

# Organized Crime, Public Procurement, and Firms

Elena Stella

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## Abstract

This paper examines the impact of organized crime's ability to infiltrate firms on local economic activity. Focusing on Italy, I develop a novel index to measure the presence of infiltrated firms in the public procurement market. I then investigate the effects of the 2013 Antimafia Certification Law, a nationwide policy designed to disincentivize infiltrated firms from participating in public tenders. By leveraging pre-policy local market infiltration and exploiting this policy shock, I analyze firm dynamics and procurement efficiency, focusing on project delays and discounts on posted prices. Preliminary results suggest that the policy was successful in altering the incentives for infiltrated firms, as the probability of these firms winning procurement contracts drops dramatically after 2013. Moderately infiltrated municipalities experience increased firm entry, higher winning discounts on procurement contracts, and greater firm dynamism post-reform. These effects are attenuated or even reversed in municipalities with extremely high rates of infiltration.

## 1 Introduction

Revenues from organized crime activities have escalated to an estimated 2.1 trillion USD, with approximately 70% of these proceeds being laundered (UNODC, 2011). This surge highlights the increasing ability of organized crime groups to infiltrate the legal economy and mimic legitimate businesses. Such entrenchment complicates efforts to detect and combat organized crime effectively, allowing these organizations to impose escalating economic and social costs. They undermine innovation and competition (Slutzky and Zeume, 2018; Fenizia and Saggio, 2024), engage in illegal activities (Sviatschi, 2022; Blattman et al., 2021), and hinder economic growth (Pinotti, 2015a,b).

Extensive literature has documented the origin of organized crime (Acemoglu et al., 2019; Bandiera, 2003; Alesina et al., 2018; Sviatschi, 2020), and more recent work has

delved into how it spreads in the economy (Le Moglie and Sorrenti, 2022; Daniele and Dipoppa, 2022; Mirenda et al., 2022; Arellano-Bover et al., 2024). Additionally, research has focused on how governments can reassess authority through aggressive crackdowns targeted at infiltrated local governments (Chen et al., 2021; Fenizia and Saggio, 2024).

This paper examines the impact of organized crime on local economic growth, procurement market dynamics, and firm performance by studying a prominent reform that targets organized crime revenues: the Italian Antimafia Information Law. In 2013, this policy was amended to significantly increase legality disclosure requirements for firms participating in public procurement contracts. Among other things, the revised policy required firms bidding on public tenders to be vetted by the local police for any connections to organized crime. Firms that successfully pass this investigation are registered on public registries maintained by provincial police offices (hereafter white lists).

To address my research question, I combine novel firm-level data on provincial white lists (2013-2022) with comprehensive public procurement and balance sheet data (2009-2022). First, I develop an novel measure of municipal infiltration by organized crime. This involves identifying pre-2013 incumbents in local procurement markets and labeling them as infiltrated if they never appear in provincial white lists post-2013<sup>1</sup>. I then calculate the pre-2013 share of procurement contracts awarded to these infiltrated incumbents in each municipality to establish baseline levels of organized crime infiltration in municipal procurement markets. Second, I leverage this index in a difference-in-difference research design, exploiting the fact that the 2013 reform *de facto* impacts municipalities with a high baseline share of infiltrated winners. I exploit variation in treatment intensity and label treated municipalities as those with a higher than 50% share of infiltrated incumbents in the pre-period. I also propose a quantile regression to account for more nuanced treatment dynamics.

I focus on three sets of outcomes. First, I analyze local economic growth by examining the stock of active firms, entry rates, and the number of procurement contracts. The initial treatment definition, where the infiltration index is higher than 50%, shows positive but not statistically significant coefficients. However, quantile regression reveals substantial heterogeneity across the infiltration index distribution. Municipalities with moderate levels of infiltration exhibit significant positive increases in the stock of firms, entry rates, and tender dynamics in the post-period. Conversely, these effects are null or even negative in

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<sup>1</sup> Currently, I cannot distinguish between firms choosing not to undergo police investigation and those being investigated and denied registration.

highly infiltrated municipalities. Second, I investigate changes in the local procurement market structure by examining the composition of winners. In highly infiltrated municipalities, there is a higher proportion of winning firms incorporated outside the province, suggesting an increased reliance on external actors for public procurement. Additionally, the number of tenders per firm significantly decreases, indicating that infiltrated markets become less concentrated. Finally, I focus on the characteristics and execution of procurement contracts. Estimates from the binary treatment specification suggest that the reform does not affect time overruns and subcontracting probabilities. However, treated municipalities experience lower prices (higher winning discounts) in the post-period. This result, again, conceals substantial heterogeneity: municipalities with an infiltration index higher than 75% experience doubled average delays in the post-period as well as higher prices (lower winning discounts).

## 1.1 Literature

This paper contributes to three strands of literature. First, it adds to the study of corruption and organized crime crackdowns on economic activity. For example, [Szerman \(2023\)](#) finds negative long-term effects of corporate debarment on employees. In [Colonnelli and Prem \(2022\)](#), the authors show negative impacts of anti-corruption crackdowns on firm performance. Similarly, [Fenizia and Saggio \(2024\)](#) reveals long-run positive effects of dismissing mafia-infiltrated city councils on competition and firm dynamics.

This paper complements this literature in two ways. First, it develops a novel measure leveraging firms' revealed preferences for voluntary police screenings, rather than relying solely on government efforts to re-exert control over areas dominated by criminal organizations. This approach provides insight into how firms' proactive engagement with law enforcement shapes economic growth in markets historically targeted by organized crime, such as public procurement. Second, the rich variation from my index uncovers highly heterogeneous effects of organized crime on economic growth. Areas with low to moderate infiltration benefit significantly from the exit of infiltrated firms, while highly infiltrated localities see little to no positive impact, and sometimes negative effects.

Second, this paper fits into the literature that explores how and when organized crime infiltrates firms and the effects on their economic performance. In [Mirenda et al. \(2022\)](#), the authors proxy infiltration by examining mafia-sounding names on boards of directors of limited liability companies. [Arellano-Bover et al. \(2024\)](#) identifies criminal firms using Financial Intelligence data based on suspicious transactions. My paper adds to this litera-

ture by providing empirical evidence of heterogeneous effects of organized crime using a novel dataset that includes white-listed firms of all sizes. Notably, previous studies have often overlooked small businesses due to the lack of detailed information on their ownership or activities, making it challenging to assess their infiltration status.

Third, this paper connects to the literature that studies corruption in public procurement settings. In [Chen \(2024\)](#) and [Decarolis et al. \(2020\)](#), the authors investigate the effects of public officials' corruption on procurement dynamics, contract characteristics, and execution. I add to this literature by examining the influence of organized crime, specifically focusing on the role of infiltrated firms in shaping contract characteristics (such as prices) and efficiency (such as time overruns).

## 2 Institutional Background

### 2.1 The Antimafia Information Law

The Antimafia Information Law, part of a broader framework of anti-corruption measures by the Italian state, represents a comprehensive legislative effort to curb organized crime's influence on the economy. This law originated from the heightened need for anti-mafia legislation in the 1990s, following a series of high-profile mafia-related assassinations. Initially enacted in 1965 and subsequently updated in 1994 and 1998, the law primarily aims to prevent mafia-linked firms from accessing government subsidies and procurement contracts.

In 2013, the Italian government introduced significant amendments to this legislative framework, particularly through the [D.P.C.M. 18 April 2013 decree](#)<sup>2</sup>. In 2013, both the scope and effectiveness of controls were expanded. Police investigative tools were enhanced, extending checks to friends and family members. The law improved by harmonizing the roles of contracting authorities and police forces, and by creating a centralized dataset of mafia-related information.

Among other provisions, the decree imposed a particularly strict screening and disclosure regime for firms operating in sectors with high risk of mafia infiltration. It mandated the establishment and continuous updating of a "white list" by the 103 local police offices (*Prefettura*) across Italy. Firms seeking to participate in public tenders must now enroll in

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<sup>2</sup> [Law 6 November 2012, no. 190](#)

this list, confirming their immunity from mafia infiltration.

## 2.2 The White List Provision

The white list provision, central to the 2013 decree, substantially strengthened the existing legislation. It represents an obligatory requirement for participation in public procurement, ensuring that firms in sectors with a high risk of mafia infiltration adhere to strict moral and ethical standards. High-risk sectors include construction, waste management, transportation, catering, and environmental services, among others.<sup>3</sup>

In order to enhance transparency in public procurement the legislator envisioned a thorough vetting process. To enter the white list, firms must submit an application to the local police office in the province where the firm's legal headquarters are located.

Each local police office then conducts a rigorous investigation into the firm. Police verifies the absence of causes for exclusion, suspension, or prohibition as per [Article 67 of Anti-Mafia Code](#) , and any attempts of mafia infiltration as per [Article 84, comma 3](#), of the same code.

This investigation includes reviewing the firm's accounts and history of relationships with contracting authorities, as well as on-site inspections, when deemed necessary. During these inspections, police officers interview managers, employees, and other relevant individuals, including family members, who might be aware of or involved in any infiltration activities.

Successful firms are listed on the local police office's website, enabling them to bid for public contracts. If evidence of mafia infiltration is found, the application is rejected, and the firm is notified. Upon successful completion of the police investigation, the white list registration lasts one year. Firms must declare their intent to remain on the list once the year expires. Additionally, firms can be removed from the list at any time if substantial evidence of mafia affiliation emerges.

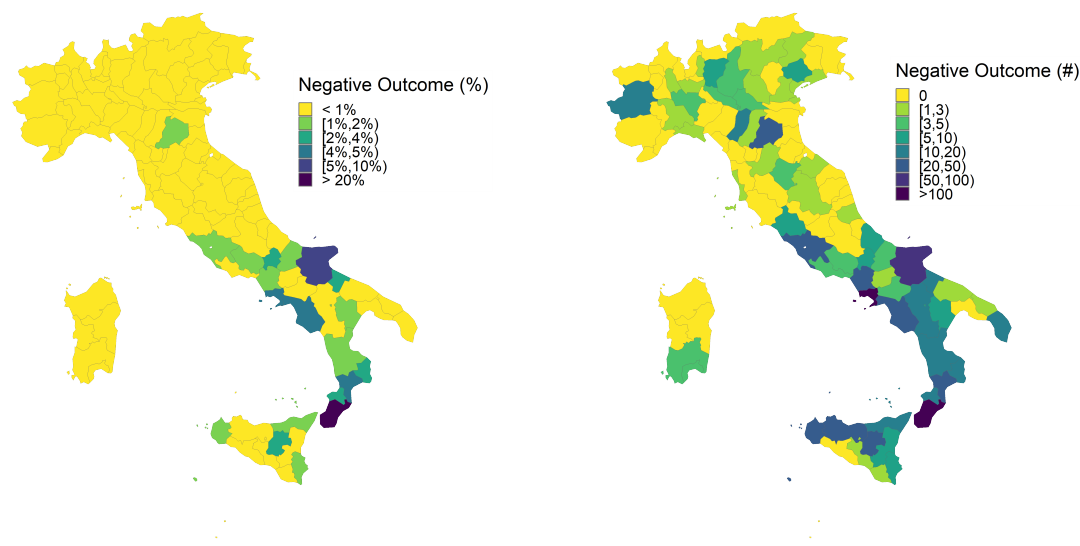
Economic operators in high-risk sectors must possess white list registration or have applied for it at the time of their bid submission, with the contracting authority verifying compliance<sup>4</sup>. This ensures that the firms directly involved in high-risk activities meet the required standards, thereby minimizing the risk of mafia infiltration.

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<sup>3</sup> The complete list is reported in [Law 6 November 2012, no. 190](#). Firms operating in the construction sector, which are the object of the present analysis, represent around 60% of total firms in the White List.

<sup>4</sup> [ANAC Deliberation 294/2023](#)

Figure 1: PROVINCE LEVEL OUTCOMES OF POLICE INVESTIGATIONS 2020



(a) % of Investigations that resulted in negative outcomes (firms were classified as infiltrated) (b) Number of Investigations that resulted in negative outcomes (firms were classified as infiltrated)

The rigorous nature of these investigations is reflected in the patterns of denials, as shown in Figures 2(a) and 2(b), which highlight the percentage and number of police investigations that led to negative outcomes, classifying firms as infiltrated.

### 3 Data

My analysis draws from a number of different data sources, which I describe below.

**WHITE LIST AND DENIALS** My main data source is the complete list of applicants and recipients of white list registration, which I manually collected and compiled for 18 provincial police offices (Figure 3(a)).<sup>5</sup> This novel sample covers over 20,000 firms from 2013 to 2022. Each year, the police offices provided two lists: firms applying to enter the white list and firms that successfully passed the police investigation (Figure 3(b)). Each list includes the firm's name, fiscal code, headquarters, and sector (Figure 3(c)). Notably, the police offices did not provide information on firms classified as infiltrated. However, province-level data on infiltrated firms was made available for the years 2019 to 2022 (Fig-

<sup>5</sup> I sent 103 FOIA requests to each Italian provincial police office. 20 provinces replied, and 18 provided complete enough data for analysis.

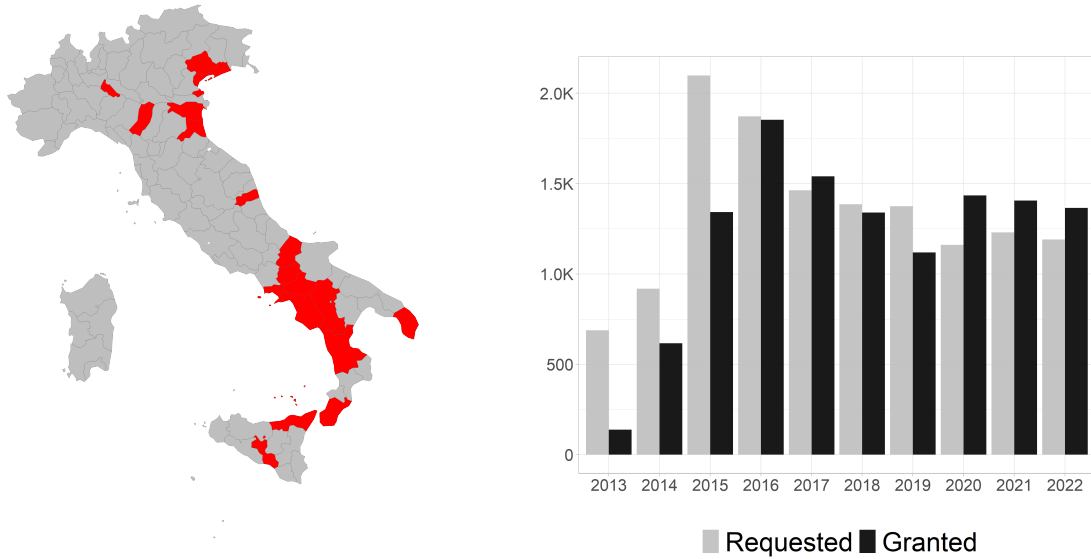
ures 2(a) and 2(b)).

**BALANCE SHEET** I use data on firms balance sheet and ownership structure. These data are made available from the Bureau Van Dijk for the years between 2009 and 2013, and AIDA for the years between 2013 and 2022. I match the firm identifiers to those in the white list and balance sheet data.

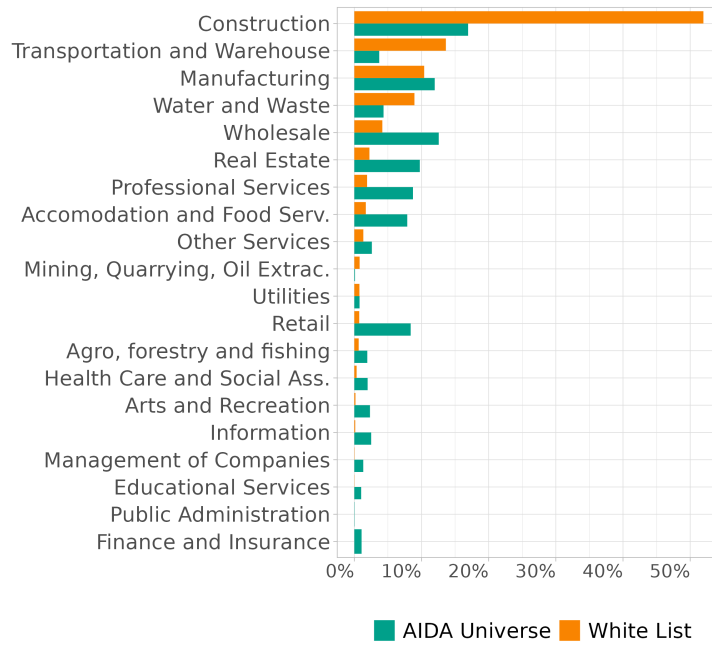
**PUBLIC PROCUREMENT** I use data on public procurement contracts from 2009 to 2022, collected by the Italian Authority for Public Contracts ([ANAC](#)). This dataset includes all public works contracts with a reservation price above 40,000 euros. For my analysis, I focus on construction within the OG (*Opere Generali*) categories, which cover a wide range of activities for public buildings and infrastructure, such as civic buildings (OG01) and transportation infrastructure like roads and bridges (OG03), among others. These categories together account for more than half of all contracts by both number and total expenditure.

For each contract, I have detailed information about the contracting phase, including the start and end dates of the bidding process, the type of contracting authority, the auction procedure, the selection criteria, the number of bidders, and the identity of the winning bidder. Winners are identified through their business ID, allowing me to merge this information with the white list and balance sheet data.

Figure 2: WHITE LIST SAMPLE



(a) Local police offices that answered the FOIA re-quest (b) Number of applicant and recipient firms by year



(c) Sectoral composition of firms on the white list compared to the entire population of Italian firms



## 4 Empirical Strategy

In this section, I discuss the construction of a novel index of Mafia infiltration at the municipality level and how I operationalize this measure in my econometric design.

### 4.1 Local Measure of Mafia Infiltration

Existing measures of Mafia infiltration mostly rely on extreme events such as high-profile mafia arrests, and local violence (Mafia Presence Index – [Transcrime](#)), violence against politicians ([Pulejo and Querubín \(2023\)](#)), or extreme cases of political corruption (dismissal of city councils in [Fenizia and Saggio \(2024\)](#)).

While insightful, these measures often struggle to capture the more concealed and seemingly legitimate aspects of organized crime activities and their impacts on the legal economy. To investigate mafia infiltration into firms and its ability to launder money into the legal economy, researchers have taken more indirect approaches, such as examining board members with mafia-sounding names ([Mirenda et al. \(2022\)](#)) or identifying firms engaging in suspicious transactions ([Arellano-Bover et al. \(2024\)](#)).

The index I develop falls into this second category of measures and combines public procurement and white list data. It identifies potentially infiltrated firms based on their revealed preference for (not) undergoing police investigations<sup>6</sup>, conditional on their pre-policy activity in local public procurement markets. My index improves upon existing measures in two key ways. First, it accounts for organized crime’s ability to control businesses without directly employing family members. Second, it allows for the classification of small and medium-sized firms, which are often overlooked in the economics literature due to the lack of detailed accounting and ownership information.

The index construction follows three steps:

1. I define the relevant market for public procurement as the municipality, and identify incumbents as firms that won at least one public contract in the years prior the reform (2009-2013).
2. I label an incumbent firm as infiltrated if it never applies<sup>7</sup> to the provincial white list. Symmetrically, non infiltrated incumbents are firms that enter the white list

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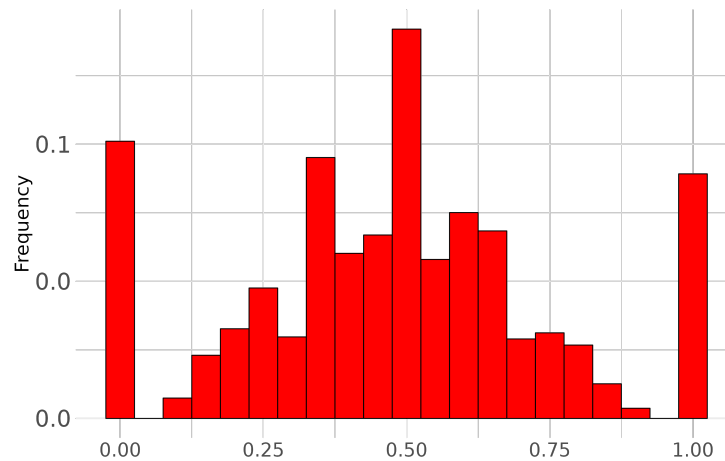
<sup>6</sup> As of now, the infiltration measure does not distinguish between firms choosing not to undergo police investigations and firms that were denied registration in the white list.

<sup>7</sup> Or is rejected. The absence of information on investigation that resulted in a negative outcome prevents me from distinguishing between these two cases

after 2013. Figure 5 reports the percentage of tenders won by infiltrated (in red) and non infiltrated (in blue) incumbents for the relevant years.

3. The index is finally constructed for each municipality by computing the percentage of public contracts won by infiltrated firms in the pre-period.

Figure 3: **MAFIA INFILTRATION INDEX.** Percentage frequency of tenders won by infiltrated firms in the pre-period (2009-2013)



The percentage distribution of the resulting indicator (Figure 3) demonstrates significant heterogeneity. In 10% of municipalities, infiltrated firms won no public contracts in the pre-period, whereas in approximately 9% of municipalities, 100% of public contracts were won by infiltrated incumbents. For intermediate percentages of infiltrated firms' wins, the distribution appears normally shaped.

I am currently working on refining this methodology by employing a Random Forest model that utilizes pre-period information on public procurement outcomes, firms' balance sheets, and municipalities' characteristics to predict firms' participation in public procurement. This more accurate index will provide each firm in my sample with a probability of participating in public procurement in the post-period, based on their pre-period characteristics. Specifically, the model will analyze pre-policy data to identify patterns and relationships that indicate a firm's likelihood of bidding on public tenders. By generating a probability score for each firm, I can better assess their predicted involvement in procurement activities in the absence of the policy. I will then combine this more nuanced information with white lists to label infiltrated firms.

## 4.2 Research Design

I use a difference-in-differences (DiD) research design to study the effects of the 2013 Antimafia Information Law on public procurement, municipality and firm level outcomes in Italy. My design compares the change in outcomes of interest before and after the introduction of the law, between municipalities with varying exposure to it. I base my measure of exposure on the local measure of Mafia infiltration that I developed in section 4.1. Intuitively, while the law applies de jure to all municipalities, de facto it represents a sudden shock only for those with a higher presence of mafia-infiltrated firms in the pre-reform period, as they had to adjust their procurement processes and firm participation to comply with the new regulations.

I address the potential confounding effect of differences in observable characteristics, as well as unobservable time-invariant differences, by including municipality fixed effects in all my regressions. I also include province by year fixed effects to control for province-specific shocks and trends over time. Standard errors are clustered at the municipality level to account for potential autocorrelation within municipalities over time.

My main econometric specifications are as follows:

$$Y_{mt} = \alpha_m + \gamma_{pt} + \beta \text{High}_m \times \text{Post}_t + \epsilon_{mt} \quad (1)$$

$$Y_{mt} = \alpha_m + \gamma_{pt} + \beta_0(\text{Medium}_m \times \text{Post}_t) + \beta_1(\text{High}_m \times \text{Post}_t) + \beta_2(\text{Very High}_m \times \text{Post}_t) + \epsilon_{mt} \quad (2)$$

In equations 1 and 2,  $Y_{mt}$  represents the outcome for municipality  $i$  in year  $t$ .  $\alpha_m$  and  $\gamma_{pt}$  are municipality and province-year fixed effects, respectively.  $\text{Post}_t$  takes the value 1 after 2013. Dummies  $\text{Medium}_m$ ,  $\text{High}_m$ , and  $\text{Very High}_m$  represent the treatment intensity for municipality  $m$ .

In the first specification (1), the treatment intensity is represented by a single dummy variable  $\text{High}_m$ , which takes the value 1 for municipalities where infiltrated firms won more than 50% of tenders in the pre-period. The interaction coefficient  $\beta$  captures the differential effect of the policy in municipalities with high mafia infiltration compared to those with low or no infiltration.

In the second specification (2), the treatment intensity is broken down into four categories:  $\text{Medium}_m$ ,  $\text{High}_m$ , and  $\text{Very High}_m$ , with the omitted category being  $\text{Low}_m$ . The

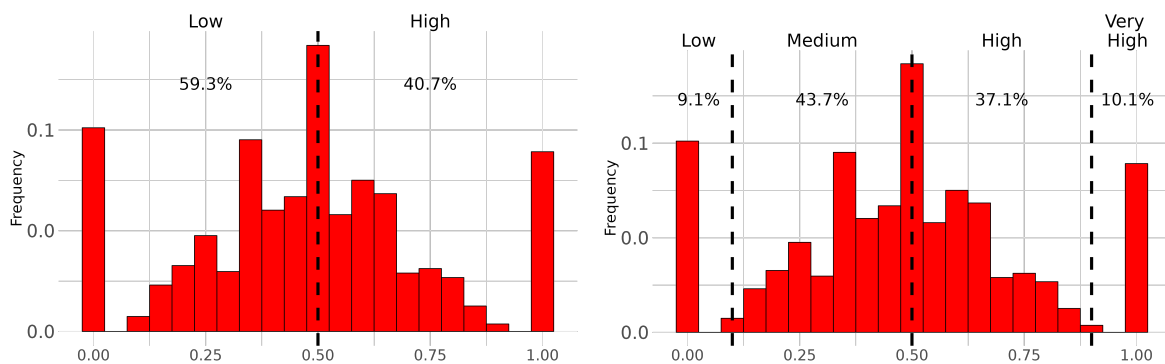
omitted category identifies municipalities with a level of mafia-infiltrated winners lower than 10% in the pre-period. Coefficients  $\beta_0, \beta_1,$  and  $\beta_2$  represent the differential effect of the policy in medium, high, and very highly infiltrated municipalities with respect to the omitted category.

I also estimate a dynamic version of equation 1

$$Y_{mt} = \alpha_m + \gamma_{pt} + \beta_k \sum_{\substack{k=09 \\ k \neq 13}}^{22} (\text{High}_m \times \mathbb{1}\{k = t\}) + \epsilon_{mt} \quad (3)$$

Figures 5(a) and 5(b) map the discrete treatment categories in equations 1 and 2 onto the distribution of the mafia infiltration index.

Figure 4: MAFIA INFILTRATION INDEX AND TREATMENT INTENSITY



(a) Discrete treatment categories from equation 1 (b) Discrete treatment categories from equation 2

*Note:* Each panel shows the distribution of municipalities based on the percentage of tenders won by infiltrated firms: (5(a)) Displays discrete treatment categories used in equation 1, where municipalities with mafia infiltration index higher than 50% in the pre-period are labeled as treated. (5(b)) Shows discrete treatment categories used in equation 2, where municipalities are divided into low (less than 10%), medium (between 10% and 50%), high (between 50% and 90%), and very high (above 90%) levels of infiltration. Percentages reported within each picture account for the percentage of observations that fall within each treatment category.

## 5 Results

### 5.1 Raw Data

Figures 5, 6 and 7 provide visual evidence on the impact of the Antimafia Information Law on infiltrated incumbents ability to win public procurement contracts.

Figure 5 reports the percentage of tenders won by infiltrated (red) and non-infiltrated (blue) incumbents. It shows a sharp decrease in the percentage of tenders won by infiltrated firms, suggesting that the policy has a significant impact.

Figure 6 plots the distribution of the Mafia infiltration index in selected years before and after the introduction of the law. Panels 7(a)–7(e) show that a significant proportion of municipalities have high levels of mafia-infiltrated winners before the introduction of the law. By 2014, shortly after the reform, panel 7(f) shows that the distribution starts to compress and shifts to the left, indicating a decrease in the proportion of municipalities with high mafia infiltration. Panels 7(g)–7(m) demonstrate that the reduction in mafia infiltration continues and remains substantial for the rest of the sample period. This descriptive evidence is reassuring, as it suggests that the observed changes are not driven by mean reversion nor artifacts of the econometric analysis.

Figure 7 conveys similar information, while also highlighting the significant geographical heterogeneity in the index within both northern and southern provinces under analysis.

Figure 5: TENDERS WON BY (NON) INFILTRATED INCUMBENTS.

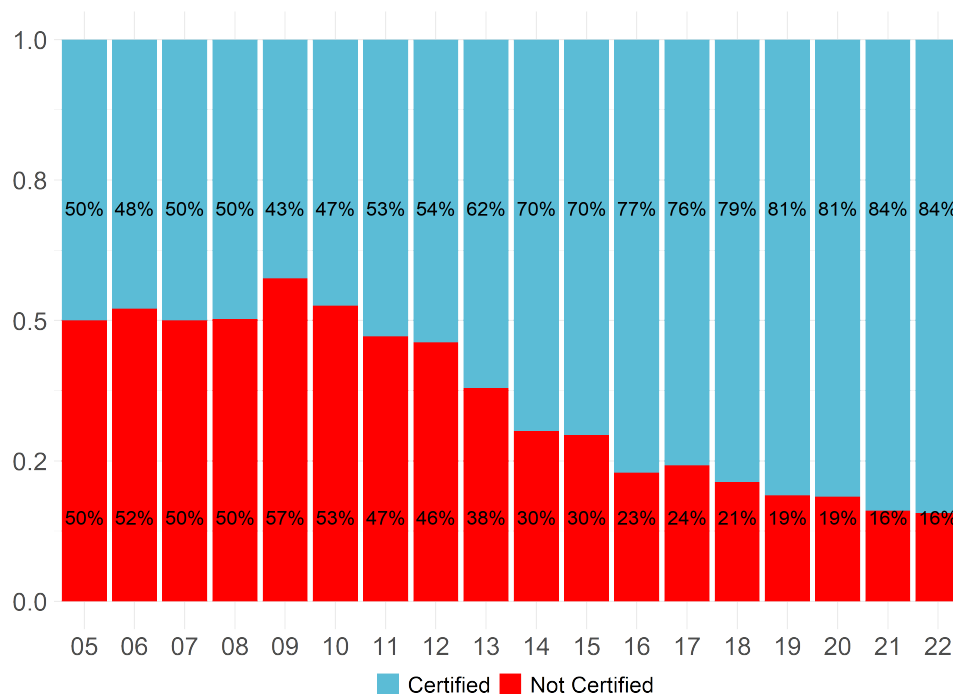
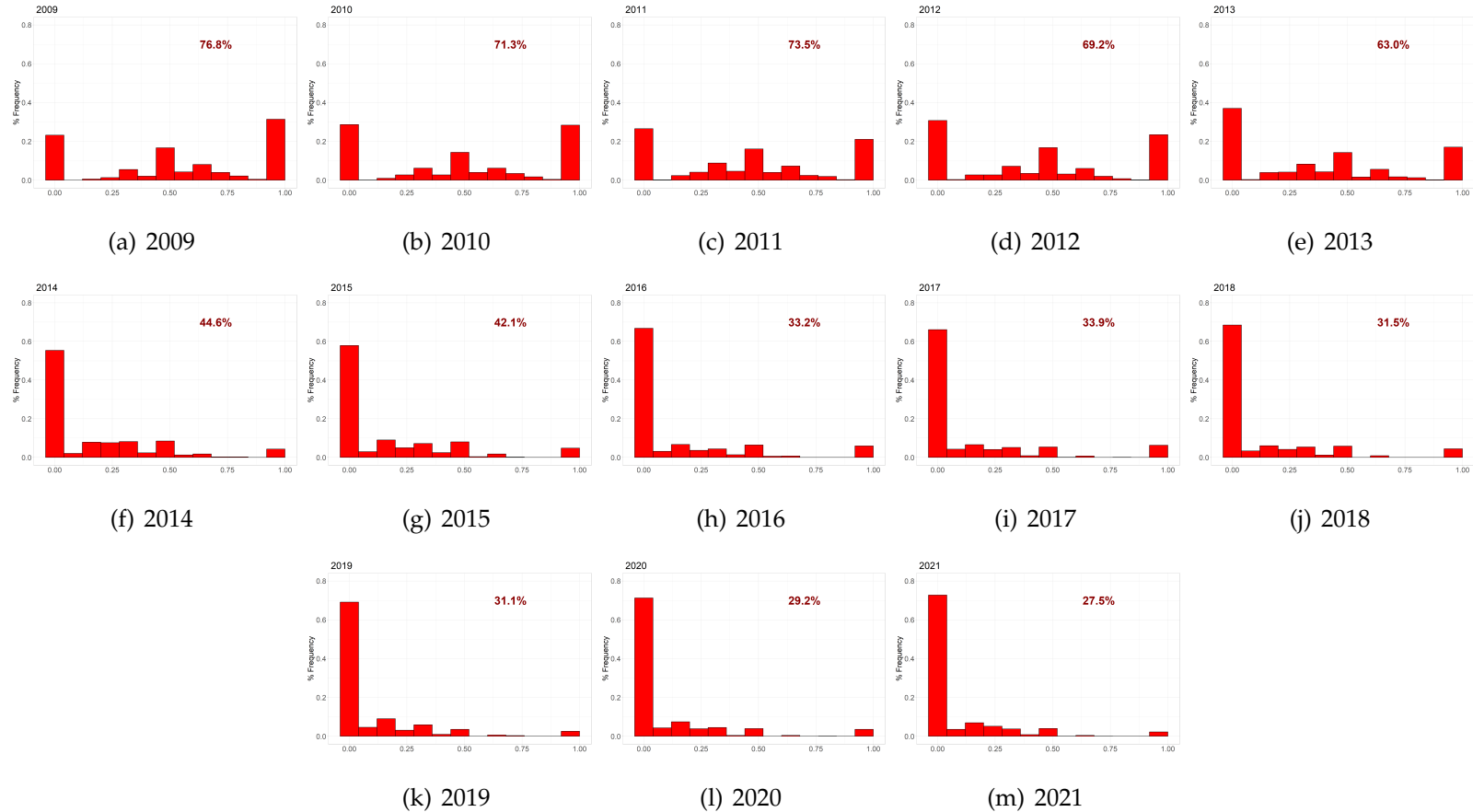
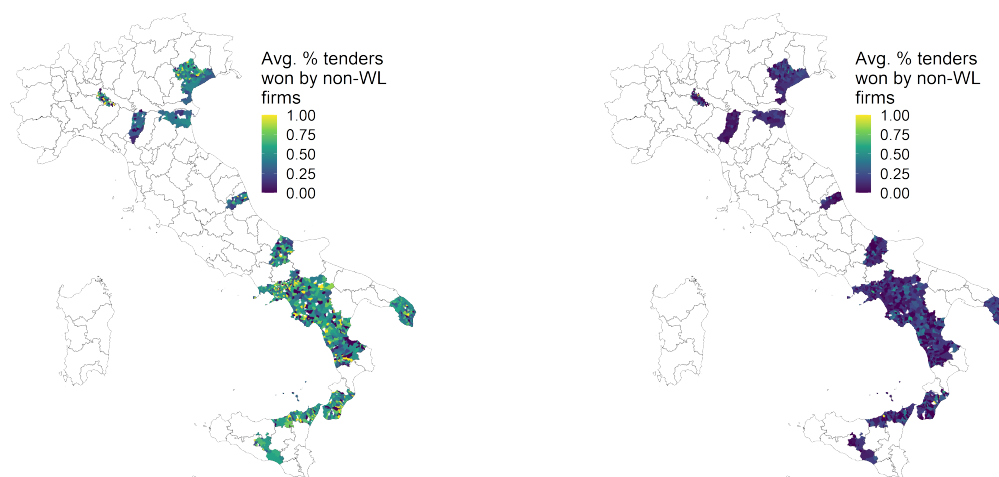


Figure 6: MAFIA INFILTRATION INDEX. Percentage frequency of tenders won by infiltrated firms in each municipality over the years



*Note:* Each panel shows the percentage of tenders won by infiltrated firms for the year indicated in the caption. Each vertical bar represents the percentage of municipalities (y-axis) in which infiltrated firms won a given percentage (x-axis) of tenders. Numbers in bold red within each panel indicate the percentage of municipalities where infiltrated firms won at least one tender in that specific year.

Figure 7: MAFIA INFILTRATION INDEX: PRE AND POST PERIOD



(a) % Tenders won in each municipality by infiltrated firms in the pre-period (b) % Tenders won in each municipality by infiltrated firms in the post-period

## 5.2 Municipality Outcomes

This section explores municipality-level outcomes. The first step is to assess the effectiveness of the 2013 policy in deterring infiltrated firms from participating in public procurement. Figure 8 reports coefficients from regression 3, where the outcome variable is the municipality-level share of public contracts won by firms that never enter the provincial white lists. The 2013 policy reduced the percentage of contracts won by infiltrated firms in highly infiltrated municipalities by up to 40% compared to less infiltrated ones. These estimates suggest that the policy was effectively enforced and its effects were long-lasting.

Table 1 presents estimates from equations 1 and 2, focusing on firm dynamics. The odd-numbered columns show a non-statistically significant impact on the stock of firms, entry rates, and number of tenders. However, estimates from equation 2, reported in the even-numbered columns, reveal substantial heterogeneity. For moderate and high levels of infiltration, the policy led to increases in the stock of firms by 25% to 35% of the sample average. Similarly, the number of new firms increased by 18% to 26% of the sample average. The tenders dynamics also improved considerably in the post-policy period, with the number of tenders rising by around 30% of the mean value. In contrast, the 2013 policy had a null or even negative impact on extremely infiltrated localities, particularly in

tender dynamics.

Table 2 reports results from equations 1 and 2, focusing on the composition of winners. Columns (1) and (2) suggest that the 2013 policy reduced market concentration in highly infiltrated municipalities, as the number of tenders per firm decreased by 30% of the sample mean. Columns (3) to (6) indicate that, particularly in very highly infiltrated municipalities, local governments had to rely on out-of-province and out-of-municipality actors to carry out public procurement activities. Columns (7) and (8) highlight the heterogeneous effect of the policy on firm entry into the procurement market. In moderately infiltrated municipalities, the number of first-time winners decreases by 3.5 percentage points in the post-policy period. This resonates with the presence of a significant stock of good incumbents in these markets, who can absorb the contracts previously won by infiltrated firms, at least in the short run. Conversely, in extremely infiltrated municipalities, the percentage of contracts awarded to first-time winners increases by 4 percentage points in the post-policy period. This suggests that the number of non-infiltrated incumbents in these areas is too low to meet procurement needs.

Finally, Table 3 illustrates the effects on contract characteristics and time overruns. The results from regressions 1 and 2 present differing narratives. Estimates from model 1, reported in the odd-numbered columns, indicate no significant effects of the reform on delays and subcontracting probability in municipalities with an infiltration index above 50%. However, estimates in column (3) reveal a statistically significant positive impact of the 2013 reform on procurement discounts. Conversely, the even-numbered columns in Table 3 provide estimates from equation 2, offering a more nuanced perspective. Specifically, the 2013 reform results in a statistically significant increase in delays for municipalities where the infiltration index exceeds 75%. Furthermore, column (4) suggests that procurement prices also increase in these municipalities.



Figure 8: ENFORCEMENT OF WHITE LIST POLICY. Probability of non-white listed firms winning public procurement contract. Coefficients of regression 3.

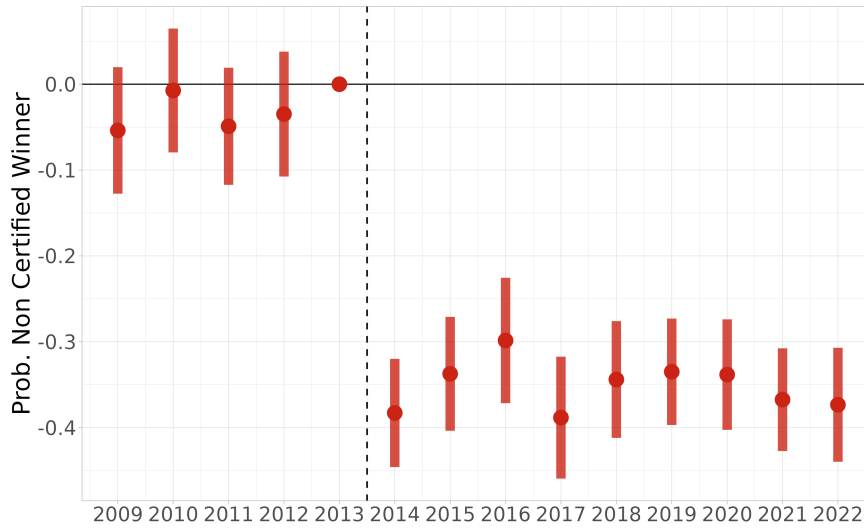


Table 1: ORGANIZED CRIME AND FIRMS DYNAMICS

	Total Firms		New Firms		Tenders	
	(1)	(2)	(3)	(4)	(5)	(6)
Post $\times \geq 50\%$	9.331		0.6579		0.0276	
	(10.83)		(0.6637)		(0.4690)	
Post $\times$ Medium		27.58***		1.181***		0.9574***
		(6.962)		(0.4057)		(0.3580)
Post $\times$ High		37.17***		1.920***		1.054**
		(9.429)		(0.5631)		(0.4130)
Post $\times$ Very High		-2.600		-0.2048		-0.7003**
		(5.477)		(0.3252)		(0.3033)
R <sup>2</sup>	0.92	0.92	0.95	0.95	0.80	0.80
Obs	18,214	18,214	18,214	18,214	18,436	18,436
Mean Y	109.84	109.84	7.13	7.13	3.10	3.10
Muni.	✓	✓	✓	✓	✓	✓
Year $\times$ Prov.	✓	✓	✓	✓	✓	✓

Note: \* $p < 0.1$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$ . Standard Errors are clustered at the municipality level. Columns (1), (3), and (5) report estimates of equation 1. Columns (2), (4), and (6) report estimates of equation 2. *Total Firms* is the stock of firms in each municipality-year. *New Firms* is the number of newly incorporated firms in each municipality-year. *Tenders* is the number of tenders by municipality-year.

Table 2: ORGANIZED CRIME AND THE COMPOSITION OF PUBLIC PROCUREMENT WINNERS

	Tenders per Firm		Out Prov. Winner		Out Muni. Winner		First Time Winner	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Post $\times$ $\geq$ 50%	-0.0103***		0.0333**		0.0155**		0.0098	
	(0.0037)		(0.0135)		(0.0064)		(0.0089)	
Post $\times$ Medium		0.0010		0.0106		-0.0142		-0.0344*
		(0.0085)		(0.0329)		(0.0152)		(0.0177)
Post $\times$ High		-0.0084		0.0372		0.0014		-0.0255
		(0.0088)		(0.0325)		(0.0150)		(0.0170)
Post $\times$ Very High		-0.0156		0.1058**		0.0230		0.0416**
		(0.0109)		(0.0494)		(0.0188)		(0.0206)
R <sup>2</sup>	0.45	0.45	0.32	0.32	0.25	0.25	0.27	0.27
Obs.	18,436	18,436	13,038	13,038	13,038	13,038	13,038	13,038
Mean Y	0.034	0.034	0.634	0.634	0.943	0.943	0.854	0.854
Muni.	✓	✓	✓	✓	✓	✓	✓	✓
Year $\times$ Prov.	✓	✓	✓	✓	✓	✓	✓	✓

Note: \* $p < 0.1$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$ . Standard Errors are clustered at the municipality level. Columns (1), (3), and (5) report estimates of equation 1. Columns (2), (4), and (6) report estimates of equation 2. *Tenders per Firm* is the total number of tenders divided by the stock of firms. *Out Prov. Winner* and *Out Muni. Winner* represent the percentage of tenders won by out of province (municipality) winners each year. *First Time Winner* is the percentage of tenders won by firms for the first time in a given municipality-year.

Table 3: ORGANIZED CRIME AND PUBLIC PROCUREMENT CHARACTERISTICS

	Delay Days		Win Discount		Subcontracting	
	(1)	(2)	(3)	(4)	(5)	(6)
Post $\times$ $\geq 50\%$	20.92 (15.95)		1.343** (0.6576)		0.0296 (0.0238)	
Post $\times$ Medium		173.7 (153.6)		1.052 (2.488)		-0.1104 (0.0841)
Post $\times$ High		189.3 (156.4)		2.540 (2.509)		-0.0786 (0.0845)
Post $\times$ Very High		147.4*** (41.12)		-5.596** (2.791)		0.0089 (0.1045)
R <sup>2</sup>	0.33752	0.34063	0.43945	0.44032	0.36282	0.36303
Observations	4,906	4,906	6,182	6,182	6,188	6,188
Mean Y	117.03	117.03	18.174	18.174	0.56209	0.56209
Muni.	✓	✓	✓	✓	✓	✓
Year $\times$ Prov.	✓	✓	✓	✓	✓	✓

Note: \* $p < 0.1$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$ . Standard Errors are clustered at the municipality level. Columns (1), (3), and (5) report estimates of equation 1. Columns (2), (4), and (6) report estimates of equation 2. *Delay Days* represents the delay in public works measured in days. *Win Discount* indicates the discount on the initial price. *Subcontracting* is the percentage of public contracts subcontracted in each municipality-year.

## 6 Conclusion

As organized crime becomes increasingly adept at infiltrating the legal economy and mimicking legitimate businesses, detecting and combating these entities grows more challenging. While existing literature extensively addresses crackdowns on organized crime, there is limited evidence on policies that enhance firm transparency and compliance, thereby reducing the incentives for infiltrated firms to enter high-standard sectors and ultimately decreasing firms' susceptibility to criminal affiliations. This paper aims to fill this gap by estimating the economic impact of one of Italy's most comprehensive measures against organized crime: the Italian Antimafia Information Law. Particularly, the 2013 amendment to this policy heightened the legality disclosure requirements for firms engaged in public procurement, mandating thorough police investigations to verify their independence from organized crime. Successful firms are then listed on public registries, known as white lists, maintained by provincial police offices. By examining this policy's effects on local economic growth, procurement market dynamics, and firm performance,

this paper provides insights into how stringent disclosure requirements impact local markets differently based on their *ex ante* levels of organized crime infiltration.

The findings of this study reveal several important insights. First, raising legality standards enhances local market dynamism, leading to an increase in the number of active firms, new entries, and procurement activity. Notably, these effects follow an inverted U-shape, where dynamism is positively impacted at moderate levels of infiltration but remains unchanged or deteriorates at very high levels of infiltration. Second, the policy alters the composition of public procurement winners. Competition intensifies, as reflected by a decrease in tenders per firm, and the winning probability of non-local (out of province and out of municipality) actors rises. This shift is especially pronounced in highly infiltrated localities, where the scarcity of qualified local firms necessitates the selection of external bidders. This shift is particularly evident in highly infiltrated localities, where the prevalence of previously infiltrated firms leaves few viable local options, prompting a greater reliance on external bidders. Third, the removal of infiltrated firms from the public procurement sector results in decreased procurement efficiency and increased costs. Highly infiltrated local markets experience greater delays and higher prices following the implementation of the policy.

Taken together, these results paint a nuanced picture of policy interventions aimed at curbing crime infiltration in the real economy through rising transparency and legality standards. While the overall effects are positive, they come at a cost in areas where infiltrated firms are most entrenched. Specifically, highly infiltrated markets experience increased delays and higher prices due to the removal of these firms. The mechanisms behind the lack of immediate new firm entry in these heavily infiltrated markets remain to be uncovered, with several potential explanations. It could be that organized crime needs time to readjust, and local firms may still fear retaliation. Alternatively, the entrepreneurial fabric may be so deeply intertwined with organized crime that it takes time for new firms to emerge and replace the infiltrated ones once their incentives shift. Understanding these dynamics is crucial for designing more effective interventions and provides valuable insights for future research.

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