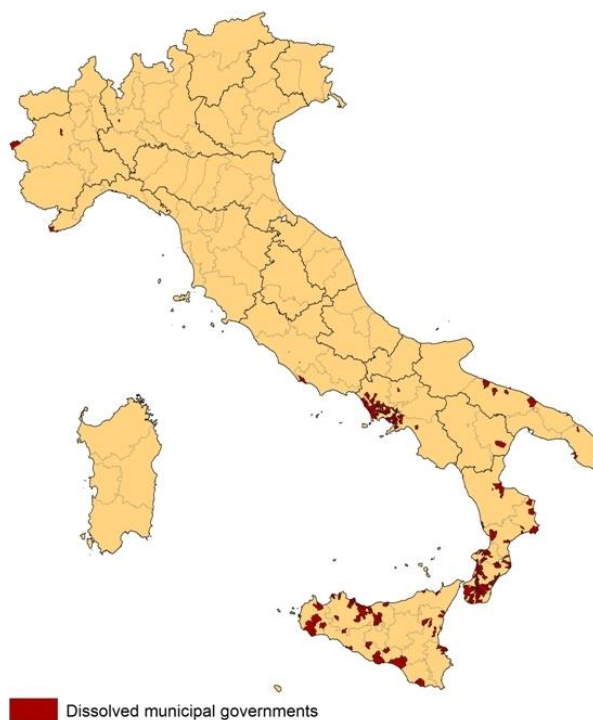
<sup>8</sup> Official Gazette (*Gazzetta Ufficiale*) – Decree of the President of the Republic: <http://www.gazzettaufficiale.biz/atti/2014/20140194/14A06583.htm>



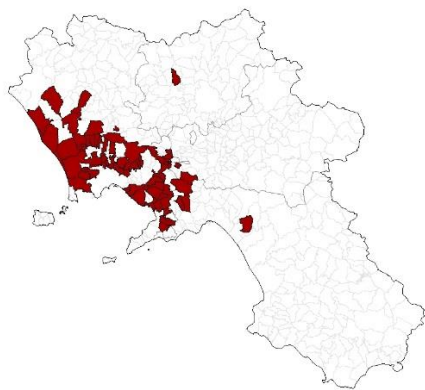
**Figure 3**  
Geographical location of government dissolutions for mafia infiltration

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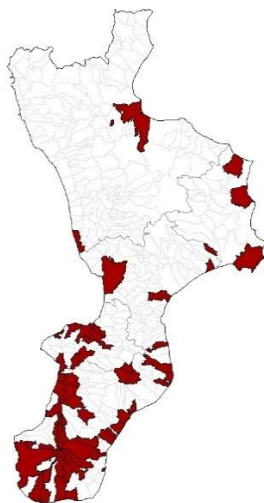
**Italy**



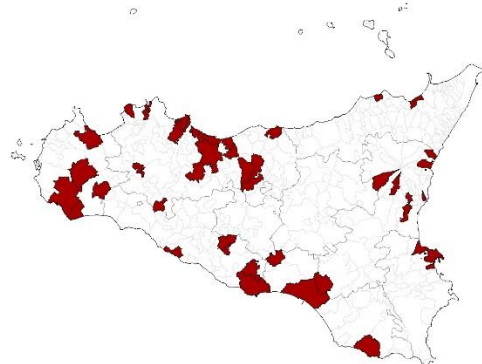
**Campania**



**Calabria**



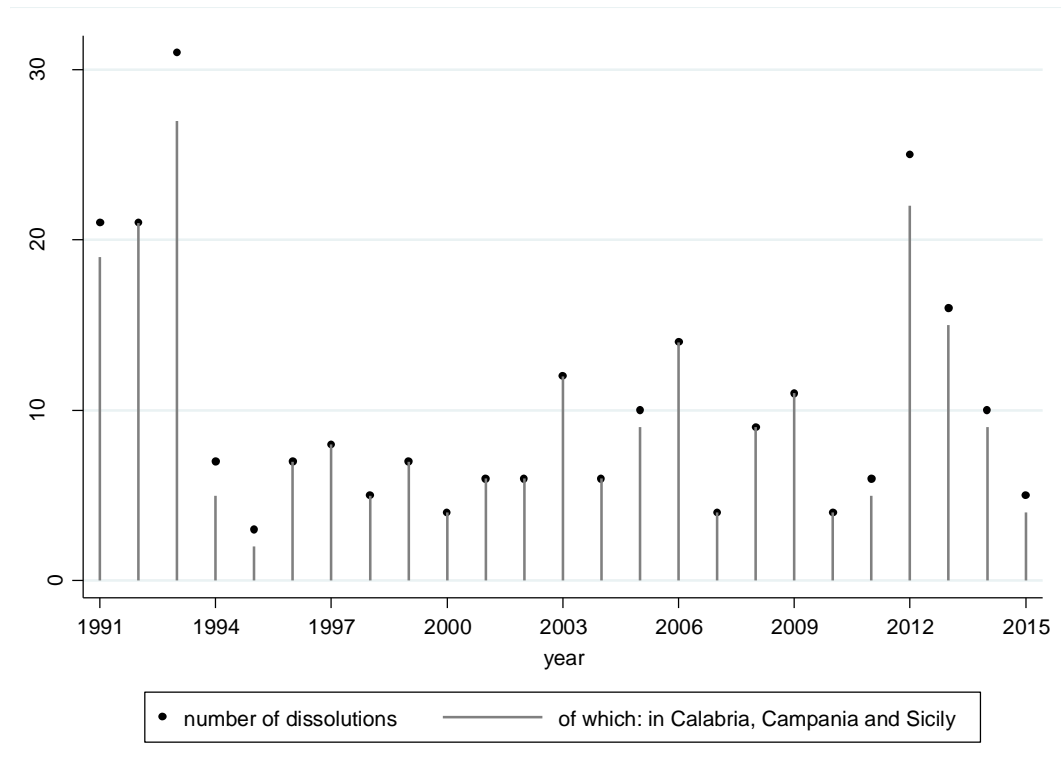
**Sicily**



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Source: Italian Ministry of Interior – maps are authors' own elaboration.

**Figure 4**  
Number of dissolved municipal governments for mafia infiltration



Source: Italian Ministry of Interior.

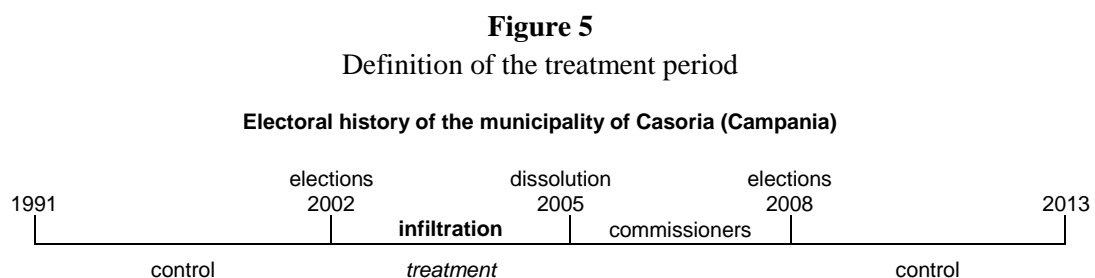
As shown in Figure 3, the large majority (and in some years all) of dissolutions have occurred in the three regions subject of our study. Figure 4 illustrates the number of dissolved municipal governments for mafia infiltration from the introduction of the law until 2015. In total, there have been 258 cases of detected mafia infiltration into local governments over this period.

That said, within these three regions, the geographical distribution of dissolution varies significantly. As shown in figure 3, detected cases of mafia infiltration tend to be clustered in several specific areas within these regions. In Campania, the large majority of dissolutions occurred in the north-west, particularly in the provinces of Caserta and Naples – the area where the *Camorra* is traditionally strongest. Similarly, in the region of Calabria most detected infiltrations were located in the south, in the provinces of Reggio Calabria and Vibo Valentia, where the *'Ndrangheta* is known to be centred. Finally, while dissolutions in Sicily are more widespread, the majority are concentrated in the province of Palermo, the heart of *Cosa Nostra*.

## Identification Strategy

We rely on law 164/1991 to identify cases of mafia infiltration within local governments of the municipalities in our sample regions. Our identification strategy is based on a difference-in-differences (DiD) setting and exploits the time and geographical variation of dissolutions over time. The impact of criminal infiltrations is estimated by comparing municipal governments with and without infiltration before and after such infiltration is ended by the national government. We use the dissolution of a municipal government to identify our treatment period. For example, as shown in figure 5, the municipality of Casoria, in the province of Naples (Campania), held local elections in 2002. The elected government was later dissolved at the end of 2005 and commissioners took over until the following elections, at the beginning of 2008. Our treatment period thus ranges from the election in 2002 to the dissolution in 2005. This decision reflects our aim to identify the period of time during which organised crime was plausibly colluding with the local government.

The control group is made of all non-dissolved governments and it comprises both municipalities that have never experienced dissolutions and municipalities that have experienced one or more dissolutions. In the example, all years before 2002 and after 2007 will make part of the control period. Due to the fact that external commissioners have specific duties regarding the administration of public finance, all years between the dissolution of a government and the subsequent elections are excluded from the sample. Therefore, in the case of Casoria the years 2006 and 2007 are not considered in the estimations.



Unlike classic DiD strategies, our setting is based on a treatment period beginning at different points in time for the treated municipalities. This framework has the advantage that it allows restricting the full sample to those municipalities belonging to the treatment group at any point in time, i.e. those that have experienced at least one dissolution for mafia infiltration. In such a way,

it is possible to obtain a sample of arguably very similar municipalities, minimising unobservable heterogeneity. Performing this sample restriction is indeed important, because as seen in figure 3 the geography of dissolutions displays significant concentrations in some provinces of the sample regions. An additional peculiarity of our setting is that the treatment period switches on and the off, i.e. municipalities remain infiltrated until the dissolution takes place.

## Threats to identification

There are some potential concerns associated to our identification strategy. First, it might be that the application of law 164/1991 has been imperfect. Some municipalities may have been infiltrated but not dissolved because judicial authorities have not detected the collusion. Similarly, some dissolutions may have been done erroneously as there was no real infiltration. Infiltrated municipal governments that are not dissolved would indeed belong entirely to the control group, determining an attenuation bias to the empirical results. Similarly, periods of erroneously detected infiltration would instead belong to *treated* years, again biasing the estimated impact of infiltrations towards zero. This means that the point estimate of regression coefficients is likely to be larger (in absolute value) than the one observed.

Another potential issue for our estimates could arise if the dissolution of municipal governments has been manipulated politically. In other words, it may be that the decision over which local governments to dissolve – or not to dissolve – is driven by political considerations. If, for example, the main party of the national government does not want to ‘lose’ the control of a local government ruled by the same party or an allied party of the same political coalition. This distorted use of law 164/1991 is, however, unlikely to happen for several reasons. First, the dissolution process is initiated and carried forward by the Italian Anti-Mafia Investigation Directorate (*Direzione Investigativa Antimafia*), one of the most efficient investigative bodies of the Italian State.<sup>9</sup> This is an organisation composed of highly trained and specialised individuals from the three main police forces (*Polizia di Stato*, *Carabinieri* and *Guardia di Finanza*), whose

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<sup>9</sup> The Anti-Mafia Investigation Department (DIA) was founded in 1999. Its operations include preemptive investigations and judicial investigations. It investigates characteristics, objectives, and methods of the mafia as well as its domestic and international contacts.

experience is often valued and requested by other countries and institutions needing consults on the fight against organised crime<sup>10</sup>.

In addition, the multiplicity of actors involved in the dissolution decision, from national MPs to the Minister and the Cabinet to the President of the Republic, makes any form of manipulation of the law improbable.<sup>11</sup> In order, however, to provide as much evidence as possible, we perform a test to rule out the possibility of systematic political manipulations. If dissolutions were manipulated, we would expect to observe that the political colour of provincial and national governments is significantly associated to the political colour of dissolved municipal governments. As shown in Appendix A1, which refers to the restricted sample of dissolved municipalities in the 1998-2013 period, there is no statistically significant correlation between the colour of national or provincial governments and that of municipal governments. Indeed, given the political cost generated by a dissolution for the national government – e.g. high national media coverage and political competitors exploiting the latter by asking for the government's resignation – it is extremely unlikely that the national government would strategically choose to dissolve municipal governments governed by opposing parties.

Moreover, Italian local governments can also be dissolved for reasons unrelated to mafia infiltration (e.g. resignation of the mayor, resignation of more than 50% of council members etc.). Hence, for politicians wishing to undermine the stability of a given municipality ruled by an opposing party, such routes would certainly represent cheaper and easier options than trying to establish a false mafia case.

A final potential issue with our empirical setting is that the definition of our treatment and control observations is based on the assumption that the entire period between the election of a local government and its dissolution consists of infiltration years. We test the validity of this assumption in the empirical analysis.

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<sup>10</sup> Some examples are the Italian Prosecutor Antonio Ingroia, responsible for significant investigation into the Sicilian mafia, who has been appointed Director of the United Nation – Central American country's International Commission against Impunity (CICIG).

<sup>11</sup> The only case where the dissolution has not followed the normal legislative process is in the case of Fondi. The local prefect, together with the enforcement agencies, in 2009 proposed the dissolution of this municipality, but the Ministry of Interior opted for a political solution asking the municipality to proceed immediately with new elections without dissolving the government. The case of Fondi was covered by the Italian press and tv news for days, and no similar case has happened after that. Since the concern of the press and opposition parties was that the new elections were not sufficient to get rid of the criminal infiltration, this would constitute a downward bias in our setting.

## 4. Data and estimating equation

### Institutional setting of municipalities and data

**Local public spending and municipal revenues.** Our primary data source is the *Certificati Consuntivi* database of the Italian Ministry of Interior, which contains yearly statistics on the public finance of Italian municipalities for a number of different spending categories. The full dataset is disaggregated into capital and current expenditures. These are further disaggregated into six specific spending categories reflecting the services and functions to which the resources have been allocated and spent and include: general administrative functions, social sectors, construction and waste management, transportation, public education and municipal police (see Appendix A2 for more details).

This dataset is available for the 1998-2013 time period. Table 1 and Appendix A2 illustrate average per capita spending for the municipalities in our sample over this period. The resources spent by the municipalities amounts to a yearly average of €543 per inhabitant for capital expenditures (i.e. investments) and a yearly per capita average of €731 for current expenditures (i.e. salaries and services). Summing these two figures we obtain the average total spending per municipality, €1274 per inhabitant. As shown in Table 1, the spending sector to which the most annual resources are allocated is construction and waste management, which makes up 34% of the annual capital expenditures budget. Average spending for this component is €382 per year, €217 for the capital and €147 for the current expenditures.

The same *Certificati Consuntivi* database of the Italian Ministry of Interior provides information on the revenues collected by municipal governments. Given the quasi-federal structure of the Italian State, municipalities are expected to maintain a certain level of independence and autonomy in collecting their own financial resources. Hence, local taxes represent an important source of income for municipalities<sup>12</sup>.

We follow Drago et al. (2014), constructing a measure of efficiency in revenue collection calculated as the ratio between collected revenues and the total amount of forecasted revenues that the municipality should collect within the budget year. We focus on the two main local taxes, i.e. property tax and waste tax, and on total collected revenues (including all taxes and transfers).

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<sup>12</sup> Local fiscal revenues correspond on average to 52% of the entire budget for Italian municipalities (Daniele et al., 2016).

As figure A2.2 shows, property tax and waste tax are the main source of income in the municipal fiscal budget. However, Table 1 indicates that municipalities in our sample do not collect all the expected fiscal revenues. In particular, the capacity to collect waste taxes is generally very low.

**Infiltrations.** In order to measure the infiltration of organised crime within local governments, we identify all municipalities that experienced government dissolution due to mafia infiltration from 1991 to 2013, exploiting information on the date of the dissolution available from the Ministry of the Interior.

**Control variables.** We exploit data on mafia-related homicides in each province and year of our sample from the Italian National Institute of Statistics (ISTAT). These data were collected by the Ministry of Interior and classified according to the Italian Penal Code.

A number of municipal level time-varying characteristics are obtained from the 1991, 2001 and 2011 ISTAT Censuses interpolated over time: unemployment rate, percentage of industry employment, percentage of agricultural employment, and percentage of tertiary education degree holders.

**Table 1**  
Descriptive statistics

Variable	Full sample			Restricted sample		
	Obs	Mean	Std. Dev.	Obs	Mean	Std. Dev.
<i>Total per capita spending (log)</i>						
Total	21,156	6.974	0.555	2845	6.773	0.485
Capital expenditures	21,156	5.488	1.327	2845	5.118	1.214
Current expenditures	21,156	6.518	0.406	2845	6.429	0.396
<i>Capital expenditure component (share of total)</i>						
Administration	21,037	0.152	0.217	2813	0.164	0.211
Social sector	20,901	0.063	0.134	2789	0.056	0.124
Construction and waste management	21,137	0.342	0.292	2817	0.321	0.277
Transports	21,090	0.232	0.242	2818	0.228	0.233
Education	20,844	0.084	0.153	2799	0.106	0.166
Municipal police	20,477	0.003	0.019	2751	0.007	0.026
<i>Current expenditure component (share of total)</i>						
Administration	21,240	0.429	0.095	2842	0.400	0.093
Social sector	21,243	0.073	0.058	2842	0.086	0.061
Construction and waste management	21,239	0.228	0.085	2842	0.269	0.090
Transports	19,909	0.082	0.040	2664	0.068	0.036
Education	18,557	0.083	0.041	2480	0.075	0.038
Municipal police	21,239	0.059	0.027	2842	0.058	0.023
<i>Municipal revenues (collected/forecasted)</i>						
Total revenues	17,596	0.573	0.192	2381	0.563	0.157
Property tax	18,703	0.494	0.361	2524	0.477	0.425
Waste tax	18,692	0.136	0.249	2524	0.101	0.198
<i>Control variables</i>						
Percentage of agricultural employment	21,594	4.592	3.382	2912	4.303	4.066
Percentage of citizens holding tertiary education degrees	21,594	6.060	2.620	2912	5.687	2.272
Percentage of industry employment	21,594	6.489	2.128	2912	5.894	1.693
Unemployment rate	21,594	7.609	2.518	2912	8.890	2.646
Mafia-related homicides per inhabitant at province level	21,600	0.0058	0.0082	2912	0.0095	0.0092

Note: Full sample refers to all municipalities of Campania, Calabria and Sicily. Restricted sample refers to municipalities of these regions having experienced at least one government dissolution for mafia infiltration. The sum of the means of all capital or current expenditure components does not sum up to 1 due to the fact that there are some other minor spending components not considered in the analysis.



## Estimating Equation

The difference-in-differences setting is exploited to test whether mafia infiltrations have any impact on public finances in the local governments of Campania, Calabria and Sicily during the 1998-2013 period. To this end, we compare municipal governments with and without infiltration before and after such infiltration is terminated by the national government.

We estimate various versions of the following model:

$$y_{m,t} = \alpha + \beta Inf_{m,t} + \gamma Mafia_{p,t} + \delta X_{m,t} + \varphi_m + \tau_t + \varepsilon_{m,t} \quad (1)$$

Where  $y_{m,t}$  can be  $PS_{m,t+1}$  or  $T_{m,t}$ .

$PS_{m,t+1}$  refers to public spending in municipality  $m$  at time  $t+1$ <sup>13</sup>. This is either  $\ln \frac{\sum_c PS_{m,t+1}}{pop_{m,t}}$ , the natural logarithm of total per capita spending committed by a municipal government; or  $\frac{PS_{c,m,t+1}}{\sum_c PS_{m,t+1}}$ , the spending committed to component  $c$  as a share of total spending committed for the next financial year.

$T_{m,t} = \frac{collected T_{m,t}}{expected T_{m,t}}$  is the ratio between the collected tax and transfers and the amount of assessed revenues that the municipality should collect, a measure of government efficiency in collecting public resources.

The key variable in the model is  $Inf_{m,t}$ . This is a dummy taking value 1 from the year of the last regular election before the dissolution until the moment in which the municipal government was dissolved, and zero otherwise. Hence, the dummy takes value one in year  $t$  if in that year the municipality is ruled by a government later dissolved for mafia infiltration.

The coefficient of interest is  $\beta$  which captures the impact of the infiltration at time  $t$  on the public spending allocation at time  $t+1$ .

As our main aim is to identify the effect of a specific activity from organised crime – the *temporary* infiltration into local governments on governments' spending decisions – we need to make sure that the observed effect is driven by the mafia-politics collusion and not by

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<sup>13</sup> The time lead derives from the fact that our dependent variable is based on spending commitments, i.e. annual allocations to different spending categories defined at the end of a financial year for the following year by a municipal government. This allows reducing issues of reverse causation as our main variable of interest is measured at time  $t$ .

heterogeneity in the local organised crime power across municipalities. This issue is tackled in two ways. First, we test the results by restricting our sample to municipalities that have seen their government dissolved at least once, reducing unobservable differences in local conditions. Second, we include in the model a control variable,  $Mafia_{p,t}$ , referring to mafia-related homicides and used as a proxy for the underlying strength of the mafia in the province of the municipality in year  $t$ .

Vector  $X_{m,t}$  denotes a set of socio-economic and demographic characteristics of municipalities in the sample regions.

The model is completed by municipality dummy variables, controlling for time-invariant unobservables correlated with the timing of the infiltration ( $\varphi_m$ ), and time fixed effects, controlling for year-specific shocks ( $\tau_t$ ). Finally,  $\varepsilon_{m,t}$  is an idiosyncratic error term. Throughout the empirical analysis we cluster standard errors at the municipal level.

## 5. Estimation results

### Infiltration and overall level of spending

We begin by presenting the estimates of the effect of mafia infiltration on total municipal spending (Table 2). In columns (1) and (2) we focus our attention to total spending per capita. The model is initially estimated for the full sample of 1350 municipalities from Calabria, Campania and Sicily (column (1)). In column (2) we restrict the sample to a group of more homogeneous municipalities – those 182 having experienced at least one government dissolution for mafia infiltration. In the following columns, we sub-divide total spending into total capital expenditures per capita (columns (3)-(4)) and total current expenditures per capita (columns (5)-(6)).

The results displaying the coefficients of all control variables, shown in Table A5, indicate that when the sample is restricted to the 182 municipalities that have experienced dissolutions, the proxy for the underlying strength of the mafia is not significantly associated with total municipal spending<sup>14</sup>.

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<sup>14</sup> The pairwise correlation between infiltration dummy and  $Mafia_{p,t}$  variable, tested separately, is positive for the full sample and insignificant for the restricted sample of municipalities. This may imply that by restricting the sample to municipalities having experienced infiltration-related dissolutions, we have successfully managed to reduce heterogeneity in terms of mafia strength in the territory. Another interpretation may be that the decision of mafia groups

Throughout all different specifications, the coefficient of the infiltration dummies in Table 2 is not statistically significant. Hence, the results provide evidence that, other things equal, infiltration periods are not associated with significant variations in the total amount of local government expenditures, either for public investments (capital expenditures) or for services and maintenance (current expenditures).

**Table 2**  
Effect of infiltration on total public spending

	Dependent Variable:					
	Total per capita spending		Total p/c spending - capital expenditures		Total p/c spending - current expenditures	
	(1)	(2)	(3)	(4)	(5)	(6)
Inf	-0.0223 (0.0189)	-0.0066 (0.0191)	-0.0796 (0.0697)	-0.0729 (0.0711)	0.0137 (0.0121)	0.0139 (0.0119)
Controls	✓	✓	✓	✓	✓	✓
Year dummies	✓	✓	✓	✓	✓	✓
Municipality dummies	✓	✓	✓	✓	✓	✓
Full sample	✓		✓		✓	
Restricted sample		✓		✓		✓
Observations	20,888	2582	20,888	2582	20,888	2582
R-squared	0.510	0.522	0.353	0.347	0.713	0.556
Municipalities	1350	182	1350	182	1350	182

Note: Clustered standard errors in parenthesis; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Inf refers to infiltration dummy; Commissioning years excluded. Controls: mafia-related homicides, agricultural employment, industry employment, tertiary education degree holders, unemployment. Full sample: 1350 municipalities of Campania, Calabria and Sicily; restricted sample: municipalities having experienced at least one government dissolution for mafia infiltration.

Our findings differ from those of Olivieri and Sberna (2014), reporting a positive relationship between pre-electoral mafia violence and total public investment in local municipalities of Southern Italy. The difference can be due to the fact that we do not focus on mafia violent attacks, but on mafia infiltration within politics. Accordingly, a possible explanation for our results is that the mafia, when infiltrated into local governments, is not interested in forcing a modification of overall aggregate spending. Indeed, if municipal governments were running constant budget deficits during infiltration periods, they would risk being commissioned by the central government for reasons of financial instability, thus leaving the mafia without reliable political connections in the local councils.<sup>15</sup> Rather, a way to coercively condition the public finance of

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to infiltrate within local governments is not directly related to the intensity of their violent activity (which is however measured at the province level).

<sup>15</sup> Article 244 of the *Testo Unico Enti Locali* (TUEL) foresees the possibility to declare municipalities non-solvent (*dissesto finanziario*) when it is incapable to provide the basic functions, services and public goods.

infiltrated governments may be to modify investment policy in those sectors that are strategic for protecting the interests of organised crime. We test this hypothesis in the following section.

## Infiltration and specific spending components

We now break down total spending into different items of expenditure and test whether mafia infiltrations significantly affect the allocation of public resources in each components of governments' budgets.

The model is estimated both with capital and current expenditure components as dependent variables, each spending item being measured as a share of the total spending. Again, the model is estimated both for the full sample of municipalities and for the restricted sample of municipalities who have had their government dissolved at least once.

The estimation results are shown in Tables 3 and 4.

We begin with capital expenditures, i.e. investments (Table 3). We find that on average infiltrated municipalities spend more on construction and waste management (columns (5)-(6)) and less on municipal police (columns (11)-(12)). These results are consistent across both specifications, remaining significant and with similar magnitude. A first look at these results indicates that upon infiltration, organised crime's main strategy is to bias the allocation of resources towards specific sectors rather than affect total spending.

When we turn our attention to current spending (Table 4), the infiltration dummy is insignificantly correlated with most of the current spending components. The only significant effect is on municipal police.

Why are the construction and police sectors the only two being affected by infiltrations? We provide an interpretation of the size of estimates and the meaning of these results below.

**Table 3**  
Effect of infiltration on capital expenditures by component

	Dependent variable: share of spending in the following component											
	Administration		Social sector		Construction and waste management		Transports		Education		Municipal police	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Inf	-0.0115 (0.0143)	-0.0146 (0.0139)	-0.00494 (0.00746)	-0.00674 (0.00764)	0.0448** (0.0175)	0.0442** (0.0181)	-0.0206 (0.0133)	-0.0220 (0.0133)	0.00633 (0.0111)	0.00949 (0.0109)	-0.00262** (0.00126)	-0.00222* (0.00118)
Controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Year dummies	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Municipality dummies	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Full sample	✓		✓		✓		✓		✓		✓	
Restricted sample		✓		✓		✓		✓		✓		✓
Observations	20,682	2554	20,551	2535	20,783	2559	20,735	2559	20,490	2541	20,126	2496
R-squared	0.260	0.219	0.135	0.138	0.205	0.227	0.173	0.152	0.115	0.140	0.169	0.235
Municipalities	1350	182	1350	182	1350	182	1350	182	1350	182	1350	182

Note: Clustered standard errors in parenthesis; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

**Table 4**  
Effect of infiltration on current expenditures by component

	Dependent variable: share of spending in the following component											
	Administration		Social sector		Construction and waste management		Transports		Education		Municipal police	
	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)
Inf	-0.00538 (0.00497)	-0.00623 (0.00484)	-0.00163 (0.00512)	-0.000277 (0.00429)	0.00545 (0.00489)	0.00530 (0.00491)	-0.00105 (0.00193)	-0.000947 (0.00193)	0.000219 (0.00168)	0.000599 (0.00174)	-0.00256** (0.00130)	-0.00217* (0.00123)
Controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Year dummies	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Municipality dummies	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Full sample	✓		✓		✓		✓		✓		✓	
Restricted sample		✓		✓		✓		✓		✓		✓
Observations	20,881	2579	20,884	2579	20,880	2579	19,582	2427	18,235	2242	20,880	2579
R-squared	0.736	0.698	0.650	0.612	0.732	0.687	0.752	0.752	0.816	0.787	0.622	0.665
Municipalities	1350	182	1350	182	1350	182	1350	182	1350	182	1350	182

Note: Clustered standard errors in parenthesis; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

**Construction and waste management.** According to the estimates in Table 3, infiltrated governments increase investment spending for construction and waste management by an average of 4 percentage points per year. This is a large figure if we consider that functions related to constructions and waste management account for the largest part of the capital expenditures budget (Table 1). Moreover, this is an average annual effect that is distributed over the whole period a government is in charge. Municipal administrations can last up to five years, and the average infiltration period in our sample of municipalities is 2.7 years. Therefore, the additional resources these governments put up on this sector of investment during the period of infiltration are substantial.

This particular spending item includes all expenses for urban planning, waste collection and the construction of new buildings, bridges, streets and highways.<sup>16</sup> This represents a strategic sector for the interests of criminal organisations for many reasons.

First, mafia groups need to find an outlet for all the resources obtained from their illegal traffics and the sector of constructions represents an easy and highly profitable option for money laundering. The technological and financial barriers to entry are relatively low, making this an ideal area for long-term investment. Second, this sector is associated with a set of activities which are deeply embedded into the local territory. Seizing the control of these activities is crucial for the mafia, in order to establish and expand the wide network of relationships which allow its survival and prospering. The construction of new buildings involves many agents: the political power in charge of awarding public work tenders, contractor enterprises responsible for delivering the project, and a labour pool carrying out the work. Organised crime groups may be involved at all levels of this chain, by exploiting the political connections they have in order to distort fair competition and rig public work bids at the advantage of the enterprises they control, or intend to favour. Moreover, access to privileged information on future bids and winning contractors allows the mafia to offer employment, therefore directly managing an important portion of the local labour market (Sciarrone, 2011).

For the mafia, having political referents within local governments translates into the possibility of steering the outcomes of public work tenders and increasing the profits of affiliated firms. The more buildings to be constructed, the more contracts that will be awarded and the higher the potential gains for the criminal organisation (Lavezzi, 2008). Figure 6 shows the number of firms,

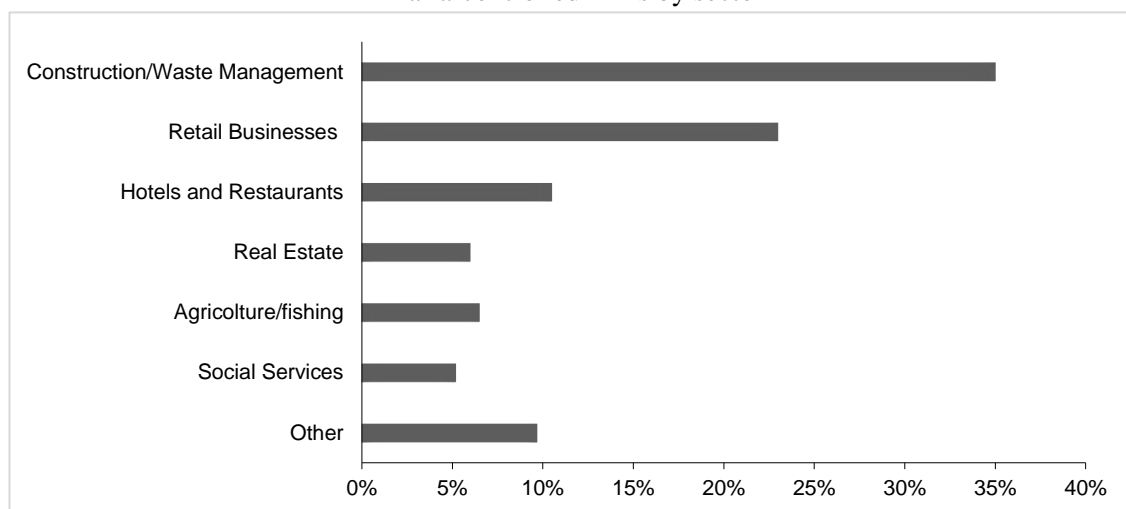
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<sup>16</sup> At the end of each fiscal year, local governments must approve plans for the financing of public works, set to be realised either within the same year or part of a three-year plan. Annual plans include all projects below 100,000 euros, while three-year plans are for projects above this figure. While yearly plans are binding, three-year plans can annually be updated with new projects. Urban planning interventions represent a key prerogative of local administrations, and regional or national level governments have little say over these kinds of policy initiatives.

disaggregated by business sector, confiscated by police due to collusion with organised crime. In line with the above estimates, the majority operate in the construction and waste management sector.

The creation of collusive cartels between politicians, *mafiosi*, and entrepreneurs in the construction market not only causes distortions in the competition for public works, but also seriously inflates expenditures in this sector.

**Figure 6**  
Mafia-controlled firms by sector



Source: Transcrime (2013).

**Municipal police.** The second significant variation in the local public spending is on municipal police. A significant decrease is seen both for capital and for current expenditures in this sector.

We find that during infiltration periods spending for police reduces by about 0.2 percentage points annually. While this might seem like a low figure, it should be compared to the average share of investment in local police forces made by governments in our sample. As shown in Table 1, the proportion of capital expenditures allocated to this sector is about 0.3% of the total for the full sample of municipalities, and 0.7% for the municipalities who had their government dissolved at least once. Therefore, an average annual reduction of about 0.2 percentage points represents a considerable change. In practice, given that police expenditures are typically low, they are thus nearly absent in infiltration years.

In turn, the significant reduction in spending on municipal police as part of current expenditures corresponds to a less radical change in budget decisions, given the share of current expenditures allocated to municipal police being 6% of the total (Table 1).



And yet, if we add up the current and the capital expenditures effects, a clear pattern emerges indicating that infiltrated governments tend to refrain from making expenditures on local police forces. A reduction of resources directed towards law enforcement bodies such as the municipal police may directly benefit the criminal organisations, facilitating their illegal activities. Indeed, the local police are responsible for maintaining public order and security, a task shared with the national police (*Polizia di Stato*) and low-quality equipment may imply a lesser ability to fight crimes such as drug trafficking, usury and murders. Perhaps most importantly, local police are also responsible for so-called ‘administrative police’ functions, including surveillance over construction works and abidance with building regulations. Given that a lack of compliance with building regulations is one of the most frequent motivations for government dissolutions, allocating fewer resources to municipal police forces may also be one of the ways in which corrupt local politicians attempt to prevent dissolutions.

**Inclusion of time trends.** In appendix A3, we replicate the analysis using capital expenditures for construction and for police, and current expenditures for police as dependent variables and perform a set of robustness tests. We gradually increase the number of controls and include linear time trends.

The coefficient of the infiltration dummy is consistently significant and positively correlated with investment in construction across different specifications. The coefficient of capital expenditures for police also remains negative and strongly significant, while the result of current spending for municipal police is not robust to the inclusion of time trends. For this reason, we do not further test its robustness in the remaining of the paper.

## Infiltration and revenues collection

We now turn to verifying whether infiltrations impact the ability of local governments to collect revenues. Three are the dependent variables considered: total revenues, property taxes and waste taxes.

The results are presented in Table 5. The coefficient for total revenues is negative in columns (1) and (2) but insignificant, evidence that collected revenues do not modify during infiltration periods. No effect is found on property taxes either.

Instead, the coefficients on waste tax (column (7) and (8)) are negative and significant. The effect is economically sizeable: according to our estimates, infiltrated municipalities collect 15% less taxes on waste and garbage compared to the average of non-treated municipalities. The result is

stable to the inclusion of our set of controls, to the restriction of the sample (column (8)), and to the inclusion of time trends (Appendix A3).

The interpretation of this result is twofold. First, the direct or indirect presence of criminal organisations within the municipal government has an impact on the performance of the local government. Indeed, tax evasion generates significant losses and distortions in government revenues; the ability to efficiently enforce tax collection is one of the fundamental components of state capacity (Casaburi and Troiano, 2016). As shown in figure A5.1, waste tax represents 32% of the municipal budget. Second, lower fiscal revenues in the waste sector may correspond to a precise strategy on the part of criminal organisations who aim to weaken the presence and reputation of the legal institutions in order to open up the possibility of substituting it through a system of provision of private favours (Trocchia, 2009). This result, together with the evidence on spending on construction and waste management uncovered in section 5.2, seems to confirm the well-known presence of criminal organisations within the waste management sector<sup>17</sup>.

**Table 5**  
Effect of infiltration on local revenues collection

	Total revenues		Dependent variable:			
	(1)	(2)	Property tax		Waste tax	
	(1)	(2)	(3)	(4)	(5)	(6)
Inf	-0.0127 (0.0111)	-0.0123 (0.0114)	0.00006 (0.0214)	-0.0018 (0.0206)	-0.0210** (0.00912)	-0.0185** (0.00961)
Controls	✓	✓	✓	✓	✓	✓
Municipality dummies	✓	✓	✓	✓	✓	✓
Year dummies	✓	✓	✓	✓	✓	✓
Full sample	✓		✓		✓	
Restricted sample		✓		✓		✓
Observations	18,464	2299	17,382	2169	17,103	2122
R-squared	0.314	0.374	0.410	0.445	0.502	0.470
Municipalities	1350	182	1350	182	1350	182

Note: Clustered standard errors in parenthesis; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

<sup>17</sup> The connection between the waste hauling industry and organised crime dates back decades. In the U.S., *Cosa Nostra* has been part of New York's commercial sanitation system since at least the 1950s (personal trash is hauled by the city's Department of Sanitation). "Carters", or trash haulers, have always been able to carve out and sell routes to one another, making the system vulnerable to strong-arm tactics. The *Camorra* is said to have controlled garbage in the city of Naples since the early 1980s. The poorly run system attracted worldwide attention when, back in 2008, uncollected garbage piled up on the city's streets for more than two weeks because, allegedly, the mafia had contributed to the closure of the dumps.

## 6. Robustness checks

In this section, we present a selection of tests verifying the robustness of our design and our three main estimation results: a significant inflation of construction and waste management investments, a contraction of police investments, and a reduction of waste taxes during infiltration periods.

**Infiltration period beginning with elections.** The starting assumption of our identification strategy is that the period of infiltration begins at the moment of the election of later-dissolved governments and ends with the dissolution. We test the validity of this assumption in Table 6, where we perform a placebo experiment on our restricted sample. If the significant variations in both public investments and revenues collection start in the period preceding infiltration, the decision to infiltrate a government might be taken as a result of these variations. This would occur if the criminal organisation were selecting municipalities where to extract rents on the basis of pre-determined variations in public expenditures or local taxes, made by governments with no links with organised crime. In this case, public spending decisions would be the cause, not the consequence, of organised crime infiltrations.

Our placebo test verifies the behaviour of governments preceding those later dissolved for mafia infiltration. For each of our key outcome variables we introduce three dummy variables taking value 1 respectively one, two, and three years before the election of later-dissolved government. All years coded as ‘infiltration years’ – from election to dissolution – are excluded from the sample.

We expect to find no significant correlation between pre-infiltration governments and any form of public spending or revenue collection distortion. Indeed, all the coefficients are insignificant, suggesting that the observed effects on public spending and revenue collection are significantly affected only after the election of later-dissolved governments.

Although we cannot reject with full certainty the possibility that infiltrations begin before elections, the results of our placebo test seem suggest that elections represent turning points for infiltrations. As suggested by Dal Bo’ (2007), elections may constitute a ‘recruitment process’ whereby a new bargaining table between crime and politics is established and the ‘criminal interest groups’ can select the political counterparts that best suit their interests.

**Table 6**  
Robustness check – timing of the infiltration

	Dependent variable:								
	Public spending						Revenues collection		
	Construction and waste management			Municipal police			Waste tax		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1 year before inf	0.0165 (0.0326)			0.00127 (0.00191)			0.00765 (0.0190)		
2 years before inf		0.0128 (0.0231)			0.00133 (0.00257)			0.00426 (0.0154)	
3 years before inf			0.0246 (0.0310)			0.000458 (0.0221)			0.0224 (0.0210)
Controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Municipality dummies	✓	✓	✓	✓	✓	✓	✓	✓	✓
Year dummies	✓	✓	✓	✓	✓	✓	✓	✓	✓
Observations	2133	2133	2133	2072	2072	2072	1738	1738	1738
R-squared	0.255	0.255	0.364	0.256	0.256	0.497	0.474	0.474	0.616
Municipalities	182	182	182	182	182	182	182	182	182

Note: Clustered standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Estimates performed on restricted sample. All years coded as 'infiltration years' – from the election to the dissolution of municipal governments – are excluded from sample.

As an additional test that the main effects do not begin before elections we perform a Granger causality test (Angrist and Pischke, 2008), analysing the dynamic evolution over time of investments and tax collections determined by the infiltration. The results, displayed in Appendix A6, further corroborate the evidence that the significant change in construction investments, police investments, and waste tax collection, do not precede the election of infiltrated governments.

**Treatment correlated with outcome variable.** Our results indicate that infiltrated local governments spend on average more on construction and waste management and less on municipal police. One concern, however, is that judicial investigators might choose to investigate precisely those municipalities that present anomalies in their balance sheets. If this is the case, the treatment would be correlated with the dependent variable, and the results would be biased.

In order to tackle this issue, we reproduced our analysis excluding from the sample all those municipalities for which the main reason for dissolution was related to distortions in public finances<sup>18</sup>. The results, shown in table A7.1, are unaltered from the main specifications. Hence, we can safely dismiss the concern that our results were driven by selection into treatment bias.

**Placebo test: mafia-unrelated dissolutions.** One concern related to the changes in the public spending of infiltrated governments is that, rather than being caused by the mafia, they might be driven by some inherent characteristics of dissolved local governments. These may include the degree of political instability, or the quality of politicians governing these local councils. In order to test for this, we exploit the fact that in Italy local governments can be dissolved for reasons unrelated to mafia infiltrations, including: failure to approve the financial budget, resignation of the mayor, resignation of more than 50% of the council members, vote of no confidence. These dissolutions are in fact relatively common in our sample and time-span – in the period from 1998 to 2013 there were 463 cases of municipal government dissolutions unrelated to the mafia within the three regions of analysis. We use these dissolutions as proxies for unstable governments and for low quality of elected politicians, replicating the estimates of model (1) using as the main explanatory variable a dummy taking value 1 for all years in which governments later-dissolved for mafia-unrelated reasons were governing the municipalities<sup>19</sup>. If the results in section 5 were

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<sup>18</sup> In order to perform this test, we exploit official statements on the dissolutions produced by the Ministry of Interior. These documents contain descriptions of the final reasons motivating the dissolution, as well as the reasons why the investigation was initiated. We exclude from our sample all the municipalities for which the investigation started because of abnormal public expenditures and/or the reason for the dissolution was due to spending-related distortions.

<sup>19</sup> This type of dissolution is indubitably a bad outcome for a newly elected local government. When, in fact, the government is dissolved for non-mafia related reasons, the elected politicians cannot run again in the following election. Thus, they have every incentive to avoid this scenario.

driven by local government characteristics unrelated to the mafia - rather than by infiltrations - we would expect to obtain similar effects as those presented above.

The results of this placebo test are shown in Appendix A8. We exclude all infiltrated governments and compare dissolved governments for mafia-unrelated reasons with other governments, before and after the dissolution takes place. We do so using the entire sample of municipalities from Calabria, Campania and Sicily from 1998 to 2013, controlling for time and municipality fixed effects, and all other controls. We obtain no statistically significant coefficients, suggesting that the observed differences between infiltrated and non-infiltrated governments are truly produced by the presence of the mafia.

## 7. Organised crime and politics

Our results have thus far revealed that collusion between criminal organisations and politicians has a significant impact on the allocation of public resources. Public finances can, however, be affected by a multiplicity of factors, the most intuitive and important of which is politics. Hence, a question is whether our results so far are truly driven by criminal infiltration or simply by some unobserved political characteristics of the local elections of infiltrated municipalities.

In answering this question, this section investigates the empirical relationship between organised crime and politics. Consequently, not only we provide a crucial test for the validity of our results, but we also offer further insight into the infiltration phenomenon.

### Mafia infiltration and local electoral factors

There are different political characteristics that might be associated with government capturing, one of which is electoral competition<sup>20</sup>. We assess whether mafia infiltration is related to the degree of electoral competition by exploiting the fact that there have been cases in which local elections in Southern Italy have been non-competitive, that is, *only one candidate* was potentially

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<sup>20</sup> Electoral competition may help giving rise to opposition parties that can inform the electorate about corruption or collusion (Schleiter and Voznaya, 2014) or, alternatively, more competitive elections may make it more difficult for voters to identify who is responsible for government policy and to coordinate in selecting the best politicians, hence increasing collusion (Lewis-Beck, 1988).

eligible as mayor because no other electoral lists were presented<sup>21</sup>. A lack of electoral competition may signal that the absence of political opposition within local councils facilitates the chances for the mafia to find valuable political referents, or it may imply that mafia pre-electoral intimidations limit the participation of other candidates.

Another political element which may be associated with infiltration is the mandate limit of the incumbent mayors<sup>22</sup>. We look at the moment of their political office – first or second term as mayor – in which incumbents are more likely to engage in collusion behaviours. We exploit the fact that up until 2014 all mayors had a limit of maximum of two consecutive terms in office<sup>23</sup> and examine whether infiltration is associated with the fact that mayors have no possibility to be immediately re-elected.

Finally, infiltrations may be systematically correlated with the political colour of governments. We explore this relationship by verifying if there is any political party recurrently forming collusive ties with organised crime. To test for that, we divide the political spectrum into three categories: left-wing parties, right-wing parties, and centre parties.

In order to investigate whether any correlation exists between the political characteristics of municipal elections and cases of criminal infiltration we regress a set of political indicators on the *Inf* dummy<sup>24</sup>. We focus on the 182 municipalities that have experienced at least one dissolution for mafia infiltration between 1998 and 2013 and estimate the following linear probability model:

$$Political\ factors_{m,t} = \alpha + \beta Inf_{m,t} + \gamma Mafia_{p,t} + \delta NatGov_t + \vartheta X_{m,t} + \varphi_m + \tau_t + \varepsilon_{m,t} \quad (2)$$

*Political factors*<sub>m,t</sub> is sub-divided into a set of variables referring to key political features of the local government, namely *Single Candidate*<sub>m,t</sub>, *Last Mandate*<sub>m,t</sub>, *Party Colour*<sub>m,t</sub>.

*Single Candidate*<sub>m,t</sub> is a dummy variable taking value one if the mayor governing the municipality at time *t* in municipality *m* was the only one candidate at the previous local elections, while past elections of the same municipality were competitive with multiple candidates. *Last Mandate*<sub>m,t</sub> is a dummy taking value one if the mayor is running for the last mandate and

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<sup>21</sup> In such cases, the only condition for elections to be valid is a voter turnout above 50%.

<sup>22</sup> Binding term limit tend to affect the behaviour of politicians (Besley and Case, 1995; List and Sturm, 2006) and may increase corruption and collusion cases (Ferraz and Finan, 2011).

<sup>23</sup> Even if this would allow mayors to run for a third term after a term break, third-term candidacies are rare.

<sup>24</sup> The analysis exploits the same dataset used in Section 3, augmented with data on election characteristics from the Historical Archive of Local Elections of the Italian Ministry of Interior.

has been in office for more than one term, and zero otherwise.  $Party\ Colour_{m,t}$  represents the political party that is ruling the government of municipality  $m$  at time  $t$ . It is sub-divided into three categories: Right party, Left party, Centre party<sup>25</sup>. Each of these is binary and takes value one if the party of that political side has won the previous elections and is ruling the municipality at time  $t$ . Descriptive statistics of these variables are in Appendix A9.

$NatGov_t$  is a dummy variable controlling for the political colour of the national government at time  $t$ . It takes value one when coalitions led by left-wing parties are ruling the country.

The model includes controls, fixed and year effects. We exclude from the sample all years in which municipal governments were commissioned, not just for mafia infiltration but also for other reasons. Table 7 summarises the results.

**Table 7**  
Infiltration and political factors

	Dependent variable:				
	Single Candidate (1)	Last Mandate (2)	Right Party (3)	Left Party (4)	Centre Party (5)
Inf	0.0474** (0.0194)	0.189*** (0.0506)	0.0942** (0.0516)	-0.0682 (0.0464)	0.0351 (0.0327)
National gov (Left)	✓	✓	✓	✓	✓
Controls	✓	✓	✓	✓	✓
Year dummies	✓	✓	✓	✓	✓
Municipality dummies	✓	✓	✓	✓	✓
Observations	2869	2869	2582	2582	2582
R-squared	0.220	0.259	0.455	0.468	0.417
Municipalities	182	182	182	182	182

Note: Clustered standard errors in parentheses; \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ . Governments without a clear political colour (right, left, or centre) excluded from sample in columns (3)-(5).

The coefficient of  $Single\ Candidate_{m,t}$  is positive and significant in column (1). One interpretation of this finding is that due to mafia-government agreements, the mafia operates to reduce political competition, up to the point that only their preferred candidate is running for mayor. Alternatively, it may be that infiltrations are more likely to occur if the local council lacks any political group potentially contrasting the decisions of the government. Moving to column (2), the coefficient of the  $Last\ Mandate_{m,t}$  dummy variable is positive and significant, suggesting that mayors in their last term in office are more likely to collude with organised crime. In columns (3) we look for a ‘partisanship effect’, i.e. a systematic relationship between

<sup>25</sup> When estimating the model with  $Party\ Colour_{m,t}$  variables, we have excluded the few governments whose administration cannot be classified among the three categories of parties.



infiltrations and some types of parties. The result of a positive and significant coefficient for the Right party dummy variable suggests that infiltrations are significantly correlated with the probability of having conservative local governments.

## Political factors and public finance in infiltrated municipalities

All the political and electoral elements discussed so far may not only be correlated with infiltrations, but also with investment decisions of local governments<sup>26</sup>. Hence, for any uncovered correlation between political conditions and infiltration cases we test their correlation with key categories of local public finance.

**Table 8**  
Political factors and key outcome variables

	Dependent variable:								
	Public spending						Revenues collection		
	Construction and waste management			Municipal police			Waste tax		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Last mandate	0.0098 (0.0160)			0.0002 (0.0013)			0.0100 (0.0118)		
Single candidate		-0.0686 (0.0451)			-0.0012 (0.0025)			-0.0199 (0.0252)	
Centre party			-0.0453 (0.0301)			0.0001 (0.00242)			0.0018 (0.0288)
Right party			-0.0178 (0.0179)			-0.0002 (0.00242)			-0.0195 (0.0137)
Inf	0.0465*** (0.0164)	0.0512*** (0.0163)	0.0418*** (0.0182)	-0.0025** (0.0012)	-0.0024** (0.0011)	-0.0027* (0.0014)	-0.0227** (0.0088)	-0.0193** (0.0085)	-0.0161* (0.0095)
National gov (Left)	✓	✓	✓	✓	✓	✓	✓	✓	✓
Controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Municipality dummies	✓	✓	✓	✓	✓	✓	✓	✓	✓
Year dummies	✓	✓	✓	✓	✓	✓	✓	✓	✓
Observations	2,778	2,778	2,408	2,717	2,717	2,351	2,302	2,302	2,005
R-squared	0.227	0.228	0.236	0.235	0.235	0.239	0.451	0.451	0.465
Municipalities	182	182	182	182	182	182	182	182	182

Note: Clustered standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Sample of municipalities having experienced at least one government dissolution for mafia infiltration.

<sup>26</sup> Local political conditions may influence the allocation of public expenditures (Johnston, 1977; Besley and Coate, 1998). The expectations for and results of electoral contests may be drivers of the territorial allocation of public investments if, for example, incumbent governments allocate public resources with the aim of extracting the highest electoral benefits (Cadot et al., 2006; Rodriguez-Pose et al., 2016), or if public investments are seen as a mean to reward voters for electoral support (Golden and Picci, 2008). While this is a possibility, there is substantial evidence suggesting that the distribution of public expenditures is not always influenced by pork-barrel politics or strategic electoral considerations (e.g. Larcinese et al., 2012; Luca and Rodriguez-Pose, 2015).

The results of model (4), displayed in Table 8, report no significant correlation between key political factors and the public finance components varying during infiltration periods. This suggests that, as hypothesised, the variations in public spending are not determined by any of the political elements linked with infiltrations.

## Partisanship and mafia infiltration

The previous section uncovered a systematic correlation between criminal infiltrations and governments ruled by conservative parties. Although interesting, this result cannot be interpreted causally. The electoral victory of a right-wing candidate is plausibly correlated with a wide range of socioeconomic characteristics of the municipality. To give a more causal interpretation to the relationship between right-wing parties and infiltration, we implement a regression discontinuity design (RDD).

We compare municipalities where right-wing candidates won local elections by a narrow margin to municipalities where right-wing candidates lost by a narrow margin. The underlying assumption is that municipalities where right-wing candidates won or lost by a narrow margin are similar across all characteristics, except for the ideological leaning of the incumbent politician. Table A10.1 in the Appendix provides evidence that key covariates (socio-economic variables, mafia strength, local election characteristics) are not significantly different in treatment and control groups used for the RDD<sup>27</sup>.

Let  $X_{m,t}$  be the vote share of the right-leaning candidate minus the vote share of the non-right candidate,  $R_{m,t}$  be the treatment dummy variable referring to electoral victories of right-wing parties, and  $\Pr(Inf)_{m,t}$  the probability of infiltration.  $R_{m,t} = 1$  if  $X_{m,t} > 0$  and  $R_{m,t} = 0$  if  $X_{m,t} < 0$ . We focus on the set of electoral races where  $X_{m,t}$  is lower than a bandwidth  $h$ <sup>28</sup>, such that the outcome of those races can be considered as good as random. Our treatment effect is the average difference between  $\Pr(Inf)_{m,t}$  of a municipality where the right narrowly wins and  $\Pr(Inf)_{m,t}$  of a municipality where the right is narrowly defeated.

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<sup>27</sup> As a robustness check, the RDD estimates are replicated comparing all the close electoral races where the right barely wins or loses against the *left party* only. The results are unchanged from the ones obtained when all non-right parties belong to the control group. Estimation results available upon request.

<sup>28</sup> We use Calonico et al.'s (2014) optimal bandwidth, which in our setting corresponds to 0.075, meaning that the sample is made of governments whose election was characterised by a difference in votes between the right-wing party and other parties below 7.5%.

We estimate the RDD both parametrically and non-parametrically, and using linear and quadratic polynomials. Table 9 reports our results, obtained with the full sample of municipalities from Campania, Calabria and Sicily. Columns (1) and (2) present the results when using a linear and quadratic functional forms, respectively. We remove assumptions of linearity in columns (3)-(5). In all cases, we find a positive and significant correlation, indicating that the probability of infiltration increases as right-wing parties win local elections by a small margin.

**Table 9**  
Effect of right-wing close electoral victory on the probability of infiltration

	Dep. variable: probability of infiltration				
	Non - parametric		Parametric		
	(1)	(2)	(3)	(4)	(5)
Right-wing winner	0.0751* (0.0399)	0.0846* (0.0524)	0.0722** (0.0366)	0.0722** (0.0365)	0.101* (0.0604)
Bandwidth	0.0751	0.0751	0.0751	0.0751	0.0751
Polynomial	Linear	Quadratic	Linear	Linear	Quadratic
Observations	911	911	911	911	911

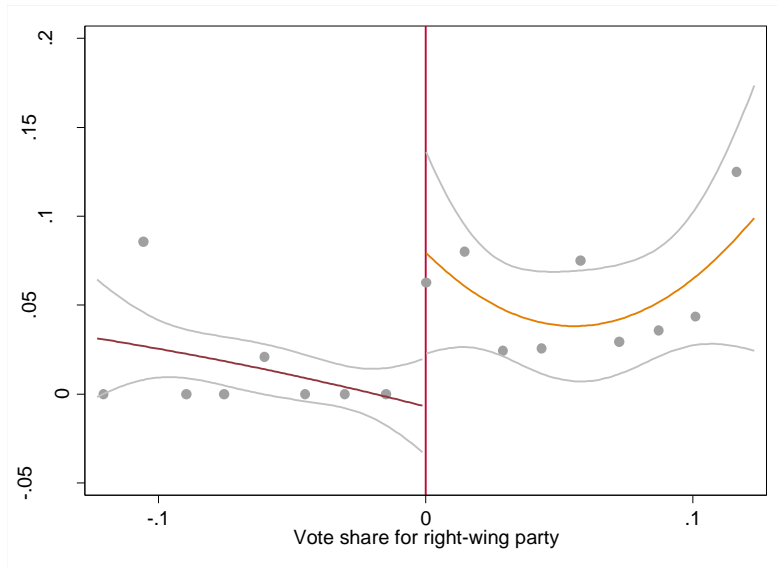
Note: Robust standard errors in parenthesis; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Forcing variable coefficients not displayed. Column 1: rddrobust linear; column 2: rddrobust polynomial; column 3: linear regression with kernel weights; column 4: linear regression varying linear slopes; column 5: polynomial regression of order 2 with interaction with forcing variable. All the estimations use Calonico et al.'s (2014) bandwidth.

Figure 7 illustrates these findings graphically, where observations are fitted with polynomials of order two and include confidence interval bands. A statistically significant increase in the number of infiltrated municipalities on the right-hand side of the threshold is evident.

These findings complement well those of Buonanno et al. (2016) and Alesina et al. (2016), focusing on Italian national elections and reporting a systematic correlation between mafia-plagued municipalities and the main right-wing party during a similar period of analysis.

As shown in Appendix A10, the results remain significant as the bandwidth increases or decreases to elections where the margin of victory is as low as 4% (Figure A10.2), and the effect is statistically insignificant at placebo cutoffs (Figure A10.3).

**Figure 7**  
RDD – right-wing party victory and probability of infiltration



Note: polynomial fit of order 2. vote share>0 refers to elections won by right-wing parties; vote share<0 refers to elections barely lost by right-wing parties.

## Partisanship and public finances

Such a significant relationship between right-wing parties and probability of infiltration may imply that changes in public finances are not caused by mafia infiltrations but rather by right-wing local governments. To rule out this concern, we replicate RDD estimates by using the key public finance components affected by infiltrations as dependent variables.

Table 10 reports the results. The insignificant coefficients of right-wing parties reveal that there is no statistically significant variation any of the three components in municipal governments ruled by right-wing parties that barely won the elections.

**Table 10**  
Effect of right-wing close electoral victory on public finances

	Dependent variable:		
	Construction and waste management (1)	Municipal police (2)	Waste tax (3)
Right-wing winner	-0.0194 (0.0263)	-0.0480 (0.0551)	-0.0216 (0.0353)
Bandwidth	0.0751	0.0751	0.0751
Observations	620	620	620

Note: Robust standard errors in parenthesis; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

Figure 8 reproduce the estimation results in graphical forms, providing evidence that no significant discontinuity around the threshold is present for the three public finance components.

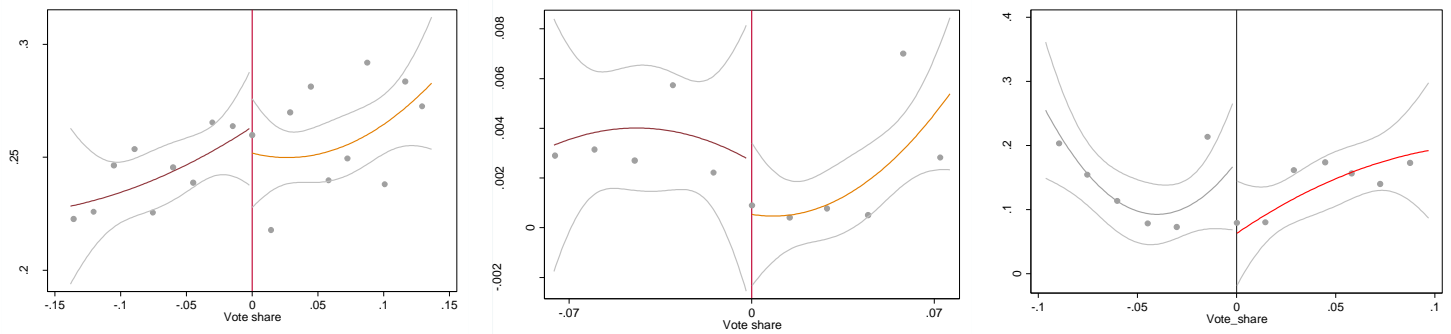
**Figure 8**

RDD – right-wing party victory and current account spending components

Construction and waste management

Municipal police

Waste tax



Note: polynomial fit of order 2. vote share>0 refers to elections won by right-wing parties; vote share<0 refers to elections barely lost by right-wing parties.

## 8. Conclusions

Government captures distort the functioning of administrative systems. Illegal and secretive agreements between elected officials and colluding parties may alter the political process and condition the definition of public policies in the interests of citizens. In this paper, we have explored the impact of the collusion between organised crime and local politicians in Southern Italy. Our study is the first in the literature to empirically study the phenomenon of infiltration, analysing both the conditions that make collusions more likely and their possible consequences.

The findings indicate that collusions between mafia and politics affect the allocation of public resources and the ability of local governments to collect fiscal revenues. Our analysis suggests that while the overall amount of financial resources invested by local governments remains unaltered, expenditures for specific components of municipal balance sheets vary significantly as a result of infiltrations. Infiltrated municipalities spend higher shares of resources in construction and waste management, reduce annual investment in municipal police forces, and are less efficient in collecting waste taxes. These results are robust to changes in specifications and to a series of robustness checks.

Furthermore, we have identified a set of political characteristics of municipal elections that are correlated with infiltrations. We find that infiltrations are linked with the absence of competition

at local elections, as well as with mayors running for their second and last mandate. In addition, we have tested for a systematic correlation between infiltrated governments and political parties of a specific colour, uncovering that infiltrations are more likely to occur when governments are controlled by right-wing mayors. This may imply that during our period of analysis, 1998-2013, mafia groups had a preference for right-wing parties when looking for political referents.

These findings shed light on the strategy of organised crime when it endeavours to take control of local politics and on the consequences of such meddling for local state capacity. Interestingly, influences on political choices perpetrated by organised crime seem to impact on public finances in a different way as compared to general forms of political interference (from any type of pressure group) as identified in the literature. While previous empirical studies on the capturing of political decision-making have found that the undue influence of powerful groups on politics (e.g. through corruption) determines a general inflation of public capital expenditures (Tanzi and Davoodi, 1997), our analysis reveals that organised crime operates differently when infiltrated within local governments. Mafia infiltrations neither entail generalised inflations of public expenditures – which would increase the probability of mafia's political trustees to be removed from power for financial instability reasons – nor do they seem to imply a conditioning of the current expenditures budget. Rather, local finances are modified only in the strategic sectors where the mafia has interests to protect. In particular, the largest influence on the municipal financial budget seems to involve a substantial diversion of investment funds towards the construction sector, which is considered crucial for mafia groups in order to reinforce their presence locally, protect their traffics, and further increase business profits (Gambetta, 1993; Sciarrone, 2011; Transcrime, 2013)

The fact that infiltrated governments are less likely to incur in financial mismanagement issues makes it more complicated to detect and remove them. As a consequence, in local territories where the presence of the mafia is more pervasive, efforts to 'clean up' legal institutions from politicians linked to criminal organisations must be considerable. The 164/1991 law has allowed to discover and put an end to hundreds of collusion cases, but the relative frequency of repeated dissolutions in the same municipality (sometimes after just a few years) demonstrates that more powerful legislative tools are needed to completely eradicate the phenomenon of political infiltrations. A strengthening of the law allowing mafia-related government dissolutions, under discussion in these years (Cantone, 2010), may prove helpful. However, this reform could be insufficient if not coupled with measures preventing any potential distortions to democratic competition at local elections. Equally important to limit the local power of mafia clans would be to guarantee public

services and employment opportunities in the small towns and urban neighbourhoods where organised crime currently has the upper hand.

How harmful is a protracted mafia-capturing of political systems for the socio-economic development of local communities? This will depend on how detrimental for the economy are the distortions in public finances and political competition identified by our study. While we have briefly discussed the negative implications of such interferences (e.g. on the fair competition for public work tenders), our estimates do not calculate their precise welfare impact. We leave the task of quantifying the socio-economic effects of infiltrations to future research.

To conclude, our analysis has unveiled the important distortionary effect that mafia infiltrations may have on politics and public policy choices. This study helps to gain a deeper understanding of such phenomenon and, possibly, aid in its prevention.

## References

- Acconcia, A., G. Corsetti & S. Simonelli (2014). 'Mafia and Public Spending: Evidence on the Fiscal Multiplier from a Quasi-experiment', *American Economic Review* 104, 2185-2209.
- Alesina, A., P. Pinotti & S. Piccolo (2016). 'Organised Crime, Violence and Politics', NBER Working Paper w22093.
- Allum, F., & R. Siebert (2003). *Organized Crime and the Challenge to Democracy*, Abingdon: Routledge.
- Angrist, J.D., & J. Pischke (2008). *Mostly Harmless Econometrics: An Empiricist's Companion*, Princeton, NJ: Princeton University Press.
- Bandiera, O. (2003). 'Land reform, the market for protection, and the origins of the Sicilian mafia: theory and evidence', *Journal of Law, Economics, and Organisation* 19, 21-44.
- Barone, G., & G. Narciso (2015). 'Organised Crime and business subsidies: where does the money go?', *Journal of Urban Economics* 86, 98-110.
- Besley, T., & A. Case (1995). 'Incumbent Behavior: Vote Seeking, Tax Setting and Yardstick Competition', *American Economic Review* 85, 25-45.
- Besley, T., & S. Coate (1998). 'Sources of inefficiency in a representative democracy: a dynamic analysis', *American Economic Review* 88, 139-156.
- Buonanno, P., P. Vanin, G. Prarolo & R. Durante (2015). 'Poor institutions, rich mines: resource curse and the origins of the Sicilian mafia', *Economic Journal* 125, 175-202.
- Buonanno, P., P. Vanin & G. Prarolo (2016). 'Organised Crime and Electoral Outcomes. Evidence from Sicily at the turn of XXI Century', *European Journal of Political Economy* 41, 61-74.
- Cadot, O., L.H. Roller, & A. Stephan (2006). 'Contribution to Productivity or Pork Barrel? The Two Faces of Infrastructure Investment', *Journal of Public Economics* 90, 1133-1153.
- Cantone, R. (2010). *I Gattopardi*. Milan: Mondadori.
- Calonico, S., M.D. Cattaneo & R. Titiunik (2014). 'Robust nonparametric confidence intervals for regression-discontinuity designs', *Econometrica* 82, 2295-2326.
- Casaburi, L., & U. Troiano (2016). 'Ghost-house busters: the electoral response to a large anti-tax evasion program', *Quarterly Journal of Economics* 131, 273-314.



- Crescenzi, R., M. Di Cataldo & A. Rodríguez-Pose (2016). 'Government Quality and the Economic Returns of Transport Infrastructure Investment in European Regions', *Journal of Regional Science* 56, 555-582.
- Dal Bo', E. (2007). 'Bribing Voters', *American Journal of Political Science* 51, 789-803.
- Daniele, V., & U. Marani (2011). 'Organised crime, the quality of local institutions and FDI in Italy: a panel data analysis', *European Journal of Political Economy* 27, 13-42.
- Daniele, G., & B. Geys (2015). 'Organised Crime, Institutions and Political Quality: Empirical Evidence from Italian Municipalities', *Economic Journal* 125, 233-255.
- Daniele, G., & B. Geys (2016). 'Exposing politicians' ties to criminal organisations: the effects of local government dissolutions on electoral outcomes in southern Italian municipalities', Documents de Treball de l'IEB 2015/41, Institut d'Economia de Barcelona.
- De Feo, G., & G. De Luca (2017). 'Mafia in the ballot box', *American Economic Journal: Economic Policy* 9, 143-167.
- Dickie, J. (2005). *Cosa Nostra: a history of the Sicilian Mafia*. London: Macmillan.
- Dimico, A., A. Isopi, & O. Olsson (2017). 'Origins of the Sicilian Mafia: The Market for Lemons', *Journal of Economic History* 77, 1083-1115.
- Ehrlich, I., & F. Lui (1999). 'Bureaucratic corruption and endogenous economic growth', *Journal of Political Economy* 107, 270-293.
- Ferraz, C., & F. Finan (2011). 'Electoral Accountability and Corruption: Evidence from the Audits of Local Governments', *American Economic Review* 101, 1274-1311.
- Galletta, S. (2016). 'Law enforcement, municipal budgets and spillover effects: Evidence from a quasi-experiment in Italy', IdEP Economic Papers 2016/01.
- Gambetta, D. (1993). *The Sicilian Mafia: The Business of Private Protection*, Cambridge, MA: Harvard University Press.
- Gambetta, D. & P. Reuter (1995). 'Conspiracy among the Many: The Mafia in Legitimate Industries', in G. Fiorentini & S. Peltzman (eds.) *The Economics of Organised Crime*, Cambridge: Cambridge University Press, 116-160.
- Ganau, R., & A. Rodríguez-Pose (2017). 'Industrial clusters, organized crime, and productivity growth in Italian SMEs', *Journal of Regional Science* 58, 363-385.
- Golden, M.A., & L. Picci (2008). 'Pork-barrel politics in postwar Italy, 1953-94'. *American Journal of Political Science* 52, 268-289.

- Gupta, S., L. de Mello, & R. Sharan (2001). 'Corruption and Military Spending', *European Journal of Political Economy* 17, 749-777.
- Johnston, R.J. (1977). 'Environment, elections and expenditure: analyses of where governments spend', *Regional Studies* 11, 383-394.
- Larcinese, V., J.M. Snyder & C. Testa (2013). 'Testing models of distributive politics using exit polls to measure voters' preferences and partisanship', *British Journal of Political Science* 43, 845-875.
- Lavezzi, A. (2008). 'Economic structure and vulnerability to organised crime: Evidence from Sicily', *Global Crime* 9, 198-220.
- Leonardi, R. (1995). 'Regional development in Italy, social capital and the Mezzogiorno'. *Oxford Review of Economic Policy* 11, 165-179.
- Lewis-Beck, M. (1988). *Economics and Elections: The Major Western Democracies*. Ann Arbor, MI: University of Michigan Press.
- List, J., & D. Sturm (2006). 'How Elections Matter: Theory and Evidence from Environmental Policy', *Quarterly Journal of Economics* 121, 1249-1281.
- Luca, D., & A. Rodríguez-Pose (2015). 'Distributive Politics and Regional Development: Assessing the Territorial Distribution of Turkey's Public Investment', *Journal of Development Studies* 51, 1518-1540.
- Lupo, S. (2004). *Storia della mafia dalle origini ai giorni nostri*, Roma: Donzelli.
- Mauro, P. (1997). 'The Effects of Corruption on Growth, Investment and Government Expenditure: A Cross-Country Analysis'. in *Corruption and the World Economy*, edited by K.A. Elliot. Washington, DC: Institute for International Economics.
- Mauro, P. (1998). 'Corruption and the composition of government expenditure', *Journal of Public Economics* 69, 263-279.
- McCrary, J. (2008). 'Manipulation of the Running Variable in the Regression Discontinuity Design: A Density Test', *Journal of Econometrics* 142, 698-714.
- Olivieri, E., & S. Sberna (2014). 'Set the night on fire! Mafia Violence and Elections in Italy', SSRN Working Paper 37.
- Pinotti, P. (2015). 'The economic consequences of organised crime: evidence from southern Italy', *Economic Journal* 125, 203-232.
- Pinotti, P., & P. Stanig (2017). 'Sowing the Mafia: A Natural Experiment', Bocconi University, mimeo.

- Putnam, R.D. (1993) *Making Democracy Work: Civic Traditions in Modern Italy*. Princeton, NJ: Princeton University Press.
- Rajkumar, A., & V. Swaroop (2008). 'Public Spending and Outcomes: Does Governance Matter?', *Journal of Development Economics* 86, 96-111.
- Rodríguez-Pose, A., Y. Psycharis, & V. Tselios (2016). 'Politics and Investment: Examining the Territorial Allocation of Public Investment in Greece', *Regional Studies* 50, 1097-1112.
- Schleiter, P. & A. Voznaya (2014). 'Party System Competitiveness and Corruption', *Party Politics* 20, 675-686.
- Sciarrone, R. (2011). *Alleanze nell'ombra. Mafie ed economie locali in Sicilia e nel Mezzogiorno*, Roma: Donzelli Editore.
- Shleifer, A., & R. Vishny (1993). 'Corruption', *Quarterly Journal of Economics* 108, 599-617.
- Transcrime (2013). 'Progetto pon sicurezza 2007-2013: Gli investimenti delle mafie', Transcrime, Università Cattolica del Sacro Cuore, Milan.
- Tanzi, V., & H.R. Davoodi (1997). 'Corruption, Public Investment, and Growth'. IMF working paper 97/139.
- Trigilia, C. (2001). 'Social Capital and Local Development', *European Journal of Social Theory* 4, 427-442.

# Appendix

## A1 Correlation between dissolved municipal governments and national or provincial governments, 1998-2013

**Table A1.1**  
Municipal governments and national governments

no of dissolutions	Municipal government	National government	
		Right	Left
67	Right <sup>a</sup>	-0.108	0.061
43	Left <sup>b</sup>	0.139	-0.047
6	Centre <sup>c</sup>	-0.068	-0.011

Note: no statistically significant coefficient. Right-wing national governments: Berlusconi 2001-2005 and Berlusconi 2008-2011; Left-wing national governments: Prodi 1998, D'Alema 1999, Amato 2000, Prodi 2006-2007, Letta 2013; Centre national governments: Monti 2012. a / Right-wing municipal governments during infiltration period; b / Left-wing municipal governments during infiltration period; c / Municipal government ruled by a Centre party during infiltration period.

**Table A1.2**  
Municipal governments and provincial governments

Municipal government	Province and provincial government									
	Caserta		Napoli		Reggio Calabria		Vibo Valentia		Palermo	
	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left
Right <sup>a</sup>	-0.143	/	0.277	/	0.233	/	N/A	/	-0.154	/
Left <sup>b</sup>	/	-0.149	/	0.194	/	0.143	/	0.239	/	N/A

Note: no statistically significant coefficient. None of these provinces had governments from the 'Centre' over the 1998-2013 period. Vibo Valentia only had left-wing governments while Palermo only had right-wing governments. a / Right-wing municipal governments during infiltration period in given province. b / Left-wing municipal governments during infiltration period in given province.

## A2 Municipal institutional setting and public spending

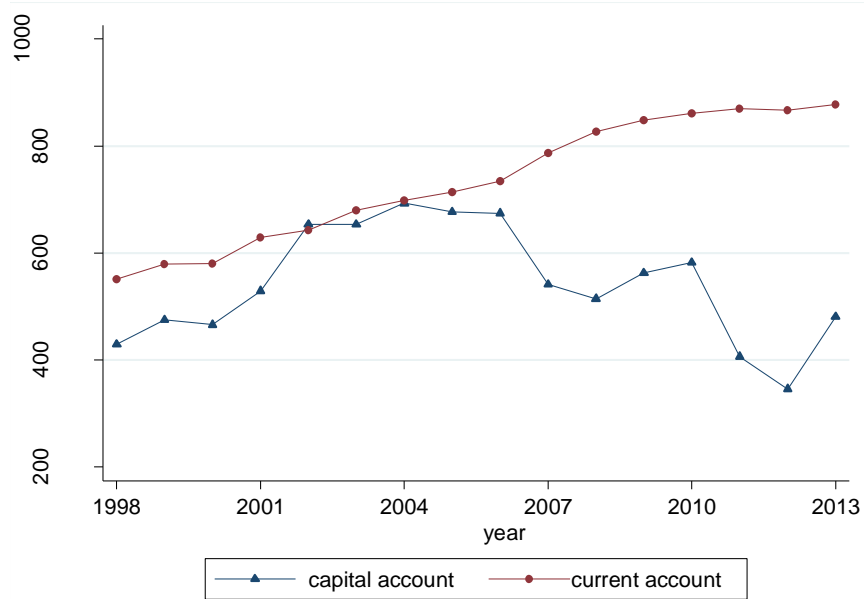
**Institutional setting.** As of 2016, there were 8,010 municipalities in Italy, 1350 of which are found in the regions of analysis, varying considerably by area and population. The institutional setting of the municipalities is centred on the figure of the mayor, who heads the local government and leads along with the legislative body, the local council, and the executive body, the local *giunta*. The mayor and members of the council are elected together by resident citizens. The *giunta* is chaired by the mayor, who appoints its members. Elections of local councils are staggered over time and not held at the same time for all municipalities.

**Public spending components.** The six key public spending categories of municipalities are: general administrative functions, social sectors, construction and waste management, transportation, public education and municipal police.

(1) General functions of administration include all expenses related to the management of offices coordinating the internal activities of the municipality; (2) social sectors include all expenses for the provision of social services and the creation of infrastructure to that aim (kindergartens, retirement homes, rehab centres); (3) construction and waste management refers to all expenses for urban planning – adoption of construction plans and building regulations, maintenance and construction of all new buildings (all part of capital spending), waste collection and disposal (current spending); (4) transportation includes expenses to guarantee local public transportation, public lighting, provision of local road infrastructure; (5) public education includes all expenses for all education infrastructure, school maintenance and school transportation; (6) functions of local police include the acquisition and maintenance of goods and equipment, cars and office structures.

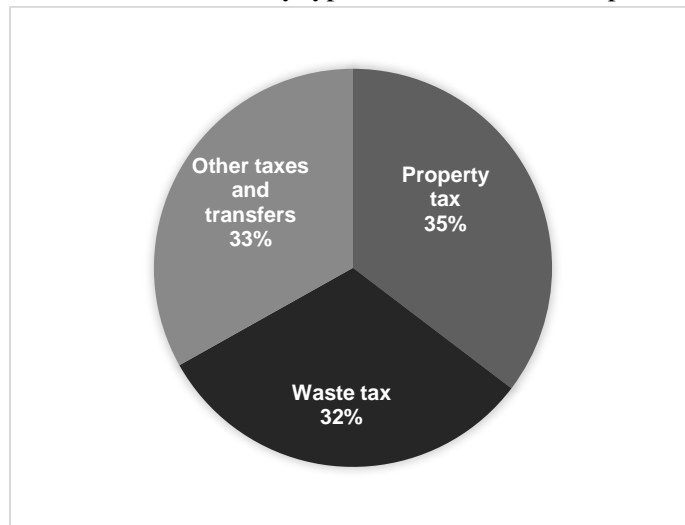
One key responsibility of Italian municipalities is to tender and award public procurement contracts to the contractor companies in charge of carrying out the work.

**Figure A2.1**  
Current and capital expenditure allocations over time



Source: own elaboration with Ministry of Interior data.

**Figure A2.2**  
Proportion of fiscal revenues by type of tax, Italian municipalities



Source: own elaboration with Ministry of Interior data.

## A3 Robustness checks – time trends

In Tables A3.1, Table A3.2, Table A3.3, and Table A3.4 we provide a series of robustness checks for our main results. In all estimations, the sample is restricted to the municipalities that experienced at least one dissolution.

In the first column, a parsimonious specification is presented, including time fixed effects and no other controls. The second column adds mafia-proxy and municipal socio-economic factors as controls. In practice, the results in column (2) of table A3.1 – A3.4 replicate those in columns (6) and (12) of Table 3, column (22) of Table 4, and column (5) of Table 5. In the third column of Tables A3.1 – A3.4, we include a full set of linear time trends for each municipality, accounting for any previously omitted factors potentially affecting the temporal development of municipal governments and correlated with infiltrations. This specification reports a coefficient for the infiltration dummy of similar magnitude of those in the previous columns for both capital expenditures in construction and waste management and for municipal police. The result for waste taxes is also unaffected. However, the coefficient of current expenditures for municipal police turns insignificant.

In column (4) of Tables A3.1-A3.4, we relax the assumption of infiltrations beginning with the election of later-dissolved governments, by including the infiltration dummy with a one year lag. This classifies infiltrations as if they initiated in the year after the elections, by introducing one additional lag between the moment of infiltration and the moment in which the financial resources were actually spent by local governments (the spending variable is measured at period  $t+1$ ).

**Table A3.1**

Effect of infiltration on capital expenditures in construction and waste management

	Dep. variable: Capital expenditures for Construction and waste management			
	(1)	(2)	(3)	(4)
Inf	0.0469*** (0.0177)	0.0442** (0.0181)	0.0466** (0.0200)	
Lagged Inf				0.0674*** (0.0249)
Controls		✓	✓	✓
Year dummies	✓	✓	✓	✓
Municipality dummies	✓	✓	✓	✓
Time trends			✓	✓
Observations	2559	2559	2559	2405
R-squared	0.220	0.227	0.333	0.348
Municipalities	182	182	182	182

Note: Clustered standard errors in parenthesis; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Lagged Inf is the infiltration dummy lagged by one period.

**Table A3.2**

Effect of infiltration on capital expenditures in municipal police

	Dep. variable: Capital expenditures for municipal police			
	(1)	(2)	(3)	(4)
Inf	-0.00277** (0.00125)	-0.00222* (0.00118)	-0.00467* (0.00242)	
Lagged Inf				-0.00335* (0.00206)
Controls		✓	✓	✓
Year dummies	✓	✓	✓	✓
Municipality dummies	✓	✓	✓	✓
Time trends			✓	✓
Observations	2496	2496	2496	2412
R-squared	0.230	0.235	0.419	0.431
Municipalities	182	182	182	182

Note: Clustered standard errors in parenthesis; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Lagged Inf is the infiltration dummy lagged by one period.



**Table A3.3**

Effect of infiltration on current expenditures in municipal police

	Dep. variable: Current expenditures for municipal police			
	(1)	(2)	(3)	(4)
Inf	-0.00301** (0.00128)	-0.00217* (0.00123)	-0.000757 (0.00116)	
Lagged Inf				-0.000756 (0.00126)
Controls		✓	✓	✓
Year dummies	✓	✓	✓	✓
Municipality dummies	✓	✓	✓	✓
Time trends			✓	✓
Observations	2579	2579	2579	2415
R-squared	0.658	0.665	0.775	0.784
Municipalities	182	182	182	182

Note: Clustered standard errors in parenthesis; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Lagged Inf is the infiltration dummy lagged by one period.

**Table A3.4**

Effect of infiltration on waste and garbage taxes

	Dep. variable: Waste tax collection			
	(1)	(2)	(3)	(4)
Inf	-0.0201** (0.00928)	-0.0185** (0.00961)	-0.0173** (0.00816)	
Lagged Inf				-0.0151* (0.00799)
Controls		✓	✓	✓
Year dummies	✓	✓	✓	✓
Municipality dummies	✓	✓	✓	✓
Time trends			✓	✓
Observations	2122	2122	2122	1981
R-squared	0.454	0.470	0.645	0.652
Municipalities	182	182	182	182

Note: Clustered standard errors in parenthesis; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Lagged Inf is the infiltration dummy lagged by one period.

## A4 Effect of infiltration on capital expenditure components by municipal population

Our analysis has unveiled that mafia infiltrations modify the investment decisions of local governments. The impact of the mafia on public finance allocations is likely to vary according to some characteristics of the local context. In this appendix section we investigate whether the intensity of the effect depends on the size of the municipalities whose governments are infiltrated.

We test this by sub-dividing the entire sample into municipalities with less than 2000 inhabitants, between 2000 and 5000 inhabitants, and above 5000 inhabitants, replicating the main estimates. As shown in Table A4.1 below, inflations in capital expenditures for construction and waste management are higher, the smaller the population of a municipality. The coefficient of the infiltration dummy is positive and significant for medium and small-size municipalities and the magnitude is larger for towns below 2000 inhabitants. One interpretation for this result is that small towns are where the power of the mafia can be more pervasive, due to the high control of territory it exercises and to the greater distance from the central State felt by the citizens. In the context of small localities where the presence of the mafia is more diffused, collusion is expected to lead to a stronger predatory behaviour – i.e., more public work tenders awarded to mafia-controlled firms.

By using the same sub-division by population size, we replicate the estimates adopting the share of municipal police spending as the dependent variable. In this case, the reduction of the investment share is larger in cities with greater than 5,000 inhabitants. This result can be explained by the fact that the investment budget for police forces managed by large cities is significantly larger than those of small towns. The mafia has more interest in limiting expenses for law enforcement where the latter can affect the productivity of police investigations.

**Table A4.1**

Effect of infiltration on capital expenditure components by municipal population

Dep. Variable:	Capital expenditures for construction and waste management			Capital expenditures for municipal police		
	population:			population:		
	below 2000 (1)	between 2000 and 5000 (2)	above 5000 (3)	below 2000 (4)	between 2000 and 5000 (5)	above 5000 (6)
Inf	0.0951** (0.0425)	0.0795** (0.0331)	0.0199 (0.0219)	0.00283 (0.00259)	-0.00183 (0.00180)	-0.00338** (0.00168)
Controls	✓	✓	✓	✓	✓	✓
Year dummies	✓	✓	✓	✓	✓	✓
Municipality dummies	✓	✓	✓	✓	✓	✓
Observations	6,817	6,514	7,447	6,564	6,299	7,258
R-squared	0.193	0.222	0.234	0.139	0.157	0.175
Municipalities	473	469	502	473	469	502

Note: Clustered standard errors in parenthesis; \*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1.

## A5 Main results with coefficients of control variables

**Table A5.1**  
Effect of infiltration on public expenditures and on revenues collection

	Dependent variable:							
	Total per capita spending		Capital expenditures construction and waste management		Capital expenditures municipal police		Waste tax	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Inf	-0.0223 (0.0189)	-0.0066 (0.0191)	0.0448** (0.0175)	0.0442** (0.0181)	-0.00262** (0.00126)	-0.00222* (0.00118)	-0.0203** (0.00908)	-0.0176* (0.00951)
Mafia homicides	1.150** (0.536)	-2.177 (1.533)	0.178 (0.368)	-0.858 (0.904)	-0.0246 (0.0248)	-0.0428 (0.0574)	0.309 (0.213)	-0.284 (0.565)
Agricultural employment	0.0152** (0.00611)	0.0189* (0.0105)	0.00332 (0.00312)	0.0126 (0.00882)	-0.000324** (0.000150)	-0.00180*** (0.000581)	-0.00257 (0.00283)	-0.00248 (0.00445)
Tertiary educated	-0.0104 (0.0113)	0.0315 (0.0246)	0.00193 (0.00343)	0.0423*** (0.0151)	-0.000285 (0.000235)	-0.00233* (0.00120)	0.00761** (0.00344)	-0.00553 (0.0150)
Industry employment	-0.0100 (0.0105)	-0.0167 (0.0340)	0.00563 (0.00517)	0.0120 (0.0162)	-0.000151 (0.000274)	-0.00103 (0.00163)	0.00341 (0.00499)	0.00594 (0.0105)
Unemployment	0.00179 (0.00434)	0.0213** (0.00919)	-0.000988 (0.00270)	0.00796 (0.00874)	-0.000229* (0.000124)	-0.000755 (0.000785)	-0.000627 (0.00204)	0.00193 (0.00361)
Municipality dummies	✓	✓	✓	✓	✓	✓	✓	✓
Year dummies	✓	✓	✓	✓	✓	✓	✓	✓
Full sample	✓		✓		✓		✓	
Restricted sample		✓		✓		✓		✓
Observations	20,888	2582	20,783	2559	20,126	2496	17,103	2122
R-squared	0.510	0.522	0.205	0.227	0.169	0.235	0.521	0.472
Municipalities	1350	182	1350	182	1350	182	1350	182

Note: Clustered standard errors in parenthesis; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

## A6 Granger causality test

In order to perform the Granger causality test (Angrist and Pishke, 2008), a set of dummy variables is created for each year of the treatment period, i.e. the period from the governments' election to their dissolution. Similar dummy variables are also constructed for pre-treatment years, while one additional dummy is created for the whole post-treatment period.

Given that some municipalities have witnessed more than one government dissolutions, the post-treatment period cannot be codified as continuous in these cases. As a result, all municipalities with more than one infiltrated government in the 1998-2013 period have been excluded from the sample for this test. In the case of municipalities having had government dissolutions occurring prior to 1998, the post-treatment dummy takes value 1 for the entire period of analysis.

The following equation is estimated:

$$y_{m,t} = \varphi_m + \tau_t + \sum_{\tau=0}^p \delta_{-\tau} Inf_{m,t-\tau} + \sum_{\tau=1}^q \delta_{+\tau} D_{m,t+\tau} + X_{mt}\beta + \varepsilon_{m,t}$$

Where  $p$  represents the post-treatment effect and  $q$  represent the anticipatory effects.

We re-estimate the model for the main dependent variables (investments for construction and waste management and for municipal police) by including the set of leads and lags dummies, controlling for fixed-time effects and municipality time trends.

The evolution of municipal spending has been assessed up to 2 years before the election of an infiltrated government, during the period in which the infiltrated government was in charge, and in the post-dissolution years. Each point in the figures refers to the estimated coefficient for a given year.

Figures A6.1- A6.3 show that there is no statistical difference in the pre-treatment trends of treatment and control groups in the years before the elections of infiltrated governments. Hence, we can discard the possibility that changes in local public finances (investments or revenues collection) 'Granger-cause' infiltrations.

Interestingly, Figure A6.1 shows a jump in investment for construction and waste management in the first year after elections. This may be due to the fact that the second budget year is also the last one in which governments can promote three-year investment plans of public works (worth

more than 100,000 Euros) and hope to see the end of construction works while still in office. These medium-term investment initiatives are potentially very appealing for the mafia.

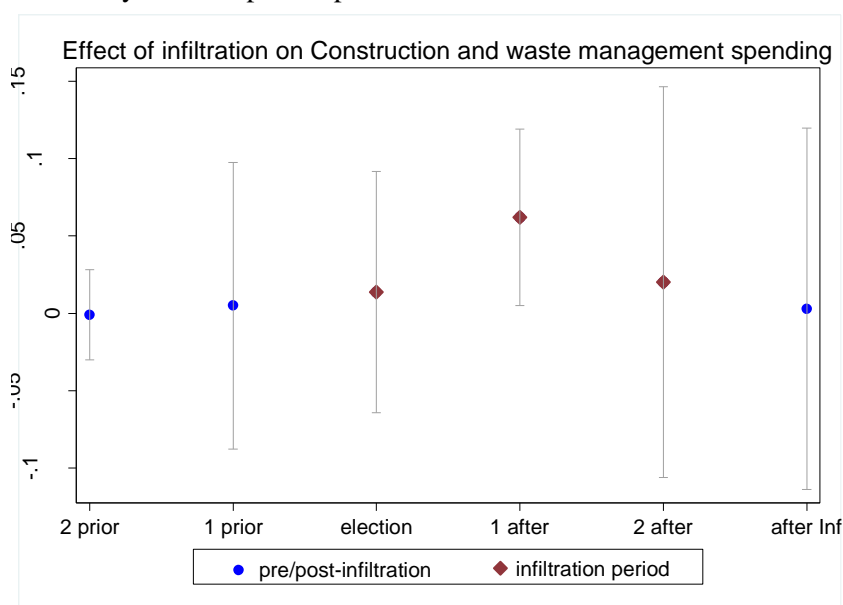
**Table A6.1**

Granger causality test - number of municipalities by year of government

	Years of government before dissolution				
	1 or more	2 or more	3 or more	4 or more	5
Municipalities	117	110	79	49	23

**Figure A6.1**

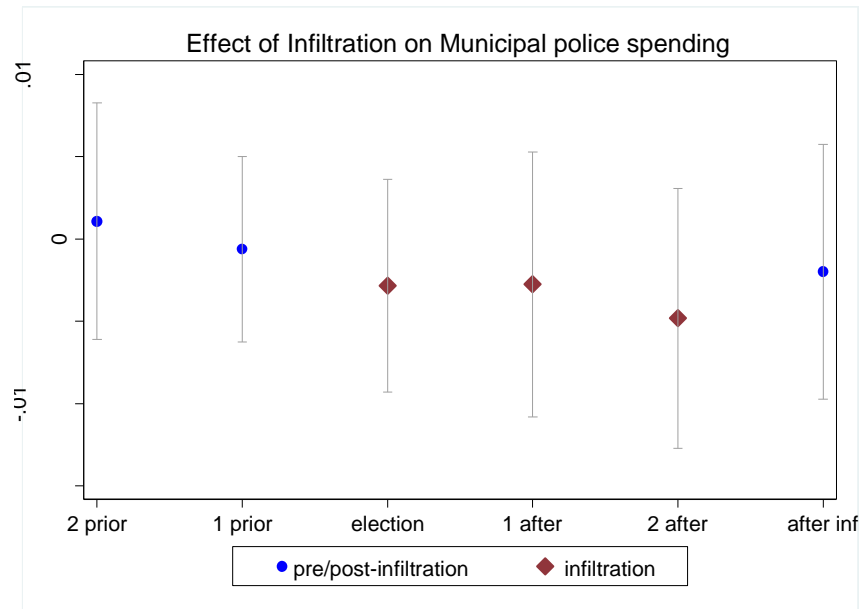
Granger causality test – Capital expenditures for construction and waste management



Note: Granger causality test estimated with 2 leads and 2 lags. Municipalities dissolved more than once dropped from the sample. The estimates for each year include time and municipalities dummies, time trends, controls.

**Figure A6.2**

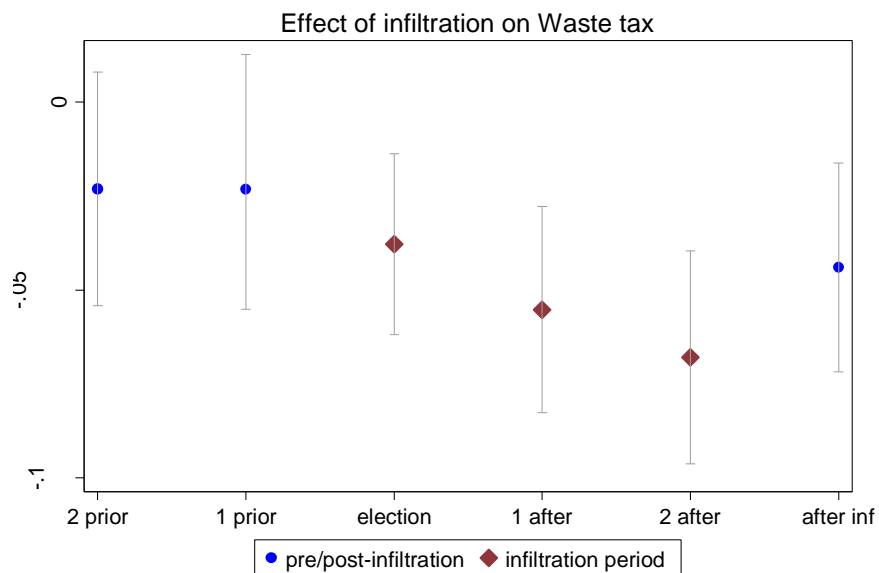
Granger causality test – Capital expenditures for municipal police



Note: Granger causality test estimated with 2 leads and 2 lags. Municipalities dissolved more than once dropped from the sample. The estimates for each year include time and municipalities dummies, time trends, controls.

**Figure A6.3**

Granger causality test – Waste and garbage tax



Note: Granger causality test estimated with 2 leads and 2 lags. Municipalities dissolved more than once dropped from the sample. The estimates for each year include time and municipalities dummies, time trends, controls.

## A7 Robustness check – selection into treatment

**Table A7.1**  
Dissolutions for reasons unrelated to public finances

	Construction and waste management (1)	Dependent variable:	
		Municipal police (2)	Waste tax (3)
Inf	0.0492** (0.0201)	-0.00267** (0.00131)	-0.0172* (0.0101)
Controls	✓	✓	✓
Municipality dummies	✓	✓	✓
Year dummies	✓	✓	✓
Observations	1452	1407	1190
R-squared	0.335	0.239	0.500
Municipalities	182	182	182

Note: Clustered standard errors in parenthesis; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. All municipalities for which the reasons for dissolutions is related to distortions in the balance sheets excluded from sample.



## A8 Placebo – mafia-unrelated dissolutions

**Table A8.1**  
Mafia-unrelated dissolutions and total public spending

	Total spending	Total capital expenditures	Total current expenditures
	(1)	(2)	(3)
Mafia-unrelated dissolutions	-0.0316 (0.0290)	-0.0930 (0.0734)	-0.00563 (0.00671)
Controls	✓	✓	✓
Municipality dummies	✓	✓	✓
Year dummies	✓	✓	✓
Observations	18,306	18,307	18,308
R-squared	0.500	0.347	0.735

Note: Clustered standard errors in parenthesis; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

**Table A8.2**  
Mafia-unrelated dissolutions and key outcome variables

	Dependent variable:		
	Public spending components		Revenues collection
	Construction and waste management	Municipal police	Waste tax
	(1)	(2)	(3)
Mafia-unrelated dissolutions	0.00723 (0.00938)	-0.000692 (0.00071)	-0.00399 (0.00843)
Controls	✓	✓	✓
Municipality dummies	✓	✓	✓
Year dummies	✓	✓	✓
Observations	18,218	17,624	14,981
R-squared	0.292	0.227	0.259

Note: Clustered standard errors in parenthesis; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

## A9 Descriptive statistics – political factors

**Table A9.1**  
Descriptive statistics – political factors

Variable	All municipalities			Infiltration years		
	Obs	Mean	Std. Dev.	Obs	Mean	Std. Dev.
Single candidate	2869	0.023	0.149	437	0.059	0.237
Last mandate	2869	0.203	0.402	437	0.327	0.470
Left party	2869	0.320	0.467	437	0.316	0.465
Centre party	2869	0.082	0.274	437	0.098	0.298
Right party	2869	0.461	0.499	437	0.563	0.497
Civic list	2869	0.510	0.500	437	0.584	0.494

Note: All municipalities: municipalities of Campania, Calabria and Sicily having experienced at least one government dissolution for mafia infiltration. Infiltration years: years classified as infiltration for these municipalities.

## A10 RDD tests

**Table A10.1**  
Balance of covariates

	Dependent variable:								
	Unemployment	Industry employment	Human capital	Population	Total spending	Mafia-related homicides	White ballots	Turnout	Non-valid ballots
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Treatment vs. control	-0.594 (0.795)	0.480 (0.551)	-0.0919 (0.670)	-0.269 (0.364)	-0.0195 (0.0263)	5.45e-06 (0.00233)	0.129 (0.306)	-2.397 (2.428)	0.8 (0.520)
Observations	620	620	620	620	614	620	619	621	619

**McCrary test.** Reliable RDD estimates need to make sure that there is no random sorting around the cutoff. If the density of  $X_{m,t}$  for each municipality is continuous, then the marginal density of  $X_{m,t}$  over the sub-sample of municipalities used for the RDD study should be continuous as well (McCrary, 2008). If, for examples, close races are disproportionally resolved in favour of right wing parties – e.g. via manipulation of electoral outcomes, electoral fraud, etc.– this would challenge the idea that the outcome of these electoral races is as good as random, and indicate some degree of sorting around the threshold.

As shown in Table A10.2 and Figure A10.1, there is no statistically significant jump in the density of observations at the cutoff point for the RDD sample of close elections.

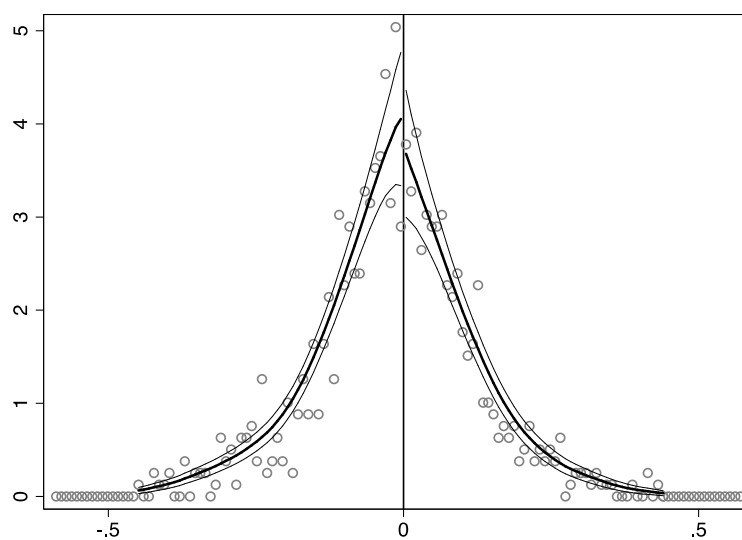
While to a given extent mafia groups are indeed expected to manipulate electoral results by re-directing voting to their preferred candidates, this test shows that this does not seem to be the case in our RDD sample. One possible reason may be that, if the mafia actively distorts electoral results, this is unlikely to bring to a victory of the preferred party by a small margin. Electoral manipulations normally come with abnormal numbers of non-valid or white ballots. As a descriptive indication that electoral manipulation is not occurring in the RDD sample, the average non-valid ballots in infiltrated municipalities won by the left is 4.4% whereas it is 3.8% when the right-wing party wins and the government is infiltrated. The number of white ballots is respectively 1.6% and 1.4%.

**Table A10.2**  
Test for sorting around cutoff

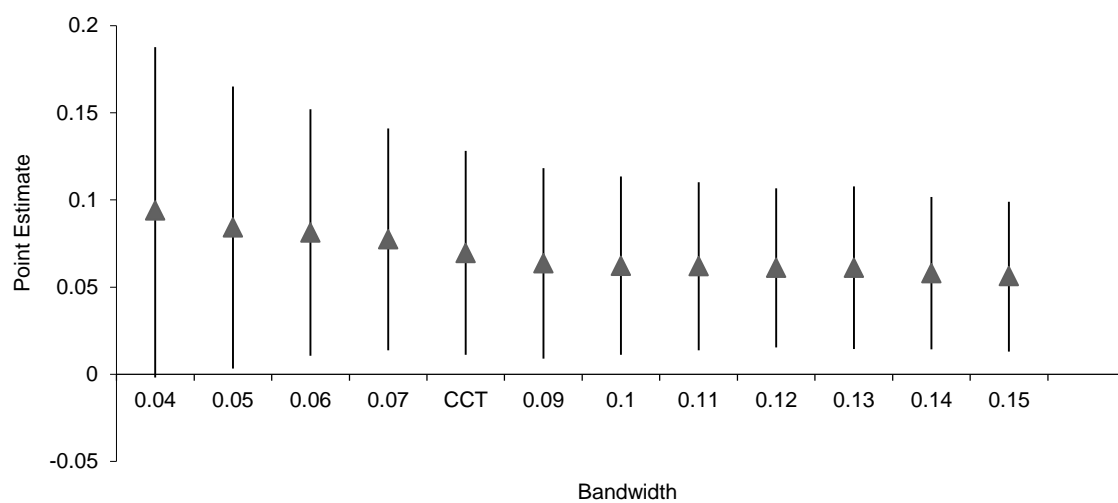
	t	P> t
Conventional	-0.9782	0.3280
Bias-corrected	-0.3842	0.7008
Robust	-0.3252	0.7450
Bandwidth	mserd	
Polynomial	Quadratic	
Observations	594	

Note: Robust standard errors in parenthesis; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

**Figure A10.1**  
Test for sorting around cutoff

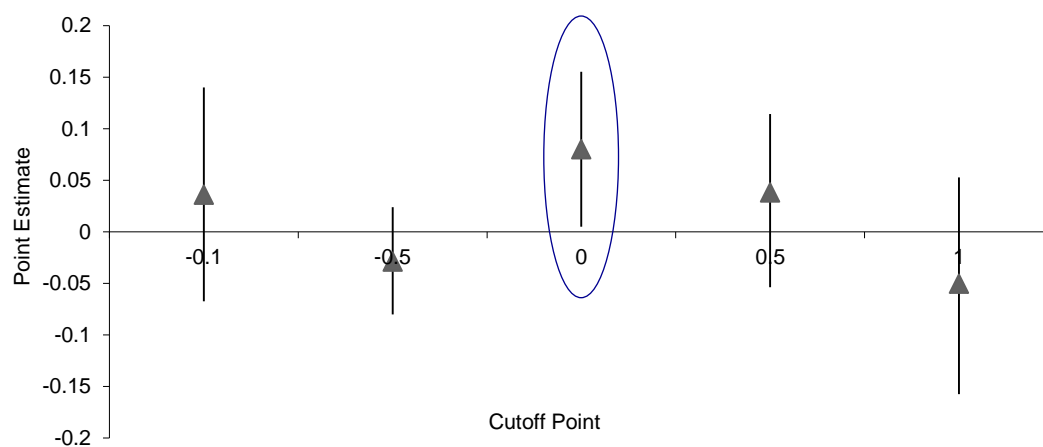


**Figure A10.2**  
Robustness checks – Moving bandwidths



Note: The line extends from the lower bound to the upper bound. 90% confidence interval. CCT: optimal bandwidth.

**Figure A10.3**  
Robustness checks – point estimates at different cutoff points



Note: The line extends from the lower bound to the upper bound. 90% confidence interval.