2020

Organized Crime In Strong States: Vote Buying, Migrants' Exploitation And Public Funds Misappropriation

Gemma Dipoppa
University of Pennsylvania

Organized Crime In Strong States: Vote Buying, Migrants' Exploitation And Public Funds Misappropriation

Abstract

Groups competing with the state, from insurgents to criminal organizations, are widely believed to emerge in weak states unable to provide protection to their citizens. This dissertation considers a common but less investigated phenomenon: criminal groups often expand to states with strong economies and institutions. How do they manage to expand? Which policies can states adopt to fight against them?

My first paper proposes a theory of expansion. I argue that criminal organizations expand by striking agreements with political and economic actors facing competition and to which they can offer critical resources to gain an edge over competitors. I test two predictions of the theory in the context of move of Southern-Italian mafias to the North. First, I show that increases in market competition (due to a construction boom) and in mafias' capacity to offer cheap illegal labor (by exploiting migrants from mafia-controlled areas in the south) allowed criminal groups to expand. Second, I find that parties in agreements with criminals gained a persistent electoral advantage in mafia-infiltrated cities.

This chapter suggests that criminal groups leveraged fragile categories and deals with political and economic actors in strong states to expand. In my second paper, I show that a similar strategy allows them to thrive. I study the effects of a campaign providing migrants in agriculture with the tools to denounce labor exploitation. I find that the campaign increased both police reporting of exploitation and prosecution of criminal organizations, often responsible for smuggling and controlling migrants. This suggests that fighting migrants' exploitation directly damages criminal groups.

My third paper studies another non-violent method to fight organized crime: targeting their revenues. We study an Italian policy fighting mafia-misappropriation of public funds and find that criminals strategically react by displacing their activity where the policy does not enforce investigations, underscoring the importance to design anti-mafia policies that anticipate criminal groups' sophistication.

My dissertation highlights the need to re-conceptualize criminal organizations not only as substitutes for weak states, but also as complements to states with strong institutions and considers policies to fight them based on understanding the strategies they use to persist in strong states.

Degree Type

Dissertation

Degree Name

Doctor of Philosophy (PhD)

Graduate Group

Political Science

First Advisor

Guy Grossman

Keywords

italy, migration, organized crime, state capacity, vote buying

Subject Categories

Political Science

ORGANIZED CRIME IN STRONG STATES: VOTE BUYING, MIGRANTS' EXPLOITATION AND PUBLIC FUNDS MISAPPROPRIATION

Gemma Dipoppa

A DISSERTATION

in

Political Science

Presented to the Faculties of the University of Pennsylvania

in

Partial Fulfillment of the Requirements for the

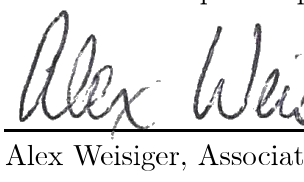
Degree of Doctor of Philosophy

2020

Supervisor of Dissertation

Guy Grossman, Associate Professor of Political Science

Graduate Group Chairperson



Alex Weisiger, Associate Professor of Political Science

Dissertation Committee

Guy Grossman, Associate Professor of Political Science

Julia Lynch, Associate Professor of Political Science

Dorothy Kronick, Assistant Professor of Political Science

ORGANIZED CRIME IN STRONG STATES: VOTE BUYING, MIGRANTS' EXPLOITATION AND PUBLIC FUNDS MISAPPROPRIATION

Dedicated to my family

ACKNOWLEDGEMENT

This dissertation started after quite a good number of dead ends. I had proposed several ideas to my committee, and every time they asked me to think to something better - a bigger question, more original, closer to my interests, although still something that I could investigate in a credible way. The task looked daunting, but my committee pushed me to keep thinking instead of following my instinct to start working on something and see how it would turn. The first reason why I would like to thank them is this: believing I could do better and encouraging me to work on a more ambitious project. In particular, I would like to thank them for telling me that a good question is not only one that is of broad interest or new, but also one that allows you to work on something you care about. At the time it looked like a risky choice: it was not even clear that working on a topic like mafias (and in the 1960s!) would be feasible, given the lack of data. In hindsight, it would have not been worth it to do a PhD (and research, in general) if not to explore something I so deeply care about.

From when we settled on the idea to study mafia expansion, I received immense help, ideas, constructive criticism and motivation from my committee and in particular from my advisor Guy Grossman, to the point that I do not think these acknowledgement will ever do justice to all the work he has put into helping me. Working with Guy was the reason why I wanted to do a PhD at Penn. At the time, I admired his research, but I had no idea what an incredible mentor he is. Both through his help on my dissertation and in the paper we have coauthored, Guy taught me how to frame research questions, how to write an introduction, how to stop the analyses only when results anticipate most criticisms and how to think broadly to the meaning of what I am studying. He did so by investing a lot of time in it - I have lost count of the occasions in which he has re-read my dissertation and sent me detailed comments on every aspect, from theoretical inconsistencies to language. Besides teaching me how to do research, he also provided me with countless opportunities to display my work, leveraging his own reputation to help me get in the best workshops, at a time in

which it was not even clear that I would do a good job at it. The trust he granted me when even I did not know whether I deserved it is probably the single most important factor that helped me gain confidence and succeed in this PhD. This dissertation would not exist without him.

I have heard many students saying their committee has not even read their thesis. Dorothy Kronick has read my thesis beyond what I put in the text, looking for patterns in the data that even I did not notice. I remember one of the first times I met with her to talk about some issue I was having with the data: she told me to just pull out my code and started looking at the data herself. Her help went well beyond making sure my analyses were not wrong: she has given me extremely helpful advice on how to sharpen my theory, helping me get clarity on the contribution my dissertation offers and even suggesting me the most effective language to use to convey it. Her suggestions on how to prepare for the market have been just as invaluable: pragmatic and detailed, but also original and creative. Throughout this journey, she has taught me to criticize my work to do it better, a big lesson for how to do research in the future.

I would like to thank Julia Lynch for so many things. For her imaginative approach to research, her capacity to see beyond the specific case of study, her concrete suggestions on how to make a project more compelling and, perhaps most importantly, for her recommendation to do work that makes you enthusiastic of it. I would also like to thank her for being such a fun instructor and for her incredible capacity of making you feel welcome to talk to her anytime. Her intellectual curiosity, her enthusiasm for research and her warm and supporting attitude have really mattered in making my PhD a great experience.

During my PhD, I was lucky to be assigned as teaching assistant for Professors Brendan O'Leary, Ian Lustick and Ryan Brutgers. I learnt a lot from them, and I would like to thank them for the freedom they gave me to think creatively to how to lead my recitation sections, something which I believe will be extremely useful in the future. In particular, I am grateful to Professor O'Leary, who was the first instructor for whom I served as teaching assistant

and I owe it to him if this is now something I love and look forward to. His accuracy and dedication to teaching gave me a model for how I would like to lead my own classes and his sense of humor made the semesters I spent TAing for him quite a lot of fun.

When I proposed to spend a visiting period in other departments, my committee trusted me to put this time to good use, something I would also like to thank them for, as this provided me with fantastic opportunities for growth. I would like to thank Pia Raffler for making me feel welcome and part of the Harvard community. She helped me familiarize with the group, included me in workshops, pushed me to present in internal seminars, she treated me as if I was one of her students. I had a fantastic experience in my year at Harvard and I cannot thank her enough for it. I am infinitely grateful to Alberto Alesina, for his generosity in meeting with me and in helping me with data collection, for considering working together although I was a student and in another discipline. Like many, I wish I had more time to work with him and share his excitement for research and for life.

I would like to thank Benjamin Lessing for welcoming me at University of Chicago, for his suggestions on how to improve my dissertation and for many interesting conversations that made me learn a lot more about organized crime. I am also grateful to Beatriz Magaloni for hosting me at Stanford and for giving me the opportunity to be part of an amazing community of scholars.

My coauthor and friend since high school Gianmarco Daniele deserves a special thank for making it incredibly easy and fun to work together and making me look forward to the next paper together. I would also like to thank Professors Yotam Margalit and Horacio Larreguy for reading and discussing my job market paper, providing me with invaluable feedback.

I am in debt to so many faculty and students who took time to read and discuss my project and that helped making this dissertation better: Pablo Balan, Robert Bates, Chris Blattman, Jessie Bullock, Erica Chenoweth, Kaitlyn Chriswell, Rafael Di Tella, James Fearon, Florian Foos, Anthony Fowler, Jeffry Frieden, Vincenzo Galasso, Roberto Galbiati,

Diego Gambetta, Donald Green, Gabriele Gratton, Saad Gulzar, Jens Hainmueller, Maximilian Kasy, Krzystoff Krakowski, David Laitin, Egor Lazarev, Marco Le Moglie, Elisa Macchi, Zoe Mark, Benjamin Marx, Nicola Mastrorocco, Manuel Melendez-Sanchez, Massimo Morelli, Paolo Pinotti, Soledad Prillaman, Cleo O'Brien-Udry, Tzachi Raz, Martin Sanchez, Raul Sanchez de la Sierra, Shanker Satyanath, Ambra Seck, Kenneth Schultz, Tara Slough, Daniel Smith, Paul Staniland, Marco Tabellini, Federico Varese, Silvia Vannutelli, Hye Young You, Jeremy Weinstein, Austin Wright, Alice Xu. I would especially like to thank my colleagues at Penn, in particular the reading group who has endured reading my job market paper twice: Haseeb Bajwa, Apurva Bamezai, Sumitra Bandrinathan, Santiago Cunial, Jiyai Huang, Nicolas Idrobo, Lotem Halevy, Rithika Kumar.

No dissertation would be worth writing without spending spare time with friends. For this, I would like to thank my friends and travel companions in this PhD: Karen Nershi, Evelyne Brie, Sara Meloni, Siyao Li, Nihan Tuncer, David Vesseyet, Sebastian Uziel, Eunji Kim, Brian Chao, Nathaniel Shils, Elisa Macchi, Lorenzo Neri, Martin Sanchez, Mary Sherif, Silvia Vannutelli, Alessandro Vecchiato, Maria Carreri, Emine Deniz, Paolo Santini, Ilaria D'Angelis, Francesca Morfini.

I thank and apologize to my partner Vincent, who has the bad luck of understanding what I do and being the victim of countless requests for help in the most desperate moments. Since he does not do a lot of credit claiming, I should acknowledge that I would have never applied for a PhD in the US if he had not insisted that I could get in and I would now be doing something I like much less. I thank Vincent for being my first supporter, for being present and quite fantastic at handling the good and the bad periods, for making it easy and a lot of fun to live together and for helping me being the best version of myself.

To my parents, my sister and my second family, Monica, Viola and Gabri: being far from you has been the real cost of this PhD. I cannot wait to be able to travel again and celebrate this achievement with you. This dissertation is dedicated to you.

ABSTRACT

ORGANIZED CRIME IN STRONG STATES: VOTE BUYING, MIGRANTS' EXPLOITATION AND PUBLIC FUNDS MISAPPROPRIATION

Gemma Dipoppa

Guy Grossman

Groups competing with the state, from insurgents to criminal organizations, are widely believed to emerge in weak states unable to provide protection to their citizens. This dissertation considers a common but less investigated phenomenon: criminal groups often expand to states with strong economies and institutions. How do they manage to expand? Which policies can states adopt to fight against them?

My first paper proposes a theory of expansion. I argue that criminal organizations expand by striking agreements with political and economic actors facing competition and to which they can offer critical resources to gain an edge over competitors. I test two predictions of the theory in the context of move of Southern-Italian mafias to the North. First, I show that increases in market competition (due to a construction boom) and in mafias' capacity to offer cheap illegal labor (by exploiting migrants from mafia-controlled areas in the south) allowed criminal groups to expand. Second, I find that parties in agreements with criminals gained a persistent electoral advantage in mafia-infiltrated cities.

This chapter suggests that criminal groups leveraged fragile categories and deals with political and economic actors in strong states to expand. In my second paper, I show that a similar strategy allows them to thrive. I study the effects of a campaign providing migrants in agriculture with the tools to denounce labor exploitation. I find that the campaign increased both police reporting of exploitation and prosecution of criminal organizations, often responsible for smuggling and controlling migrants. This suggests that fighting migrants' exploitation directly damages criminal groups.

My third paper studies another non-violent method to fight organized crime: targeting their revenues. We study an Italian policy fighting mafia-misappropriation of public funds and find that criminals strategically react by displacing their activity where the policy does not enforce investigations, underscoring the importance to design anti-mafia policies that anticipate criminal groups' sophistication.

My dissertation highlights the need to re-conceptualize criminal organizations not only as substitutes for weak states, but also as complements to states with strong institutions and considers policies to fight them based on understanding the strategies they use to persist in strong states.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF ILLUSTRATIONS

Introduction

The emergence of groups competing with the state for power is widely regarded as the product of state weakness (Fearon and Laitin, 2003). From insurgent groups to criminal organizations, competitive groups thrive by offering protection to citizens and their property rights in states that are too weak to offer this service publicly (Gambetta, 1996; Skaperdas, 2001; Acemoglu et al., 2019) Accordingly, scholars and practitioners alike consider the combination of economic development, strong institutions, and high social capital as the best weapon to defeat violent groups competing with the state, from rebel groups in India to Talibans in Afghanistan (Sambanis et al., 2003; Berman et al., 2011).

While this prevailing view sheds light on the emergence of groups competing with the state, it has troubles explaining a phenomenon which has received little attention but can be observed across many regions and time periods: criminal organizations frequently expand to places with strong economies and institutions. From Sicily to the US, from Hong Kong to Canada, from Calabria to Germany and Australia, criminal organizations have tended to migrate precisely where institutions are strong, economic conditions stable, and the civil society active. This choice is very puzzling. Transplanting a criminal organization requires building anew a reputation for violence, a network capable of delivering information and favors, and establishing governance over the territory (Smith and Varese, 2001; Varese, 2011). For these reasons, Gambetta (1996) described mafias as "A difficult industry to export". Expanding to strong states seemingly makes these tasks even more daunting, as these states' capacity to detect and crack down on incipient criminal groups can be expected to be higher.

In this chapter, I study how criminal organizations expand to strong states. I develop a theory for where criminal groups are successful at moving, conditional on their desire to expand, and test it in the context of the expansion of southern Italian mafias to Northern

Italy. My theory focuses on one distinctive feature of strong states: their capacity to enforce rules that regulate political and economic competition (Polanyi, 1945). On one hand, competition provides actors facing it with incentives to look for shortcuts, such as using illegal labor or vote buying. On the other hand, the enforcement of these rules makes it risky to take illegal shortcuts, as the state would prosecute the use of illegal competition. Criminal organizations can solve this problem by offering political and economic actors critical resources to gain an edge over competitors, such as bought votes and controllable illegal labor. If an agreement is struck between local actors and criminal groups, this allows incipient criminals to (i) avoid police detection, thanks to the relation of mutual dependence with locals, thus making strong-states' repressive capacity unimportant (ii) generate a stream of revenues, as local actors pay to receive these services, and (iii) build networks and establish a reputation for violence in the new territory. This strategy requires criminal organizations to be able to access, control, and offer illegal resources to local actors, which periods of mass migration can greatly facilitate. In fact, in several episodes of expansion, criminal groups have moved together with waves of migrants from the same area of origin and exploited the fact that these migrants needed employment and were susceptible to the intimidation of criminal groups, who could credibly threaten them and their social networks at home.

I test this theory in the context of Northern Italy, a region with high social capital and well-functioning democratic institutions (Putnam et al., 1994), but which has suffered increasing levels of mafia infiltration since the 1960s. I first provide qualitative evidence indicating that during times of boom in the construction sector, in which unqualified labor was in high demand and costly to hire, mafias struck deals with local businessmen giving them access to cheap workforce, namely illegally employed southern migrants. These workers came from the same areas as mafias, and were easy for mafias to exert control over.

Second, I investigate whether this phenomenon was systematic across cities and whether it contributed to mafias expansion. I collect data on construction and internal migration

in all Italian municipalities since 1960, and construct a new measure of mafia infiltration by scraping mafia-related news from historic newspapers and validating them with present time mafias indicators from judicial sources and NGOs. I instrument both for construction employment and migration from the south of Italy to test whether their joint increase determines a higher probability to observe mafia. I instrument construction by exploiting a law from 1865, which regulated the development of cities above 10,000 inhabitants. I show that this law generated larger increases in employment in the construction sector in municipalities above the threshold from the 1960s onwards, without affecting other observable city-level characteristics. I instrument migration using a shift-share instrument and leverage differential levels of droughts in the south of Italy as push factor. Instrumental variable estimates show that the joint effect of southern migration and construction has a large impact on the probability to observe mafia presence. Instead, construction and migration alone are negative or insignificant, allowing to exclude that mafias expanded by making profits in the construction industry (owning or extorting businesses) or that migration might have caused an increase in crime. The effect is also null when we consider migration from provinces unaffected by organized crime and sectors with large employment growth but highly regulated or employing high-skilled workers. This result is robust to using a variety of different definitions of mafia presence, instruments and specifications.

In sum, southern mafias were more likely to successfully establish a permanent outpost in the north of Italy where a demand for their services existed and they could find the resources to address it. The service of illegal labor provision and control they offered can be best conceptualized as a complement to a strong state that would prosecute labor violations if they were to be denounced, rather than as a substitute to a weak state not providing sufficient protection to the market.

I then turn from studying the determinants of organized crime transplantation to its effects to test a second prediction of the theory: that actors striking deals with organized crime benefit from the agreement, gaining a competitive advantage. Exploiting the instrumental

variable approach predicting mafia in a difference-in-difference design, I causally identify the effect of mafia infiltration on political outcomes in the years after the construction and migration boom started. I find that cities affected by mafias in the 1960-70s display significantly higher support for the Christian Democracy (DC), the party which the judiciary has found to have stable connections to organized crime. As should be expected, this effect is absent before 1958, when mafias started moving north. While in cities without mafia the DC lost consensus with the disappearance of the communist threat and later with the largest corruption scandal in the history of the Republic, Tangentopoli, the vote share gained in cities affected by mafias after infiltration is inelastic to political upheavals and if anything keeps increasing. The vote share for the DC is larger in infiltrated cities with higher presence of southern migrants - a group of voters controlled by mafias - while cities with high southern migration but no mafia presence do not vote more for the DC. Cities affected by mafias are also more likely to vote for Berlusconi from 1994 onwards, indicating long-term effects of mafia infiltration on politics. Taken together, this evidence suggests that the expansion of organized crime leveraged deals not only with economic actors but also with political actors, including vote buying for specific parties.

A vast literature has described groups in contention with the stateas the byproduct of the weakness of the state they originated in (Fearon and Laitin, 2003). The necessity to substitute weak states unable to perform their essential functions explains the initial development of insurgent, rebels and criminal organizations. For example, the Sicilian Mafia emerged by providing private protection of property rights to landowners at a time when the Bourbon Kingdom was unable to effectively protect their property publicly (Gambetta, 1996; Bandiera, 2003; Dimico et al., 2017; Buonanno et al., 2015; Acemoglu et al., 2019). Similar dynamics characterize the emergence of organized crime in Russia (Varese, 2006; Lonsky, 2020), China (Wang, 2017) and Japan (Hill et al., 2003). A related literature has examined the strategies that other non-state armed groups, such as rebels and terrorists, use to emerge (Sánchez De La Sierra, 2020) and expand (Weinstein, 2006; Bueno de Mesquita, 2013; Toft, 2014). A much smaller literature focused on the expansion of criminal groups,

including Varese (2011), who uses case studies to compare cases of successful and failed transplantation and Buonanno and Pazzona (2014), Pinotti and Stanig (2016), Sviatschi (2018) and Scognamiglio (2018), who study the supply effects of forced resettlement of criminals on mafia expansion.

My research contributes to these literatures by examining how criminal groups expand with a specific focus on transplantation in strong states, a phenomenon which current theories connecting organized crime emergence to state weakness are unable to explain. By examining the role of mafias as political brokers and labor racketeers, I show that criminal groups can exist as *complements* to strong states - providing services aimed at avoiding states' prosecution for labor and electoral violations -, rather than as substitutes for weak states, offering protection when the state cannot provide it.

I also contribute to a growing literature studying the connection between migration and crime. While past studies have focused on the real and perceived effects of immigration on security (Dancygier, 2010; Mastrobuoni et al., 2019), in this chapter I take a different perspective considering immigrants as resources criminals exploit to expand further. This perspective contributes to explaining why the association immigration-crime persists even though migrants do not seem to commit crimes at higher rates than natives (Pinotti, 2017).

Understanding the way in which criminal groups expand, striking agreements with local actors, also allows to build expectations on the effects of infiltration on politics for parties entering in deals with criminal groups. While other papers have presented evidence that criminal organizations can affect party vote shares in places like Colombia, Brazil and Sicily (Acemoglu et al., 2013; Hidalgo and Lessing, 2015; Buonanno et al., 2016; De Feo and De Luca, 2017), this chapter provides causally identified evidence that criminal groups can affect voting also in the context of a strong state, with a developed economy and a stable democracy.

A final contribution is the construction of a new dataset of mafia presence from as early

as archives of news are available, at the municipal level and which allows to verify the correspondence of news with other mafia indicators. My news-based measure of criminal activity has also the potential to be exported to measure of organized crime in other countries, allowing for consistent comparative studies of organized crime across space and time.

Once criminal organizations plant roots in an area, it is hard to eradicate them. Research has shown how crack-down on organized crime can backfire on the state itself and lead to civilian killings and the rise of new criminal groups (Skarbek, 2011; Lessing, 2017b; Prem et al., 2019; Castillo and Kronick, 2020; Kronick, 2020). It is therefore of primary importance to understand the conditions allowing criminal organizations to set foot in a new area and identify which levers can be pulled to prevent their expansion.

The first chapter concludes that the combination of two factors - local actors facing high competition and criminal groups having access to migrant workforce they are able to control and exploit - allowed the expansion of Southern Italian mafias to the North. In the second chapter, I ask whether fighting migrants' exploitation can undermine organized crime. Recruiting and controlling illegally employed migrants are activities in which criminal groups have a natural advantage. First, the routes and contacts used to smuggle illicit products can also be used to traffic humans, an activity from which organized crime extracts a progressively large amount of revenues (Caparini, 2014). Second, employers hiring illegally are exposed to the risk of being reported to the police, especially in case of work related accidents. Using criminal groups as intermediaries to control illegal workers and threaten them with violence guarantees that this risk is minimized. In the same way that southern mafias controlled migrants in the North, today criminal groups control and exploit the labor of migrants in the Italian countryside through the gangmaster system. I study the effects of a multidimensional campaign which provided migrants working under the gangmaster system in agriculture with information on their rights as workers and tools to denounce exploitation. I find that the policy is effective in increasing both crackdown on labor exploitation

and prosecution of members of criminal groups, who often act as gangmasters.

The question of how to fight agains organized crime is also the topic of Chapter 3. Here, I consider a different strategy used by criminals to thrive in the context of a rich, strong state: misappropriating public funds. Criminal groups use legal enterprises to apply for procurement contracts and government subsidies in order to launder money, offer employment to locals (an important opportunity for patronage) and redirect resources to finance illicit activities. This strategy is particularly profitable in the context of rich states which large public spending. According to the European Union Anti-Fraud Agency, every year between 300 and 900 millions of EU Funds are misappropriated by criminals (OLAF, 2018). In the third paper, I examine a policy aimed at fighting mafia misappropriation of public subsidies by screening companies applying above a certain threshold for connections with mafias. I find that the policy is effective in forcing mafia-related companies to sort below the threshold of application of the law, producing a large economic loss for criminals. I estimate that extending controls beyond the threshold would be beneficial even accounting for estimated costs of screening and considering as benefits only the financial recoveries from not assigning public funds to mafias.

Over time, organized crime has evolved to seize the opportunities for expansion and profits offered by modern states, such as migrants' exploitation and public funds misappropriation. Identifying these strategies and what allows criminals to seize them is essential for understanding the relation between criminal groups and the state and is the precondition for an effective fight against them.

How Criminal Organizations Expand to Strong States: Migrants' Exploitation and Vote Buying in Northern Italy

Abstract

Criminal organizations are widely believed to emerge in weak states unable to protect the property rights and safety of their citizens. Yet, criminal groups often expand to states with strong capacity and well-functioning institutions. This chapter proposes a theory accounting for this phenomenon. I focus on one distinctive feature of strong states: their capacity to enforce competition. I argue that criminal organizations expand by striking agreements with political and economic actors facing competition and to which they can offer critical resources to gain an edge over competitors. I test this theory in the context of Northern Italy, a region with high social capital and well-functioning democratic institutions, but which has suffered increasing levels of mafia infiltration since the 1960s. I construct a new measure of mafia presence at the municipality level, by scraping mafia-related news from historic newspapers and validating them with present time mafias indicators from judicial sources and NGOs. I test two predictions of the theory. First, using an instrumental variable approach, I show that increases in market competition (due to a construction boom) and in mafias' capacity to offer cheap illegal labor (by exploiting migrants from mafia-controlled areas in the south) allowed criminal groups to expand to the north. Second, I show that parties that entered in agreements with criminal groups gained a persistent electoral advantage in mafia-infiltrated cities and only after infiltration. This evidence suggests that mafias' expansion leveraged deals with economic and political actors in strong states, pointing to the need to re-conceptualize criminal organizations not only as substitutes for weak states, but also as complements to states with strong institutions.

2.1. Introduction

A vast literature has characterized groups competing with the state as the direct product of state weakness. Fearon and Laitin (2003) suggest that weak institutions makes insurgency more attractive because rebels can potentially take over the state and reap its benefits. In civil wars, weak institutions unable to curb violence open the space for protracted conflict and the strengthening of groups competing for power with the state (Skocpol, 1979; Hegre et al., 2001; Goldstone et al., 2010). Similarly, criminal organizations have been shown to emerge as the product of state weakness: when the state has been unable to protect citizens and their property rights, criminal groups have stepped in, providing these services privately Gambetta (1996); Skaperdas (2001); Acemoglu et al. (2019); Sánchez De La Sierra (2020).

While this theory characterizes the origin of groups competing with the state, it has troubles explaining a common but overlooked pattern: criminal groups often expand to states with strong economies and institutions. This pattern is surprising, not only because previous theories rely on state weakness to explain the rise of these groups. Criminal organizations are not easily exportable industries as they rely on resources that are inherently local to function. A reputation for violence, a network of informants, connections in the institutions, the ability to maintain consensus in an area are all resources that cannot just be exported somewhere else (Smith and Varese, 2001; Varese, 2011). Finally, expanding to strong states should be harder considering that these states have better capacity to detect and repress incipient criminals, and all the incentives to do so.

This chapter formulates a theory explaining the move of organized crime to strong states. In particular, I develop an explanation for where criminal organizations are successful at establishing a stable presence, conditional on moving. I propose that criminal groups expands when they are able to strike agreements with local actors facing high competition and to which they have the capacity to offer illegal resources to overcome competitors, such as bought votes and controllable illegal labor. If an agreement takes place, criminals can (i)

avoid police detection, as the mutual dependence with local actors guarantees that no part involved has incentives to denounce (ii) generate a stream of revenues from service provision and (iii) create networks in the new territory and start building a reputation for violence. This strategy is only feasible where criminal groups have access to illegal resources that can help local actors overcome competitors, such as controllable illegal labor or votes. In line with this theory, several cases of expansion are characterized by the contemporaneous move of criminals and migrants from their same area of origin, individuals needing employment, often unable to being legally hired and on which criminal groups have control thanks to an already established reputation.

I test this theory in the context of the move of Southern Italian mafias to the economically and institutionally developed North starting in the 1960s and 1970s. First, I provide qualitative evidence indicating that during times of boom in the construction sector, mafias struck deals with local businessmen to give them access to cheap workforce they controlled - migrants from mafia-affected areas in the south. Second, I test the hypothesis that mafias expanded in cities with a joint increase in competition (due to a construction boom) and in mafias' capacity to offer illegal labor (due to migration from the south). I exploit two separate instrumental variable approaches to provide evidence in line with this prediction. Third, using an instrumented difference-in-differences approach, I show that political actors that - as documented by judicial evidence - entered in agreements with organized crime, benefited electorally in mafia-infiltrated cities in the North, gaining a competitive edge over other parties.

Taken together, this evidence demonstrates that organized crime expanded to Northern Italy by building coalitions with political and economic actors to which criminals were able to offer a competitive edge leveraging vote buying and illegal labor.

This chapter contributes to a vast literature studying the relation between competitive groups and weak states (Fearon and Laitin, 2003) and in particular studying the emergence of organized crime (Gambetta, 1996). Departing from previous studies, this chapter devel-

ops and tests a theory explaining the expansion of organized crime to strong states. Acting as political and labor brokers, criminal groups in strong states can be best conceptualized as complements to states with strong institutions, rather than substitutes to weak states. Understanding how expansion of criminal groups takes places does not only help providing a more complete picture of the role of criminal groups in strong states, it also sheds light on the dynamics that states should be aware of and fight against to prevent the negative long-term consequences of organized crime infiltration.

2.2. A theory of organized crime expansion to strong states

Stronger and richer states can offer larger profit opportunities. In this sense, it is easy to imagine why criminal organizations might want to create an outpost in those places. Previous work has examined the reasons leading criminals to move away from their area of origin and found that criminals mostly move to escape police prosecution, wars with rivals or due to forced resettlement (Varese, 2011; Pinotti and Stanig, 2016; Sviatschi, 2018). In this study, I take the move of criminals as given and I seek to explain why they manage to establish permanent roots in some places and not in others, conditional on moving.

Obstacles to expansion:

From the point of view of the existing knowledge on organized crime and criminality more in general, the expansion of criminal organizations to strong states is a puzzle. First, the prevailing view holds that criminal organizations emerge as substitutes for weak states which fail to protect citizens and their property rights (Gambetta, 1996; Bandiera, 2003; Buonanno et al., 2015; Dimico et al., 2017; Acemoglu et al., 2019), but states with strong capacity accomplish these functions efficiently, suggesting we should not see any criminal group emerging in these contexts. Second, research in criminology shows that crime expansion is generally hard to accomplish (Guerette and Bowers, 2009; Weisburd and Telep, 2013; Johnson et al., 2014). Learning the map of a new territory, identifying weak spots and assessing risks requires time and effort and has uncertain returns (Johnson et al., 2014). Constraints to expansion are even more binding for organized crime, which is rooted in

resources which are inherently local: a reputation for violence, a system of informants, a network of people owing them favors or that can be blackmailed, and a system of governance over the territory or over a group of people. For these reasons, Varese (2011) has suggested that mafia transplantation is more similar to a politician trying to be elected in a different country than to a company opening a foreign outpost. Third, strong states have better resources to repress expansion and should be more likely to succeed when expansion is just starting and criminal groups are not yet strong. Yet, organized crime frequently manages to set foot in new areas without being defeated by strong states. I theorize a strategy of expansion which allows to overcome these three obstacles.

Competition:

I start by focusing on a distinguishing feature of strong or relatively strong states, their capacity to enforce rules that regulate competition (Polanyi, 1945).[1] For competition to properly function in markets and elections, states must have the capacity to enforce rules and coerce actors to abide by them. The existence of rules regulating competition entails two consequences. On one hand, higher competition increases the incentives for actors operating in these markets to look for shortcuts, such as using illegal and underpaid labor or buying votes. On the other hand, the enforcement of rules regulating competition makes it riskier to take these shortcuts. Businessmen trying to hire illegally risk being reported to the police while trying to recruit and are exposed to the risk of being blackmailed by employees that are hired informally. These risks increase if unexpected shocks damage the working relation, such as a negative income shock or a work-related accident, which might push the employee to change her mind and decide to denounce. Finding voters to which to propose vote buying and guaranteeing their silence over the transaction can be equally risky for politicians.[2]

[1] Although several definitions of state strength have been proposed (see (Berwick and Christia, 2018) for a review), for the purpose of this theory the sufficient conditions are the capacity to enforce rules regulating competition (Polanyi, 1945) and the capacity to provide public protection of property rights.

[2] See (Bliss and Tella, 1997) for a discussion of why perfect competition does not entail the absence of corruption. See also (Stigler, 1972) for the similarities between political and economic competition.

Criminal organizations can offer a solution to these problems as they often have the capacity to control the behavior of workers and voters such that reporting risks are substantially decreased.

Capacity to offer illegal resources:

Access to a network of low-income controllable people is a distinctive feature of criminal organizations across countries. First, criminal groups generally originate and maintain their strongholds in poor communities in which the incentives to accept illegal forms of employment are higher. Second, even when they move away from their original area, control over a group of low-income people is often maintained by exercising forms of control over migrants. This is because historically criminals have moved together with masses of migrants from the same area of origin as criminals. All the examples mentioned in the introduction respond to this logic: Sicilians migrating to the US (Cressey, 2017), Russian migrants escaping the Soviet Union to Europe (Varese, 2006), refugees from the civil war in Salvador to the US (Sviatschi, 2018), Italians from Calabria in Germany and Australia (Calderoni et al., 2016), and so on.

Migrants from the same origin as criminal groups are susceptible to their reputation as credibly threatening and have the power to retaliate against them or against family members who stayed behind. When migrants have scarce opportunities to integrate in the destination society, because they are clandestine or for lack of integration policies facilitating their entrance in the new labor market, organized crime can profit from its proximity and power over migrants to offer them employment in absence of a legal contract while guaranteeing that migrants will not report their employers, even in case of negative shocks or work-accidents. This can be the case for legal migrants facing frictions in entering the legal labor market and it is even more for illegal migrants, unable to access legal employment and subject to the threat of expulsion.[3]

[3]Notice that the behavior of states with respect to migrants - lack of controls over their rights as employees, lack of integration policies - cannot be characterized as a sign of state weakness. Rather, it is a choice that states with varying degrees of strength and resources availability make whether to integrate migrants or leaving them in a condition of poverty and marginalization.

I argue that members of criminal groups from the same area of origin as migrants, speaking their same foreign language or dialect, and able to use their social networks at home to threaten punishment have enough power over migrants to exercise forms of control and exploitation, such as labor racketeering and vote buying.

Expansion:

What do criminal organizations obtain in return from the provision of illegal services to local actors facing high competition? Other than generating rents (local actors pay criminals for their services), an agreement produces two important consequences for expansion. First, a system of mutual dependence with local actors reduces the probability that criminals will be reported to the police, making the repressive capacity of strong states less consequential. Second, it provides criminal groups with the opportunity to build the resources on which their power is rooted in the new territory: networks within the community, the acquisition of a reputation for violence, the possibility to blackmail businessmen and politicians to obtain information and favors. I contend that, in exchange for the services they provide, criminal organizations create the conditions allowing them to establish their presence in a new territory.

Hypothesis: *Expansion takes place when criminal groups are able to strike agreements with local actors facing competition to which they can offer critical resources to gain a competitive edge. An agreement guarantees that criminals go unreported and provides them with the opportunity to build local resources (networks, reputation, governance).*

Criminal organizations minimize the probability that the state prosecutes businessmen for illegally hiring workers and politicians for illegally mobilizing votes. They do so by using their own channels for recruitment - thus removing any direct linkage to political and business actors - and by guaranteeing silence over the transaction thanks to their intimidation power. While competitors or institutional actors might try to denounce these illicit activities, documenting them judicially is hard in absence of parts willing talk.[4] Organized

[4]The next section reports examples of such behavior: for example, union members were aware of the system of labor exploitation workers were subject to and tried to denounce it, but they were unable to find workers willing to testify and they became themselves targets of mafia threats.

Table 1: Obstacles to expansion from the literature and explanations offered by this theory on how criminal organizations (CO) overcome them

Obstacles to expansion (literature)	**How CO overcome them to expand (this theory)**
CO emerge providing private protection (substitute to a weak state)	CO expand providing intermediation services (complement to a strong state)
Difficult to recreate local resources (reputation, networks, governance)	Recreate local resources thanks to agreements with local actor and governance over migrants
Strong states have the capacity to repress incipient criminal groups	CO avoid state repression by creating incentives for their partners not to denounce

crime's capacity to enforce informal contracts and maintain them private is most useful in places where the cost of the illegal transaction becoming public is highest – in strong states, where this behavior would be most effectively prosecuted. In this sense, differently from the previous literature, this theory conceptualizes criminals as offering businessmen and politicians a service of protection *from* strong states' prosecution for illegal competition (thus a *complement* to a strong state), rather than protection in place of a state unable to provide it publicly (a substitute to a weak state). While the view that criminal groups emerge substituting weak states has proven useful to explain the emergence of criminal groups, it does not offer insights into how criminal groups establish roots in places in which the state offers effective security and property rights' protection. My theory and findings, instead, allow to explain how criminal organizations expand to states with strong institutions, high level of competition, prosperous economies, and high social capital.[5]

Testable Predictions

I test two predictions of the theory. First, the theory predicts where expansion will take place: criminal groups should expand where states enforce rules regulating competition, competition is high and criminals have the capacity to offer local actors critical resources to gain a competitive edge. I consider a context in which the state establishes and enforces

[5]Section A.1 in the SI discusses more in detail the differences between this study and (Varese, 2011).

rules regulating competition and there is variation in the extent of market competition and in criminal groups' capacity to offer illegal resources.

Prediction 1: Determinants of expansion. *Criminal groups expand where competition is high and criminal groups have access to illegal resources.*

Second, the theory predicts that actors who strike agreements with criminal organizations should benefit from this agreement by gaining a competitive edge. I test this prediction using variation in political outcomes of parties that, based on judicial evidence, have and have not made agreements with criminal groups in cities with and without mafia infiltration.[6]

Prediction 2: Effects of an agreement. *Actors striking deals with organized crime benefit from the agreement, gaining a competitive advantage.*

2.3. The Expansion of Southern Mafias to the North

The expansion of southern mafias to the center and north of Italy started in the late 1950s and took shape through the 1980s. In those years, Italy - especially if we exclude the South - was a comparatively strong state, with a firm a monopoly of violence within its territory, a modern bureaucracy, a well-regulated market society and a large public sector. The conditions identified as conducive to the emergence of criminal groups – the lack of protection of citizens' security and of their property rights, creating the demand for private forms of protection - were absent, in a state that had crime rates in line with other countries and property rights well enforced. The 1960s and 1970s were also the years of the "economic miracle", a boom in construction and manufacturing which increased the competition to hire unskilled workers and attracted a mass of southern migrants looking for employment in the center-north.[7] The size of this migration was impressive: from the start of the boom in 1958 to its slowdown in 1974, a total of 4 million people had resettled to the

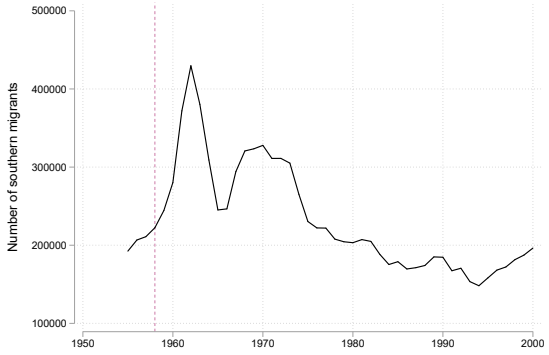
[6] Testing whether businessmen benefited from the agreement is not feasible in this context, as this would require knowledge on which businessmen entered in collusive agreements with mafias, but names of companies found guilty are not disclosed nor data on individual companies are available at this time. Additionally, while political competition involves long-term actors (parties) whose performances can be continually observed over election cycles, the same strategy is not feasible for companies, unless they are extremely long-lived.

[7] Before this time, there had been close to no internal migration, as the Fascist regime explicitly aimed at reducing migration flows. Right at the end of Fascism, ethnic Italians living in Istria, Quarnaro and Dalmatia (annexed to Yugoslavia after WWII) were forced into a diaspora which brought 250-300.000 people to move to the closest area in Italy, the north-east. Those migrants, however, were moving only a few kilometers to the west and were very similar to the population that hosted them.

center-north, corresponding to one fourth of the entire southern population (Figure 1). The vast majority of migrants was employed, often illegally, in the construction industry.[8] In 1962 it was estimated that 70% of the construction workforce in Genoa, 80% in Turin and 85% in Milan came from the south. Most of the migrants worked for extremely low pays and were subject to frequent work accidents. Many lived in disorganized urban centers in the peripheries of the big cities, spoke dialects and often no Italian and they were largely discriminated against (Ascoli, 1979). The phenomenon of mass migration ended in 1973-74, when the oil crisis reduced the speed of economic development in the north. Since then, migration from the south has continued at lower intensity.

Together with the migrants, a number of mafia members also moved to the center-north, some pushed by their own ambitions and some brought there by the state.

Figure 1: Number of migrants from southern provinces moving to the center and north of Italy, 1955-2000



The state forcibly relocates mafia members

Until 1995, the state had a policy forcing mafiosi to internal exile by relocating them to other cities outside of their region. The policy of *soggiorno obbligato* was a by-product of the idea that mafias are the result of a backward environment, so that relocating mafiosi to a more developed place would break their ability to organize a criminal group (Varese, 2006). Far from breaking criminality, according to both the Parliamentary Commission investigating on mafias and recent empirical work by Buonanno and Pazzona (2014) and Pinotti and Stanig (2016), this policy favored mafias' expansion by pushing people with criminal skills to new virgin territories.

[8] The construction industry is one of the sectors in which even today criminal groups make large profits (ANSBC, 2019) and one of the sectors at high risk of criminal infiltration according to Gambetta and Reuter (1995).

At the same time, other mafia members also moved towards north spontaneously.[9] The Parliamentary Commission investigating on mafias suggests that even mafiosi sent to exile, in some cases, managed to be relocated in cities of their choice. Even if forced resettlement created an additional supply of mafiosi moving towards north (Varese, 2011), their presence did not automatically translate into mafia expansion[10] and it remains unclear what determined criminals' success at creating new outposts, conditional on moving.

The racket of migrant workers

What did mafia members do in the north after they resettled? Evidence from newspapers and from the work of the Parliamentary Commission investigating on organized crime suggest that mafiosi undertook a variety of different criminal activities, from extortions and usury to kidnappings. Another common pattern is their involvement in the construction sector[11] and in particular in the racket of migrants from the south as workforce in the booming construction industry. A series of judicial and political investigations following a scandal which took place in Turin in 1971[12] allows to understand the way in which this system worked.

First, most construction companies were relatively small and relied on subcontracting to perform the different functions required to produce finished buildings, a practice which was only allowed in certain categories of construction works (Law n. 1369/1960). Additionally, since construction work is discontinuous and requires varying numbers of laborers depending on the size of the job, it is necessary to have occasional workers available on call. At a time

[9]To mention some notable examples, the boss Joe Adonis moved to Milan, Geraldo Alberti from Cosa Nostra to Cologno Monzese, the 'Ndrangheta boss Giacomo Zagari to Piedmont and Frank Coppola to Lazio.

[10]For example, although the province of Cuneo was the first in the Center-North for number of resettled mafia members (CPA, 1976), this province ranks 98th over 103 in the provincial level index of mafia presence developed by (Calderoni, 2011).

[11]The first mafiosi arriving in Lazio, for example, established their residency along the coast in rapid urbanistic development and invested in construction. For example, the boss Frank Coppola moved in a sea town close to Rome, Torre San Lorenzo, bought land and buildings and obtained permits to build (CPA, 1976). The Cosa Nostra bosses from the Cuntrera-Caruana family established their residency in Ostia. The 'Ndrangheta family Gallace and Domenico Tripodo moved further south on the coast, in Anzio, Nettuno and Fondi. All operated in the construction sector.

[12]The scandal saw a specialized piece worker killing four 'Ndrangheta members out of exasperation for the level of exploitation to which he was subject as a worker in the construction industry. La Stampa, May 3, 1971, p.5

of boom in sectors employing unskilled labor and of low unemployment, it became difficult for businessmen in the construction sector to find cheap and intermittent workforce.[13] To cut costs and times, many businessmen relied on informal subcontracting to people capable of controlling illegal workers. This process happened in a proper – extralegal – marketplace: in Turin, workers showed up in the morning at the train station, where members of mafias hired as many workers as they need. Mafias received a cut from both the businessmen and the migrants for their service.[14] When work-related accidents took place, and they were common,[15] mafias could guarantee that migrants would not report them to the authority for fear of repercussions on themselves or on their family members who stayed behind.[16] Even if unions tried to penetrate this system and help workers, their offer was difficult to take due to mafias' intimidatory power.[17] A reportage by the newspaper L'Unità suggests that mafia members entered in this business "Certain of their impunity, which does not derive from their own strength, but rather from that of the system: they are useful for profits, so they will never be touched". [18]

Businessmen: According to the Parliamentary Commission, businessmen accepted the intermediation of mafias out of convenience: they faced increasing competition to hire unskilled workers and the pool of candidates was mainly composed of southern migrants, since local workers preferred employment opportunities offering more regular income and

[13] CPA 1976, p.288.

[14] In Turin, the price of this service for businessmen, varied between 50 and 150 Lire per square meter built, corresponding to between 25 and 75% of the pay of a specialized piece worker. For workers, a fee was often asked in advance of even starting to work. In a case of racket uncovered by the investigators, a worker was asked to pay 120,000 Lire to be allowed work. For a house of 100 square meters (1000 Sq. Feet) employing ten workers, mafias could make as much as 1,200,000 Lire – corresponding to about 12,000 USD today. La Stampa, May 3, 1971, p.5

[15] According to the Inspectorate of Work, the number of work-related deaths in one year, only in the construction sector and only in the Turin province, was 63, a number higher than any other sector and province and which is likely to be an underestimate. Regional Council of Piedmont, February 9, 1972, n.82, p.11.

[16] L'Unità, May 9th, 1971, p.6.

[17] A union representative explains: "When we try to interrogate them, workers stay silent or provide false information. Meanwhile, mafia members engage in threatening acts against us. They do so not so much to scare us, rather to show workers that they are stronger than we are. They do not openly threaten us, they use subtler ways. Once, out of the construction site, I found my car damaged. Another time, a block of bricks had fallen on it. Another time, there was a hole created by bullet shot against the car door". Regional Council of Piedmont, February 9, 1972, n.81, p.11.

[18] L'Unità, May 9, 1971, p.6.

lower risks. Additionally, hiring without a contract allowed to evade taxes on labor and social security, cutting the cost of labor in half. Since work accidents were extremely common, the intimidatory power of mafias was important to prevent workers from reporting their situation of irregularity to the police.[19]

What fraction of the construction companies in a city was in collusion with mafias? The most extreme case discovered by the judiciary was that of Bardonecchia, territory of the boss Rocco Lo Presti, where it was estimated that about 85% of the companies relied on the services provided by organized crime. In Turin, a much larger city, where the first scandal exploded and investigations were conducted, between 70 and 80% of the construction workforce was subject to racketeering.[20] Other cities subject to systematic investigations had smaller but still significant fractions of the companies involved.

This anecdotal evidence is in line with Gambetta and Reuters (1995), who discuss that large collusive agreements are the most efficient for mafias to manage. Unlike agreements with few participants, they reduce the potential for new racketeerers to enter the market and increase profits from participation fee collection. Having more members guarantees a better capacity to control pricing in local markets and makes exit from these agreements costly for participants. While businessmen outside of the agreement have incentives to request police investigation on these practices, anecdotal evidence from the attempts made by unions to break the system (discussed above) suggest that obtaining evidence sufficient to denounce was extremely hard in absence of workers willing to talk.

If such a large fraction of business owners hired mafia as intermediaries, who were they competing against? In the context of Northern Italy, competition to hire unskilled labor extended beyond the construction sector and applied to most of the sectors that were booming, including manufacturing and mechanics. Using criminal groups as labor racketeers allowed businessmen not only to drastically cut on labor costs, but also to recruit difficult

[19] La Stampa, May 11th, 1971

[20] Parliamentary Commission on the phenomen of the Mafia in Sicily, 1976, Legislature IV, p.280.

to find manual workers at affordable prices.

Migrants: Why did migrants accept to work without a contract and under the threat of mafias? The Parliamentary Commission suggests that mafias managed to obtain control over migrants not only with intimidation, but also by offering immediate and much needed help while migrants faced unemployment and social marginalization.[21] In this sense, the commission identifies the lack of services to help migrants match with employers and integrate in the new society as the root cause of the phenomenon of labor racketeering. Interviews conducted by the press with union members also suggest that most of the employees accepted to work without protection because regularization and insurance would be curtailed from their pay and this represented a large wedge for migrant workers, whose objective was to accumulate as much money in the shortest time possible to send them home and to go back to live in the south themselves.[22] Qualitative evidence suggests that a combination of short time horizons on the part of the laborers with the lack of a social safety net and ineffective labor market regulation led workers to *prefer* to join the mafia labor racket rather than go through official channels.

The state: The state, and the institutions in charge of discovering and repressing this phenomenon, seem to have actively responded to the threat of mafia expansion, at least in the Turin case. Right after the first scandal in 1971, the judiciary started investigations in all the municipalities in the surrounding area. The Unions (Cisl, Cgil, Uil) held a joint conference on this topic and the regional council of Piedmont created a special commission to investigate on these crimes, presenting a report in November 1972. Also the Antimafia Commission in 1974 examined this phenomenon. However, this mobilization was not sufficient to eradicate the phenomenon: even in Bardonecchia, the city subject to the highest level of scrutiny, the Parliamentary Commission estimated that the market for labor still involved about 30% of the workforce in 1974, three years after the repression activity started. The

[21] Mafia members waited for migrants at the train station and offered them employment as soon as they stepped foot in the north (La Stampa, December 3 1969, p. 9).

[22] La Stampa, September 30th, 1971, p.4

likelihood that the state could collect sufficient evidence to convict criminals was very low, as both businessmen and migrants agreed to mafias' intermediation. As a result, variation in the quality of institutions is unlikely to explain differing levels of mafia infiltration. The most important mistake of the state seems therefore not so much in having been ineffective in the few cases in which racketing was denounced or discovered (here repression was immediate and investigation capillary). Rather, the state failed to offer a structure capable of coordinating the supply of work represented by migrants and the existing local demand, and it failed to enforce laws on workplace treatment and to provide immigrants with the resources necessary for their integration in the new society. In this respect, the state was not weak, as its lack of action towards the integration and protection of migrants was the result of a lack of interest in creating integration infrastructures, rather than of incapacity.[23] This space left empty by the state was readily occupied by mafias.

2.4. Data

2.4.1. Mafia presence

For the time period 1960-80s in Italy, there is no systematic data on mafia presence available from institutional sources. I create a measure of mafia presence by scraping newspapers articles discussing typical mafia-related crimes starting from 1960.[24] A first order concern using this method is that we might observe instances of mafia in a territory not because of intense mafia activity, but rather due to a successful judicial activity, which might take place exactly where mafias are weaker and less able to conceal their presence. I address this concern in two ways. First, I scrape not only news explicitly containing the word mafia or 'Ndrangheta, but also typical crimes committed by mafias, such as extortions, kidnappings, vote buying, drug trafficking and labor racketeering. Second, I validate the measure obtained from news by comparing it to official indicators of mafia presence available

[23] In those years, there was no active debate in favor of creating integration policies for southern migrants, which explains the states' disinterest in this topic. If anything, there was a debate on restricting immigration, as southerners were perceived as a threat to the economy and culture of the North by part of the society (Fofi, 1964).

[24] My source is the archive of the national newspaper La Stampa, which is available since earlier than the 1960s and is free access.

from 1990s onwards. I gather information on (1) goods, properties and firms seized to mafias[25] (2) city councils dissolved due to mafia infiltration[26] (3) mafia-related victims[27] and (4) judicial evidence on which cities have a permanent 'Ndrangheta cell.[28] These information come from different sources, from institutions to NGOs, and locations, from local to national. Each of these measures is positively correlated to each other, which coefficients that range from 0.05 for very sparse measures (e.g. city-councils dissolved for mafia infiltration) to 0.5 for high density indicators. If mafia strongholds may successfully divert the investigative activities of the local police, it is less likely that they can also affect the activity of the parliamentary commission or of national newspapers.

Finally, since the type of activities mafias undertake might vary as a function of their level of penetration in the territory, with newly infiltrated places being less likely to display instances of violence to avoid alarming local authorities, I track multiple types of crimes, ranging from violence to extortion and infiltration in the legal economy.

For each scraped observation, I extract the date, location, title and the body of the article. For the subsample of news which do not have a location tag, I extract the name of the city where the event took place from the article's body and validate this procedure on the sample of news for which the newspaper itself reports the location of the event. For each city, I obtain a measure of news per capita that I aggregate at the decade level. Through this process, I am able to create the first municipal-level measure of mafia presence which varies in time earlier than the 1990s for the whole country.

In 17% (N=1046) of the cities in the center and north of Italy there is at least one news

[25] Law 646/1982, data are provided by the National Agency for Seized and Confiscated Goods (ANBSC).

[26] Law 221/1991 first established that city councils found to be infiltrated by criminal organizations would be dissolved and replaced by a public official nominated by the State in charge for one or two years, until new elections take place.

[27] A report on the victims of mafias was put together by a network of more than 1,200 NGOs working to counteract mafia activity by aggregating information from newspapers, books and police reports. I then transformed this report into a database including year, location and name of the victim. While data start being collected from very early on (the first victims are reported in 1863), there are only 17 observations in the period 1960-90 in the center and north of Italy, 3 of which in Milan.

[28] Information coming from reading of documents of the trials against mafia presence in the center-north of Italy: Aemilia, Crimine, Geena, Infinito, Maglio, Minotauro.

related to mafias in the period 1960-1989 and over this time period the number of mafia-related news, as well as the fraction of cities with news, is steadily increasing (Figure 22). Within these cities, the median number of mafia-related news is 2 or 8 per 10,000 residents. While on average cities with mafia-related news are larger, there are news related to mafia in towns of all sizes, including the smallest, and a plot relating news per capita and population shows no positive monotonic relation between these two variables (Figure 30, SI). Descriptive statistics on the main index of mafia presence and the variations used for robustness are included in Table 15, SI while Table 16, SI compares census indicators in cities with and without mafia-related news. Additionally, Figures 25 and 26 in the Appendix map each of the measures individually.

Validation of the news as a measure of mafia presence

To what extent is the distribution of news reflective of the true presence of mafias in 1960s-80s? While there are no data at the same point in time, we can compare news in 1960-1989 to the distribution of mafia presence later on, from 1990 to today, when official indicators are available.[29] News and official indicators agree in classifying cities as with or without mafia presence in 78% of the cases.[30] To examine the covariance between these two measures more closely, in Figure 2 I map the distribution of news 1960-1989 and official indicators 1991-2018. Since the objective is to assess the extent to which the two measures overlap, in this figure I compare the density of news and official indicators without normalizing by population, which changes (potentially endogenously) over time. We observe a relatively high correspondence in mafia presence across the two maps, reflective of a 0.77 correlation.

[29] While indicators are available from the 1990s, in this decade almost none of the indicators reports positive signs of mafia presence in the North, as the activities of mafias in this period were still undetected. While newspapers start mentioning the presence of mafia members and typical mafia-crimes already in the 1960s, the recognition that mafias had moved to the North and their prosecution starts in the 1990s. Due to the lack of positive observations, a comparison between news and indicators in this decade (the only period in which the two databases overlap) does not convey relevant information (map in Figure 29, SI.)

[30] The remaining 21% is composed of 11% of observations classified as having mafia presence today (official indicators) but not in 1960-89 (news) and 10% have news related to mafia in 1960-89 but no official indicator recording mafia presence today. Considering only cities with mafia presence today, 33% of those already displayed instances of mafia-related news in the 1960-80s.

Both maps indicate mafia presence in the surroundings of Rome, Milan, Turin and Genova.[31] Mafia is also present in the most common touristic destinations of the 1960-1989, the coastal area of Ravenna and Viareggio, as well as Venice. This pattern could be in line with mafias settling where large construction development took place in the years of the expansion, as those cities were the main destinations of the first mass tourism in Italy. There is instead a larger number of news than official indicators in the region of Piedmont, in the north-west. This likely happens because Turin is the city where the first scandal revealing the existence of mafias in the north took place. In line with this interpretation, before the scandal, which took place in 1971, the number of news in Piedmont is comparable to that of other regions.[32] Aside from this area, the two maps display a very high level of covariance in mafia presence, even though they rely on different sources and refer to different time periods, validating news as a predictor of mafia presence.

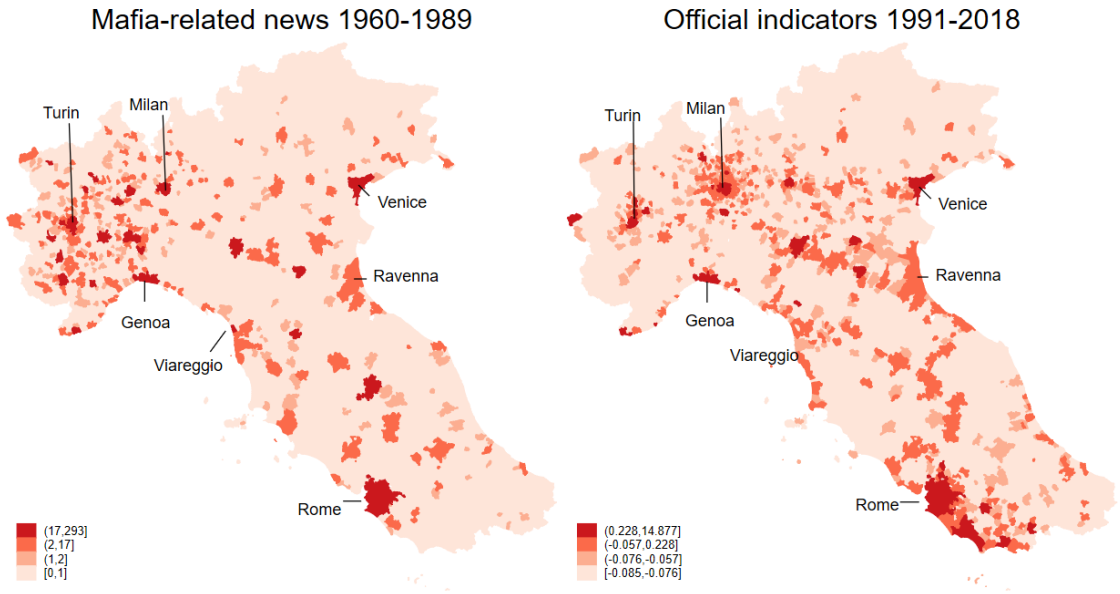
Comparison to other mafia measures

Compared to existing measures, my index allows to map mafia presence in Italy for a considerably longer period, starting from 1960 and until today. Current measures of mafias at the municipal level used in the literature start from the 1990s or later (Dugato et al., 2019). Mafia measures available as far back in time are completely absent or only reported for Sicily at a specific point in time (Cutrera, 1900). Not only the method followed in this study allows to map the entire country from as early as archives of news are available, at the municipal level and to verify the correspondence of news with other indicators, it also has the potential to be comparable to measures of organized crime in other countries built using the same methodology, allowing for consistent comparative studies of organized crime across space and time.

[31] The prevalence of mafia in large cities in the center-north is also verified in (Dugato et al., 2019). The opposite pattern holds in the south, where mafias tend to settle in smaller centers.

[32] The number of news in the decade 1960-1969 alone is plotted in Figure 28, SI. The scandal triggered the first journalistic and judicial investigations on this phenomenon, with several commissions investigating the presence of mafia in the cities surrounding Turin. It is therefore not surprising that the number of news related to mafia in this region is higher than in other places. In the analysis section, I will test the robustness of results to accounting for Piedmont, as well as for only considering news which have nothing to do with labor-racketeering.

Figure 2: Mafia presence as defined by news 1960-1989 and official indicators 1990-2018



Note: The map on the left plots the maximum number of news related to mafia (extortion, kidnapping, drug trafficking, labor racketeering, vote buying and news mentioning the word mafia or 'Ndrangheta) recorded in a city-decade between 1960 and 1989. The right panel plots the official indicators of mafia presence (average of standardized number of goods and properties seized to mafia, firms seized to mafia, mafia-related homicides, 'Ndrangheta outposts uncovered by the judiciary and city councils dissolved due to mafia infiltration) between 1991 and 2018. The source and time span of each indicator, as well as the validation of news are discussed in Section 2.4.1.

2.4.2. Other data

I obtained data on the number of employees by sector in each city and decade starting from 1951 from the Italian National Statistical Institute (ISTAT). While this number does not include illegal workers, a higher population share of employed workers in the construction sector indicates an industry in expansion and in need of unskilled workforce to hire. I combine employment in construction with data on inter-provincial migration, tracing the number of people moving from each of the 103 provinces of origin to each province of destination every year from 1955 onwards.[33] Figure 27, SI shows the geographic distribution of these two variables in per-capita terms before the economic boom started, in 1951 (construction) and 1955 (migration).

Other data used in the analyses include (1) census data on city characteristics from 1951 onwards, which I use as additional controls and for placebo tests, (2) census population in 1871, used to build the instrument for construction, (3) the Drought Severity Index in 1961-1989 provinces from Van der Schrier et al. (2006), used to instrument southern migration, (4) the number of forcibly resettled mafia members[34], used for exploration of the mediating effect of this variable and finally (5) national elections results 1948-2008 at the city level from the Ministry of Interior Affairs. Descriptive statistics on all variables are included in Table 15, SI.

2.5. Determinants of Expansion

2.5.1. Empirical Strategy

In this section, I start by introducing the baseline estimating equation. I then build and discuss the instruments for construction and immigration.

[33] I received the data from the IRPPS (Istituto di Ricerche sulla Popolazione e le Politiche Sociali). Since provinces vary over time, the institute has aggregated them to the 103 provinces present in the period 1974-1994.

[34] Commissione Parlamentare d'Inchiesta Antimafia, 1976

Baseline Estimation

I test the hypothesis that it is more likely to observe mafia expansion in cities with a joint increase in construction employment and in immigrants from the south, a workforce over which criminal groups had the capacity to exert control. In particular, I estimate:

$$Y_{it+1} = \alpha_i + \beta_t + \gamma C_{it} + \delta M_{pt} + \zeta C \times M_{it} + \epsilon_{it} \tag{2.1}$$

where Y_{it+1} is mafia presence in city i and decade $t+1 = [1970, 1980]$, C_{it} is the population share of employees in the construction sector in $t = [1960, 1970]$, M_{pt} the population share of immigrants from the south in province of destination p and α_i and β_t are city and decade fixed effects. Fixed effects imply that the coefficients γ, δ and ζ capture the change in mafia presence within the same city over time. This allows to exclude that results are driven by fixed differences in city characteristics, such as being a large, wealthy or low social capital city. To account for the concern that population is itself an outcome of migration, the number of migrants is scaled by the province population at time zero, 1951, before the migration waves started (Card and Peri, 2016).[35] Standard errors are clustered at the city level and the linearity assumptions to capture interaction effects using a linear model are tested in Section A.3, SI.

The coefficient of interest ζ captures the joint effect of an increase in construction employment and migration from the south on mafia presence. A positive effect of construction alone could simply indicate that mafias expanded by making profits in the construction industry, either owning businesses themselves or extorting other business owners. Similarly, an increase in migration alone could point to a role of migrants in favoring mafias expansion, for example because they engage in criminality themselves. Focusing on the *interaction* between construction employment and immigration from the south, instead, allows to specifically consider the contribution of a demand for unskilled labor to mafia

[35] Results obtained using current population are consistent and reported in Table 29, Col 3.

expansion when a migrant workforce is available for exploitation. If only this coefficient positively predicts mafia presence, then a boom in construction is only important to the extent that mafias can offer their services as providers of cheap workforce, and not for the other possibilities mentioned above.

In this baseline regression, estimates are likely to suffer from both omitted variable bias and reverse causality issues. For example, the reason why migrants are pulled in an area could be correlated with other time-varying factors that also attract mafia presence (e.g. economic development) or mafias themselves might attract southern immigrants. A similar story could be told for constructions, as investment in this sector might be higher due to mafia presence (Di Cataldo and Mastrorocco, 2019). I deal with endogeneity and reverse causality by instrumenting both construction employment and southern migration. The coefficients γ, δ and ζ capture the weighted average causal response in mafia presence to a unit change in treatment for those cities whose treatment status is influenced by the instrument. For example, the coefficient γ captures the average causal response in mafia-related news to a 1 standard deviation increase in construction employment with weights proportional to the number of cities in which construction changed as a function of the instrument.

Notice that the theory I propose is about the effect of the interaction between migration and construction employment, but these two variables alone are likely to have a direct effect on mafia presence for reasons that have little to do with the theory. For example, an increase in employment opportunities might reduce the number of people willing to undertake criminal activities. For this reason, I partial out the effect of these variables and focus on the interaction rather than on the total sum of the coefficients, as this would incorporate other effects than the impact of labor racketeering on mafia expansion.

Instrument for Construction

To instrument construction employment, it is necessary to find an exogenous shock which produced an increase in construction employment in a quasi-random subset of cities, while not affecting other outcomes which might be correlated with mafias arrival, such as economic

development. In 1865, the Kingdom of Italy approved a law allowing the adoption of a regulatory plan to cities with more than 10,000 inhabitants.[36] While no complete list of cities which eventually adopted the plan is available, a partial collection shows that at least 25% of the cities above the threshold adopted it and none below the threshold did, suggesting there were no defiers.[37] Adopting a regulatory plan led cities to decide of their development in advance, building infrastructures where new neighborhoods were to be created. In the 1960s, after the law was removed and the construction boom had started, cities which had been subject to better designed urban development and which had therefore more homogeneously spread infrastructures in place to build new neighborhoods, entered the economic boom in a better position to develop further and experienced a larger growth in construction. The cities affected by this policy are mapped in Figure 3 (red dots), which also shows the population share of construction employment after the start of the boom, in 1961.

The impact of the Law: Whether the policy actually produced a jump in construction employment is tested formally with a regression discontinuity design. Results, presented in Figure 4, show that the growth in construction employment jumps at the 10,000 inhabitants threshold in the years 1961-1971: being subject to a regulatory plan put these cities in a better position to develop faster when the boom in construction started. This effect is only visible during the years of the boom (1960s and 1970s) while it is absent both before (1951, no anticipation effects) and after, in the 1980s (Table 18,SI). This is consistent with the effect we would expect from a pre-planned urbanistic expansion: at the start of the construction boom, cities which developed according to the plan have a slight advantage because of better spread infrastructures facilitating the construction of new neighborhoods. Before the boom started, in 1951, this marginal advantage does matter so much as to determine differential construction growth. Two decades after the start of the boom, this advantage

[36] Law 2359/1865, Capo VI, Art. 86 was in force until 1942.

[37] Additionally, cities which adopted the plan for sure and cities on which we have no information have a similar distribution of construction employment, an indirect evidence that both groups might have been subject to regulated development (Table 17, SI). More details on the law are included in Section A.4.1.

disappears and cities which had been exposed to regulated development in the nineteenth century look the same as those that did not. Importantly the Law affected construction in the 1960s and 1970s, but did not have a lasting impact on any other characteristics of the cities recorded in the census in either 1951 or later (Table 20- 23, SI), which is reassuring in terms of exclusion restriction.[38] Additionally, an effect on construction exists only at the 10,000 population threshold and not at others (Table 19, SI). These results, the assumptions behind the RDD and other robustness tests are presented in detail in Section A.4.2, SI.

Instrument specification: I exploit the exogenous positive effect on construction employment induced by this Law to instrument employment in the construction sector. In particular, I interact a dummy equal to 1 for cities above the population threshold at the time the law was approved ($Above10k$, varying at the city level) with the growth in construction employment over time at the national level net of the contribution of city i. Formally:

$$ZC_{it} = Above10k_i \times \Delta C_t^{-\Delta C_{it}} \tag{2.2}$$

where the second term is the national per-capita growth in construction employment net of the contribution of city i.[39] Since $Above10k$ depends on population in 1871 (the first census after the approval of the law), there is the concern that city size might drive the effect. To account for this possibility, both in the first stage and in the main analysis, I control for the interaction of population in 1871 and the national growth in construction employment ($P_{i,1871} \times \Delta C_t$). This control ensures that the instrument only captures the jump in construction at the discontinuity, rather than incorporating the fact that (i) cities with larger population grow more and (ii) the effect of the regulatory plan on construction might be larger in bigger cities. In other words, this control guarantees that the only component of the instrument that is exploited is the shock in construction produced by the Law and that factors such as the actual city size or the way a larger city would be differentially affected by

[38] text

[39] In leaving out the contribution of city i (leave-out instrument), I follow the most recent literature using instrumental variables (e.g. Tabellini (2020b)). Results are robust to including this contribution.

Figure 3: Construction employees per capita 1961 (blue) and cities assigned to adopt a regulatory plan (red)

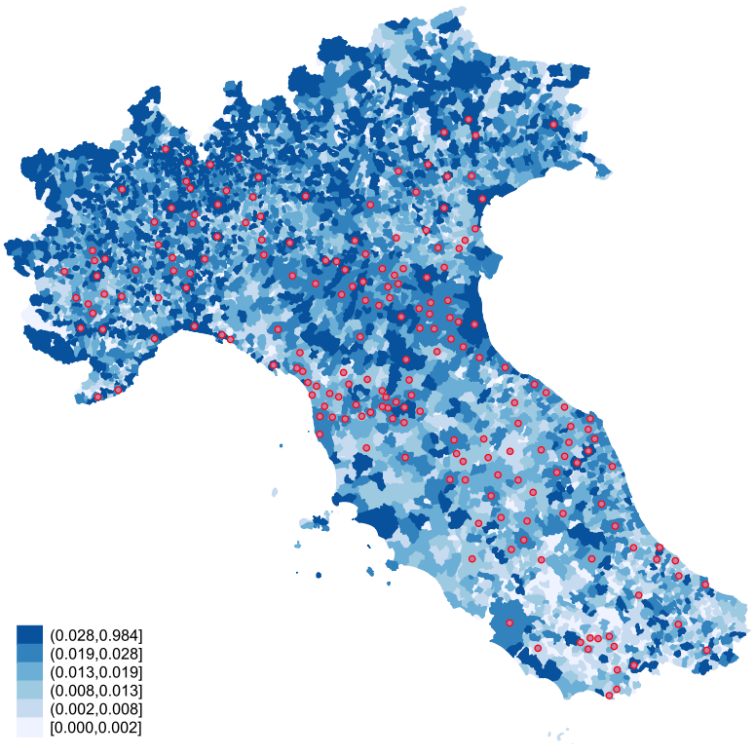
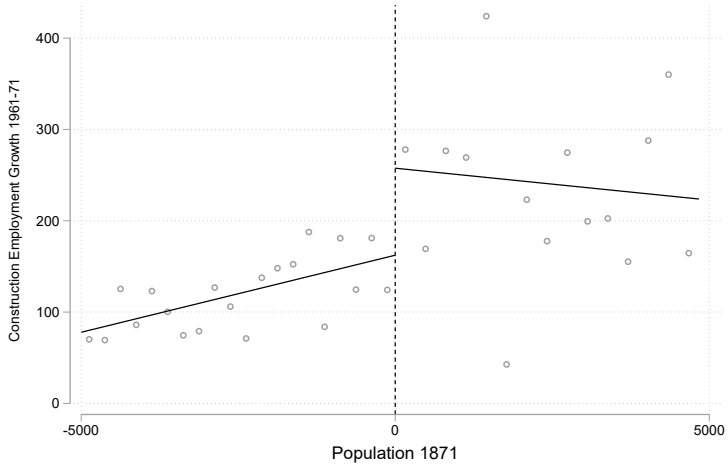


Figure 4: Effect of regulatory plan adoption on growth in construction employment at cutoff (RDD)



Note: Panel (a) overlaps construction employees as a share of the city population in 1961 with the cities which are assigned to adopt a regulatory plan according to Law 2359/1865 (red dots). Panel (b) shows the effect of the removal of a regulatory plan in place between 1865 and 1942 (for cities above 10,000 inhabitants) on the growth in construction employment in 1961 and 1971. Section A.4.2 provides details on the estimation and robustness of this result.

a larger national growth in this sector, are accounted for. Section A.4.3 provides a graphical representation of how the instrument predicts construction using examples from two cities above and below the cutoff.[40]

Identifying assumptions: Table 2, Column 1, tests the first stage and shows that the instrument strongly predicts construction employment in 1961-1971 while Figures 44- 45, SI indicate a monotonic effect of the instrument on construction. As discussed above, the threshold impacted construction employment but did not have any visible lasting impact on any of the other characteristics of the cities recorded in the Census, providing evidence in favor of the exclusion restriction. Identifying assumptions are discussed in more detail in SI, Section A.6.

Instrument for Migration

The instrument for southern migration is built using a modified version of the shift-share instrument (Card, 2001). The idea behind this instrument is that immigrants tend to cluster geographically and new waves of migrants are more likely to settle where pre-existing groups of individuals from their area of origin are located. If early settlers act as pull factors for subsequent migrants from the same area of origin, then their presence can be used to predict future migration without relying on current migration flows, which might be endogenous. The shift-share instrument exploits this logic by interacting two terms: (1) the share of initial settlers from a certain origin o who settled in province of destination d at $t = 0$ (in our case this is 1955, before mafias and mass migration started) with (2) the flows of migrants of the same origin at the national level at time t, net of the contribution of province

[40]The existence of a population cutoff allows to estimate an RDD for (1) the effect of the threshold on construction and (2) the effect of the threshold on mafia presence. The IV is my preferred estimation strategy for three reasons. First, it allows to consider the *interaction* between construction and migration which, as discussed above, is the quantity of interest in this chapter as it can be more directly linked to the role mafias played in exploiting migrant workforce in the construction sector. Second, even if the RDD allows to run heterogeneity analyses by high and low levels of migration, it forbids to account for the endogeneity of migrants destinations choices, which instead can be done with the IV (see next section). Finally, the RDD forces to run analyses only on the smaller sample of cities around the cutoff, discarding all information on small and large cities and making estimates sensitive to changes in the specification.

d.

$$ZM_{dt} = \frac{1}{P_{dt0}} \sum_{o} \sigma_{odt0} \times \Delta M_{ot}^{-M_{odt}} \tag{2.3}$$

where P is province population at $t = 0$,[41] σ_{od} is the share of initial settlers of origin o living in province d in the north in 1955, and the second term is the national flow of immigrants of origin o that migrated at time t, net of those that settled in province d.[42] This instrument is built such that the only component that varies at the local level is the share of migrants at time zero, before the move of mafias to the north. This choice accounts for the possibility that reverse causality - for example, that mafias attracted southern migrants where construction was higher - determines the finding. The second component, the national growth rates, predicts how the initial shares evolve in each province without relying on province d predictive power, as this would introduce endogeneity. Appendix A.5 illustrates the way in which the instrument is built and the variation underlying the prediction using an example from two provinces of origin and three provinces of destination.

Identifying assumptions: The instrument positively and strongly predicts the share of southern migration (Table 2, Column 2) and this relation approximates monotonicity (Figure 44- 45, SI). The same conclusions about instrument strength and monotonicity hold when considering the instrument interacting the two instruments for construction and migration (Table 2, Column 3).

Drought severity as a push factor: A recent literature has shown that violations of the exogeneity assumption in the shift-share instruments could arise from having either shares or flows systematically related to characteristics of the provinces of destination receiving more migrants from that sending province (Goldsmith-Pinkham et al., 2018; Borusyak et al., 2019). To account for this possibility, I run a robustness test in which the flows of migrants

[41] Following Card and Peri (2016), I do not scale the instrument for the contemporaneous population because this might introduce endogeneity in the instrument. However, I show results scaled by endogenous current population in the robustness section.

[42] Also in this case, I follow the recent literature using instrumental variables in leaving out the contribution of city i (e.g. Tabellini (2020b)), but results are robust to including it.

are predicted by exogenous pushes in migration patterns: the drought severity in different provinces of the south of Italy. At a time in which the transition from the countryside to the city was largely in progress, a severe drought would cause more people to abandon land cultivation in the south and look for employment elsewhere. This expectation is confirmed by a nonparametric plot of the relation between drought severity and number of migrants to the north (Figure 46), as well as by regression estimates (Table 25). I use the drought severity index from each sending province elaborated by Van der Schrier et al. (2006) to predict migration flows in each year from 1961 to 1971 exogenously. Besides relying on quasi-random variation, this instrument additionally lowers the serial correlation in migration flows over time, another issue threatening the validity of shift-share instruments (Jaeger et al., 2018). First stage results are displayed in Table 26, SI and show that also this instrument is relevant. Finally, I address the concern that observations with similar exposure shares might have correlated residuals, making standard errors invalid (Adão et al., 2019), following Borusyak et al. (2019) and showing that coefficients estimated at the shock-level are equivalent to conventional shift-share coefficients (Table 27). Importantly, with this instrument, no assumption is made on who migrates, whether poor unemployed people or members of criminal groups, so that the migration variable can potentially determine the arrival of both.

Table 2: First Stage

	(1) Emp Constr per capita	(2) Migr from the south per capita	(3) Emp Constr x Migr South
Z Constr Emp	0.017	0.050	0.019
	(0.006)	(0.008)	(0.005)
Z for Migr	-0.104	0.702	0.305
	(0.023)	(0.023)	(0.037)
Z Constr x Z Migr South	0.009	-0.086	0.005
	(0.006)	(0.009)	(0.007)
Observations	11,926	11,926	11,926
Number of cities	5,963	5,963	5,963
City, Decade FE	Yes	Yes	Yes
Mean DV	0	0	0
SW F-Stat	19.9	93.9	81.7
A-R Wald Test	28.1	28.1	28.1

Note: First-stage of Equation 2.1 testing the impact of each instrument (Z) on each variable. All values are standardized to their z-scores. Regressions control for the interaction of population in 1871 (determining the assignment of the regulatory plan) and growth in construction employment and include city and decade fixed-effects. Standard errors are clustered at the city level. I report the Sanderson-Windmeijer F-statistic for models with multiple endogenous variables.

2.5.2. Results

The main results of the instrumental variable estimation are presented in Table 3, Column 2. First, the direct average causal response of construction employment on mafia related news is negative and significant. This finding echoes a large literature which has shown that employment reduces crime by increasing the opportunity cost to engage in illegal activities (Blattman and Annan, 2016), which in this context might have made it harder for mafias to find enough recruits to expand to new areas. Second, the direct effect of southern migration on mafia is also negative, although barely significant. This is in line with recent literature on the relationship between immigration and crime, showing that migration has either no impact on the crime rate or that it reduces it, as migrants have lower propensity to commit crimes than natives once employment is controlled for.[43] The negative direct effect of these

[43]See for example Bianchi et al. (2012); Bell et al. (2013); Reid et al. (2005); Pineau and Waters (2016)

two variables on mafia presence allows to exclude that criminal organizations expanded by making profits in the construction industry (owning or extorting businesses) or that migration itself might have caused an increase in crime.

Instead, the coefficient of interest capturing a *joint* increase of construction and migration, has a positive and significant impact on mafia presence. When both migration and construction increase by one standard deviation, there is an increment of 0.098 mafia-related news per 100 inhabitants. If we consider a median-sized city of 2,000 inhabitants, this would pass from having no instance of mafia presence discussed in the newspapers to 2 news in a decade, relative to a city experiencing growth in construction but not in migration (or growth in migration but not in construction employment).

To illustrate this interaction, Figure 5 plots the change in mafia presence caused by an increase in construction employment by values of migration from the south (left panel). For above average levels of southern migration (i.e. at and above zero), an increase in construction employment increases the probability to observe mafias. A similar dynamic is visible considering the change in mafia presence caused by southern migration (right panel): for sufficiently high levels of construction employment, an increase in southern migration generates a positive change in the probability to observe mafia expansion. Like in every instrumental variable approach, results have to be interpreted as the effect on compliers, i.e. those cities in which construction and migration changed as a result of the instrument.[44;45]

[44]Since this is a setting with 3 continuous regressors and 3 instruments, it is not possible to profile compliers, as there would be (i) a different set of compliers for every level of each variable and (ii) for every combination of values of the variables (Abadie, 2003).

[45]The difference between OLS and 2SLS estimates indicates that construction employment, migration and their interaction are endogenously related to mafia presence. The positive bias in the OLS coefficient for construction could be due to its correlation with economic development, which is likely to attract mafias for the larger profit opportunities it promises. Migration from the south is likely to both attract and be attracted by mafia members, explaining the positive bias in the OLS. Places with high levels of construction and migration tend to be more educated and more likely to vote for the Communist Party before mafias arrival, a circumstance which might have made it harder for criminal groups to expand, by reducing their margin of action. Additionally, as in all IVs, 2SLS estimates correct for measurement error in the independent variables by capturing only the variance in regressors caused by the signal and leaving out the noise. While the OLS estimates are skewed towards zero by attenuation bias, the IV estimates reduce this bias and result in larger coefficients.

Table 3: Joint effect of construction employment and southern migration on mafia presence

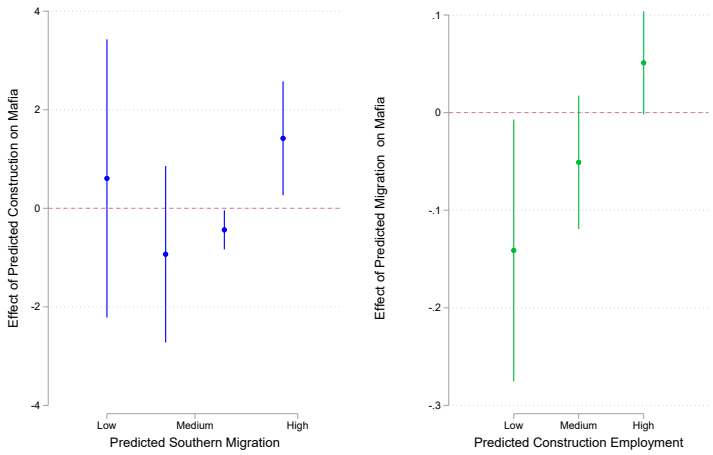
	(1) Mafia (OLS)	(2) Mafia (2SLS)
Emp Constr pc	0.0026	-0.169
	(0.0041)	(0.052)
Migr South pc	0.0216	-0.032
	(0.0082)	(0.017)
Emp Constr x Migr South	0.0039	0.098
	(0.0057)	(0.041)
Observations	11,926	11,926
Number of cities	5,963	5,963
City, Decade FE	Yes	Yes

Note: OLS (Col 1) and 2SLS (Col 2) estimates of Equation 2.1, capturing the effect of construction employment per capita, migration from the south per capita and their joint impact on mafia presence. All regressors are standardized to their z-scores. Mafia presence is defined as the population share of news related to mafia in a city-decade at $t + 1$ (1971-1981). City and decade fixed effects are included in all estimates, together with a control for the interaction of population in 1871 (determining the assignment of the regulatory plan) and national growth in construction employment. Standard errors are clustered at the city level.

Robustness

A first order concern is how much results depend upon the way mafia presence is defined. Does the treatment increase mafia presence or just the probability that mafia-related crimes take place and are reported, which might coincide with where mafias are weakest? While this is a typical limitation in the literature on crime (Crost and Felter, 2016), this setting allows to speak to this concern. In the robustness section (Section A.7, SI), I obtain a closer mapping between mafia-related news and official indicators of mafia presence starting from 1990s and which (i) are reported from different levels of government, reducing the concern that we only observe mafias where institutions are not captured, and (ii) return a complete picture of mafias' activity, from violence to their infiltration into the economy. I use a lasso and a random forest algorithm to select only news that predict official indicators of mafia

Figure 5: Effect of construction and migration on mafia presence, by levels of the other variable



Note: The left figure plots the marginal effect of instrumented construction employment on mafia-related news by quartiles of southern migration. Each coefficient is obtain from regressing mafia on construction subsetting the sample for the relevant quantile of migration. The figure illustrates for which values of migration construction has a positive effect on mafia presence. Similarly, the right figure plots the marginal effect of instrumented southern migration on mafia presence by levels of construction employment.

presence from later on. Results are also robust to excluding news of labor-racketeering and news mentioning the word mafia or 'Ndrangheta. I assume mafia presence to be present even if it was not observed at t when it was at $t-1$ and I consider a placebo test using lagged news at $t-1$.[46] I also winsorize news to exclude that potential outliers drive the findings and transform the dependent variable to logarithmic to account for its skew towards zero (results in Table 28, SI).

I also test the robustness of results across a set of different specifications and transformations of the instruments, such as exogenously predicting the flows of migrants using drought severity in the south as push factor, restricting the sample to the optimal bandwidth selected by the RDDs and considering the regions Abruzzo and Molise as southern Italy (Table 29). These and other tests are described in detail in Section A.7, SI.

[46]The negative, close to insignificant coefficient on this test reduces the concern that more news could be reported in the region of Piedmont just because this is where the newspaper La Stampa is located.

In Section A.8, SI, I further characterize results in three ways. First, I show that high levels of competition to hire unskilled labor (high construction employment) rather than competition between businessmen for consumers (higher number of firms) triggered mafia presence. Second, I discuss why it is unlikely that criminals moved north with the explicit ex-ante plan of exploiting a demand for construction employment and southern migration and rather it seems more plausible that places in which these conditions were present are those in which mafias were successful at planting roots. Finally, I subset the main analysis by levels of forcibly resettled mafia members in a province (Pinotti and Stanig, 2016) and show that, although more resettled mafiosi might have made expansion easier, results are robust across levels of resettled mafia members.

2.5.3. Tests of the mechanism

Migrants not subject to mafias control: An important part of my hypothesis is that migrants have to be controllable by mafias for them to be exploited as illegal workforce. Migrants from the south are subject to the reputation of mafias and they can often be blackmailed with the threat of hurting their family members who stayed behind if they rebel or denounce. Instead, this reputation and coercive power should not apply to the same extent to migrants coming from regions outside of the south. I thus repeat the main analysis using migration from all other regions of Italy excluding the south as independent variable. Table 4, Column 1 shows that the effect on mafia presence disappears completely when we consider migrants who come from the center and north of Italy. Although the instrument for northerners migration is not strong, we observe that neither migration alone nor migration interacted with construction seems to have any effect on mafia presence and if anything the coefficients are negative (Column 1, Table 4).

Competitive but regulated or not labor intensive sectors: Another implication of the hypothesis is that cheap illegal workforce must be a useful tool to reduce competition. In sectors that are not labor intensive or where hiring illegally is not an option, the offer of cheap illegal labor might be unattractive to local actors, even if competition is high.

In the years of the economic miracle, car manufacturing, petrol chemistry and retail sales were also booming together with the construction sector. However, the retail sales of the 1960s and 1970s consisted of small shops, mostly employing family members, not in need of additional workforce and selling to local customers, such that speaking the language was important to be in the business. The car manufacturing and petrol-chemistry sectors, instead, were overwhelmingly dominated by Fiat and Eni, two large companies, one of them public, the other under close public scrutiny and thus both unable to hire illegally. In all these three examples, the offer of illegal labor was unattractive to local actors and we should not expect the interaction of migration and growth in employment to predict mafia presence. Instrumenting each of these types of employment using a shift-share instrument, we observe an insignificant effect on mafia expansion in all cases (Column 2 and 3, Table 4).

Skill-intensive sectors: Sectors requiring high-skilled labor are unlikely to benefit from the offer of unskilled workforce. Again, the effect of an increase in employment in these sectors[47] on mafia presence is null whether we consider the coefficient alone or in combination with migration from the south (Column 4, Table 4). These results need to be taken with caution since the first stage is weak.

[47]The categories present in the Istat which clearly employ skilled workers are financial and insurance services, press and editorial services and communications.

Table 4: Test of the mechanism

	(1) Migr not under mafia control	(2) Not labor intensive (Retail)	(3) Highly regulated (Fiat, Eni)	(4) High-skill labor
Share Employed	0.197	-0.370	0.269	0.059
	(0.573)	(1.230)	(0.936)	(0.061)
Migr North pc	0.069			
	(0.121)			
Emp x Migr North	-0.349			
	(0.677)			
Migr South pc		1.265	-0.037	0.037
		(4.270)	(0.281)	(0.012)
Emp x Migr South		-1.441	0.126	-0.005
		(4.991)	(0.512)	(0.017)
Observations	17,889	11,926	11,926	11,926
Number of cities	5,963	5,963	5,963	5,963
City, Decade FE	Yes	Yes	Yes	Yes
F-Stat	51.55	296.9	45.20	34.44
SW F-Stat	1.350	0.160	0.120	1.600
A-R Wald test	9.500	31.50	55.60	40.30

Note: Col 1 replicates the main analysis using migration from the center and north of Italy (not under mafias control). Col 2 and 3 consider employment in sectors booming but not in need of unskilled illegal workforce because not labor intensive or highly regulated. Col 4 examines sectors employing high-skilled workers. Mafia presence is the population share of news related to mafia at $t+1$ (1971-1981). City and decade fixed effects are included in all estimates. Only Col 1 controls for the interaction of population in 1871 and growth in construction employment. Standard errors are clustered at the city level.

2.6. Effect of mafia on politics

Up to this point, we have considered what allows criminal organizations to expand to new areas. I now turn to examining its effects: does criminal infiltration impact politics? Studying the effect of criminal infiltration on politics allows me to test a second prediction of the theory: that actors striking a deal with organized crime will benefit from the agreement, gaining an edge over competitors. I exploit the existence of judicial evidence documenting agreements between criminal organizations and the Christian Democracy (DC), to test whether the party gains votes in cities infiltrated by criminal organizations.

While it was never the party as a whole to be infiltrated by organized crime, a number of members of the DC were either part of or had agreements with criminal groups and the

existence of an electoral exchange has been documented both judicially and empirically. Mafias' support for the DC started from the very first elections after WWII as a way to extract political favors from the party which had clearly emerged as the leading one (Lupo, 2009). Trials for mafia association have involved important members of the party, including the seven times Italian DC Prime Minister Giulio Andreotti. While Andreotti was later acquainted for insufficiency of proofs, the judges described the PM as having "an authentic, stable and friendly relationship with members of the Sicilian Mafia" (Dickie (2004), pp. 322-3). From an empirical perspective, De Feo and De Luca (2017) have shown that in Sicily, cities affected by mafias (instrumented with its 1900 distribution) were 13 percentage points more likely to vote for the DC. Was the same pattern taking place in the center and north of Italy? Anecdotal evidence from a few cases in which the presence of mafias was uncovered suggests so. For example, in the town of Bardonecchia, the boss Rocco Lo Presti had asked migrants working for him to transfer their address in the north in order to be able to vote there and switch the balance in favor of the candidate for mayor he had connectinos to. The city council of Bardonecchia was subsequently dissolved for being controlled by criminal organizations. Besides Bardonecchia, eight other city councils in the center and north of Italy were dissolved for the same reason and many other cases of vote buying which did not lead to a council dissolution are reported by newspapers.

2.6.1. Empirical Strategy

I test if and to what extent the vote share of the DC in the center and north of Italy changed in cities infiltrated by mafias using an instrumented difference-in-difference approach. I instrument mafia presence exploiting the exogenous variation in construction and migration described in Section 2.5.2 to obtain a measure of average predicted mafia in a city. Relying on instrumented mafia presence allows me to account for why mafias established in certain cities and not in others, a behavior which is likely to be correlated with voting patterns. While a quasi-randomly assigned treatment is not necessary in DiD designs, in this case simply using mafia presence as treatment does not yield parallel trends in voting for the DC before mafia arrival (Table 32, Col 2, SI). In cities with mafia, there was already an increase

in DC vote share in the 1953 elections, a pattern which might have facilitated criminals' endogenous settlement in these cities. I then exploit the absence of mafias in the center-north up to until election year 1953[48] to estimate a difference in difference specification comparing cities with and without (instrumented) mafia presence, before and after the arrival of mafias. Specifically, for each city i and election year e, I estimate:

$$Vote_{it} = \eta_i + \kappa_t + \lambda \widehat{Mafia}_i \times Post_e + \mu X_{ie} + \nu_{ie} \tag{2.4}$$

where $\widehat{Mafia}_i$ is average predicted mafia presence from the instrumental variable approach described in Section 2.5.1, $Post_t$ is a dummy equal to one after 1957 and η_i and κ_e are city and election year fixed effects. The coefficient of interest is λ, capturing the effect of predicted mafia presence on the vote share of the Christian Democracy in each election year from 1958 (first election after mafia arrival) onwards. For ease of interpretation, I transform predicted mafia presence into its zscore. In all regressions, I control for migration from the south, construction employment and their interaction (X) to account for the exclusion restriction. Also these variables are predicted from IV estimates as they are endogenously related to the treatment. Standard errors are clustered at the city level. Section A.9.1, SI discusses the identifying assumptions in detail, showing the existence of parallel trends in vote share before the arrival of mafias and discussing the exclusion restriction.

2.6.2. Results

After the start of mafia expansion, an increase by one standard deviation in predicted mafia presence produces a 1.2 percentage points increase in the vote share of the DC (Table 5), corresponding to a 2.5% increase with respect to an average of 45%. Since the number of voters (the denominator in the DC vote share) might itself be endogenous to mafia arrival, I also consider estimates using the absolute number of votes for the DC in its logarithmic transformation and controlling for city population. Results in Column 2 point to the same

[48] Not only the boom in migration began from later on, but also the policy of forced relocation of mafiosi only started in 1956. Anecdotally, all recorded cases of mafia presence in the north start from after this period. It is thus safe to consider 1953 as a time before the arrival of mafias.

Table 5: Effect of predicted mafia presence on DC vote share 1948-1992 (DiD)

	(1) Vote share DC	(2) Log total DC vote
Mafia x Post 1957	0.012	0.025
	(0.002)	(0.006)
Observations	62,870	62,784
Number of cities	5,961	5,961
City FE	Yes	Yes
Election Year FE	Yes	Yes
Mean DV	0.452	6.427

Note: Results from the DiD in Equation 2.4, estimating the effect of mafia presence (predicted from IV estimates) on vote for the DC after mafia-arrival (Post 1957). In Col 1 I consider the vote share and in Col 2 the log of total votes controlling for city population. Controls for construction employment, southern migration and their interaction (predicted from IV estimates), city and year fixed effects are included. Standard errors are clustered at the city level.

conclusion, although the effect size is smaller.[49] This finding is robust to considering year 1958 as pre-mafia arrival and to removing controls for migration and construction (Table 34, SI).

2.6.3. Is the electoral advantage driven by mafias?

In absence of judicial evidence, it is hard to demonstrate empirically that the electoral advantage of the Christian Democracy in mafia-affected cities was driven by mafias' capacity to provide votes to the party. However, I provide suggestive evidence in line with this possibility and I discuss the likelihood that alternative explanations drive the findings.

Voting pattern: stable and persistent in the face of political shocks

In Figure 6 and Table 32, Col 1, SI, I examine results year by year by interacting predicted mafia presence with each election year and using year 1953 (pre migration boom) as reference category, so that coefficients can be interpreted as the change in vote share for the DC from

[49] A smaller effect size considering total votes implies that cities affected by mafias turnout at lower rates. This is partly due to a reduction in vote for left wing parties (Table 33, SI), which might be consistent with turnout suppression.

before to after mafias' arrival in cities without mafia (first set of coefficients) and with mafia (second set of coefficients). The pattern of vote in cities without mafia coincides with what we know from the history of the DC. From the mid-seventies, the DC started losing voters, a crisis which became deeper with the fall of communism and the exhaustion of the anti-communist mission which had fueled the party's supremacy. In 1992, with Tangentopoli, the largest corruption scandal in the history of the Italian Republic which directly hit the Christian Democracy (Daniele et al., 2020), the vote share for the DC dropped by 15 percentage points compared to 1953. The party was dissolved the subsequent year.

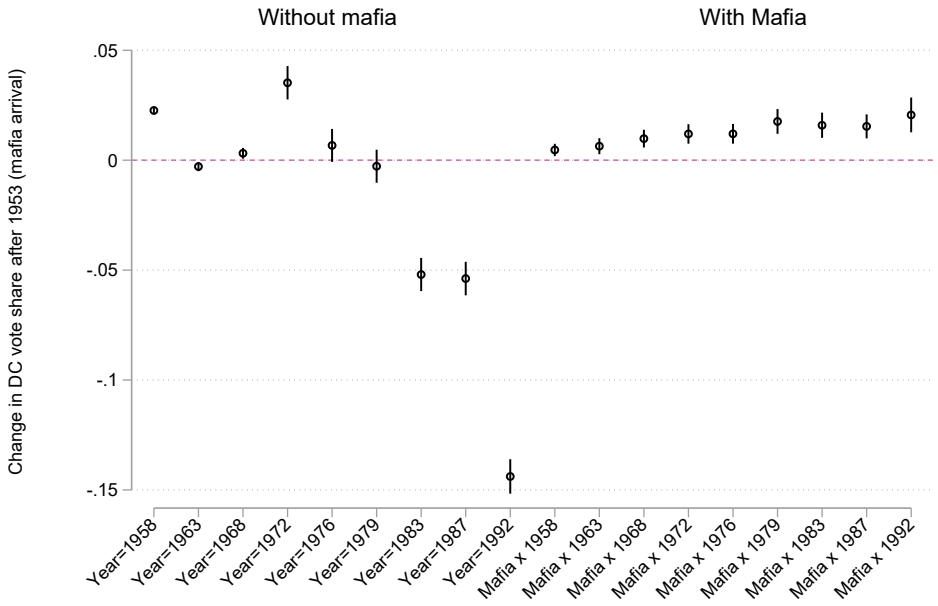
While the voting pattern in non-mafia cities reflects the historical trajectory of the party, the differential change in vote share for the DC in mafia-cities compared to before 1953 is positive and growing in each year, ranging from plus 0.4 in 1958 to plus 2.1 percentage points in the last year of elections, 1992. This pattern is somewhat surprising: the electoral advantage the DC gained in cities with mafias is inelastic to large historical upheavals, such as the fall of the Berlin wall and the end of communism, as well as the largest corruption scandal in the history of the Italian Republic. Additionally, the electoral advantage we observe in cities with mafia is small (as we would expect form mafias' capacity to buy votes in the context of a strong democratic polity only recently infiltrated), increasing over time and rather stable. If criminals have the capacity to use their influence to mobilize voters, we should not expect them to be able to buy 5% of votes in one year and 0.2% in the next.

This competitive edge, only characterizing mafia-affected cities, appearing only from after the arrival of mafias, that is small but growing and unresponsive in the face of political shocks which determined a dramatic fall in consensus everywhere else, is suggestive that this edge might have been provided by increasingly infiltrated criminal groups.

Targets of vote buying

If mafias were indeed buying votes for the DC, who were they gathering these votes from? Consistently with the the theoretical framework, if mafias had control over southern migrants, we should expect places in which southern migrants were more present to vote for

Figure 6: Change in vote share for the DC post 1957 (after mafia)



Note: Change in vote share for the DC in each year post 1957 (after the arrival of mafia in the center and north). The first set of coefficients refers to year FE, the second to the interaction of each year with mafia presence.

the DC at higher rates. There is some evidence in favor of this hypothesis: interacting the population share of migrants from the south with predicted mafia presence, I find that cities with more migrants and mafia presence turned out at larger rates after mafia infiltration and turned out more for the DC both if we consider its vote share and its absolute votes - although the coefficient is marginally insignificant in both cases (Table 6). The result might still be unconvincing if we suspected that migrants that moved to cities without mafias are of a different type (e.g. more educated than those moving to cities with construction booms). If this was the case, the finding that migrants vote more for the DC only in mafia-affected cities could be the consequence of demographic differences, rather than in the pressure imposed by mafias on their voting behavior. This does not seem to be the case: more educated voters tended to vote more for the DC (Table 35), meaning that demographic differences, if anything, might bias the result we observe in Table 6 towards zero.

Table 6: Effect of mafia and migration on DC vote share and turnout 1948-1992

	(1) Turnout	(2) DC share	(3) Log DC votes
Mafia Post 1957	-0.005	0.011	0.006
	(0.001)	(0.003)	(0.009)
Migr South	-0.054	-0.049	-1.115
	(0.011)	(0.023)	(0.116)
Mafia Post x Migr South	0.015	0.017	0.219
	(0.005)	(0.015)	(0.153)
Observations	62,871	62,871	62,785
Number of cities	5,962	5,962	5,962
City Year FE	Yes	Yes	Yes

Note: Results from a DiD estimating the effect of mafia arrival joint with southern migration per-capita (both predicted based on IV estimates) on turnout, DC vote share and log DC votes from 1948 to 1992. Controls for predicted employment in construction, city and year fixed effects are included and standard errors are clustered at the city level.

Effect on politics in the long run: vote share for Berlusconi

The Christian Democracy dissolved after the elections in 1992, buried by the Tangentopoli scandal. But if vote buying was taking place in some cities, what happened to mafia-controlled votes? Recent judicial evidence is proving that Silvio Berlusconi inherited both the incumbency advantage of the DC and the connection with criminal groups.[50] I test whether this support is visible in the data. In this specification I use a simple IV approach without relying on the pre-post difference, as there is no period before mafia arrival that could allow using a DiD. Election year fixed effects are, however, included. Comparing cities with and without mafia in each election year after 1992, I find that mafia-affected cities are significantly more likely to vote for the party of Silvio Berlusconi. The result is positive but insignificant considering the total vote for the party (Table 7).

[50]For example, it is proven that for 20 years Berlusconi transfered semesterly payments of 50 million Lire to Cosa Nostra and that the Cosa Nostra boss Vittorio Mangano was living in Berlusconi's house, hired as a stable boy for horses (See L'Espresso., February 23, 2018). Another trial is currently examining the role of Berlusconi in the season of mafia-related massacres of 1993-1994. (Il Corriere, September 25, 2019.)

Alternative stories

Voting for security: The electoral advantage of the DC in mafia-affected cities might be compatible with other interpretations besides vote buying. First of all, voters might be reacting to mafia presence by voting more for the right-wing party (the DC). Historically, this was not the case. While mafias' expansion to center and northern Italy started in the 1960s, the state only acknowledged transplantation in the late 1990s and still today only 8.5% of survey respondents believe mafias "exist also in the rest of Italy" (Libera, 2019). Second, if any party could be depicted as actively opposed to criminal organizations, this would rather be the Communist Party. For this explanation to drive results we would thus need to assume that voters were (i) sophisticated enough to realize that mafias were expanding to their city, although institutions did not acknowledge it and even now this perception is not diffused, and at the same time (ii) ignorant enough to be incorrect on party's stances with respect to mafias.

Voting against migrants: Second, these results could reflect natives' reaction to the arrival of southern migrants. If cities affected by mafias were also more likely to receive southern migration and if voters were opposed to it, they might have voted at higher rates for the right-wing party. This interpretation is also compatible with the result showing larger effects in cities with southern migration. First, all regressions control for migration to partial this effect out. Second, if an anti-southern immigration story explains results, we should expect that after the collapse of the Christian Democracy, those votes transfer to the party which most of all represented anti-southerners instances, the Lega Nord. However, results in Table 7 show that this is not the case: the Lega Nord received significantly less votes in cities infiltrated by mafias.

Migrants vote DC: A third possible explanation is that migrants themselves voted at higher rates for the DC and later for Berlusconi. In Table 6 we can observe that, while southern migrants in mafia-affected areas are more likely to vote for the DC, this is not true in general of migrants from the south. In both columns, we observe a negative and

Table 7: Effect of mafia presence on voting in the long-run (1994-2008)

	(1) Berlusconi vote share	(2) Berlusconi log tot votes	(3) Lega Nord vote share
Mafia predicted	0.005	0.013	-0.007
	(0.001)	(0.012)	(0.002)
Observations	29,178	29,174	29,178
Number of cities	5,959	5,959	5,959
City FE	No	No	No
Election Year FE	Yes	Yes	Yes
Mean DV	0.247	5.847	0.139

Note: IV estimates of the effect of mafia presence on vote 1994-2008. Election year fixed effects are included and standard errors are clustered at the city level.

significant coefficient, meaning that migrants voted less for the DC in cities without mafia. That migrants from the south only vote more for the DC in cities with mafia presence and not in general suggests that this alternative explanation does not drive the findings.

Other differences between cities: Finally, differences between cities with and without predicted mafia presence do not seem to explain the differences we observe in voting. For example, replacing population with mafia presence in Equation 2.4 yields a zero, insignificant coefficient (Table 35, Col 1, SI). I replicate the results replacing mafia with all the covariates on which the largest differences between cities with and without mafia are found: coefficients, even when positive and significant, are too small to explain the findings.

2.7. Conclusion

While the emergence of criminal organizations has been attributed to problems inherent to weak states, their expansion to a number of areas with strong institutions and flourishing economies requires a new explanation. I propose a theory according to which organized crime expands to strong states by striking alliances with local actors facing high levels of competition. Criminal groups offer illegal resources to these local actors to gain an edge over their competitors. I show that an important case of successful criminal expansion, the

move of southern Italian mafias to the north, responded to this logic and was allowed by two factors: a boom in construction which caused an increase in demand for cheap unskilled labor and the arrival of immigrants from the same area of origin as mafias which the state did not integrate and over which criminal groups had control. The provision of cheap irregular labor to local actors gave criminal groups the opportunity to create networks of mutual dependence in their destination territories without risking to be denounced to the police. This explains why the repressive apparatus of a strong state failed in counteracting the infiltration of mafias to the center and north of Italy. I provide evidence in line with the theory also by testing a second prediction: that actors striking agreements with criminal groups should gain a competitive edge from the agreement. I exploit the existence of judicial evidence of connections between criminal groups and the Christian Democracy to show that this party gained an electoral advantage in cities infiltrated by criminal groups, only after infiltration.

While in this chapter I examine the expansion from south to north of Italy, there are a number of other cases in which the migration of criminals and people from the same area as criminal groups coincided. For example, in the early days of the Italo-American mafia in the US, mafia-members were acting as intermediaries between locals and their compatriots to exploit them as labor force through the so-called "padrone system" Lupo (2009). The most prominent criminal group currently present in the US, the MS-13, arrived from Salvador at the same time as a wave of refugees escaping civil war. Similarly, the formation of the Mhallami criminality, currently one of the most dangerous groups in Germany, coincided with the immigration of people of Turkish-Mhallami origin and 'Ndrangheta presence in Australia has been linked to the waves of migration from Calabria in the 1950s. Today, anecdotal evidence on the Nigerian Black Axe expansion into Italy suggests that this group is thriving by exploiting the work of migrants from their country of origin at conditions close to slavery in the agriculture and construction sectors. Control over migrants, capacity to strike deals with local actors and necessity to build reputation, networks and governance are features common to all types of criminal groups. That other cases of expansion of criminal

organizations to strong states have similar characteristics to those studied in this chapter, suggests that the dynamics I documented using micro-level evidence from Italy might travel to other regions.

The dynamics documented in this chapter are, in conclusion, rather common: the combination of a mass of poor, marginalized migrants and a group of criminals exploiting them for profit has happened across many countries and time periods. Up to this point, however, it was not clear that this phenomenon of exploitation could contribute to criminal groups' expansion. An important policy implication of my results relates to immigration policy. Immigrants are more likely to resort to exploitative illegal employment options offered by criminal groups when states fail to facilitate their integration and even more when integration in the legal market is made difficult by immigration laws. This study suggests that reducing the opportunities for criminals to profit from migrants' condition goes beyond the protection of victims and spills over into the prevention of organized crime expansion.

The Electoral Effects of Fighting Migrants' Exploitation: Evidence from an Information Dissemination Campaign

Abstract

Policies that favor the integration of migrants frequently increase xenophobic voting and backfire against their promoters, making integration a politically difficult objective to pursue. I study the effects of new type of intervention that seeks to integrate migrants by giving them the tools to denounce cases of labor exploitation in agriculture. I exploit the city-time varying nature of the intervention to test its effect on both immigration and politics. The intervention (i) increased police reporting of labor exploitation and prosecution of criminal organizations, who are often responsible for smuggling and controlling migrants; (ii) raised awareness among the civil society and policymakers and, importantly, (iii) increased the vote share for pro-integration parties while producing no surge in far-right parties voting. I propose an explanation for this last result and test it with a survey experiment: learning about migrants' exploitation might have fostered sentiments of sympathy and a desire for more integration for migrants, shifting moderate voters towards pro-immigration parties. This chapter shows that fighting migrants' exploitation directly hurts criminal groups and identifies the conditions under which integration policies can improve migrants' situation at no political cost for parties supporting them.

3.1. Introduction

As migration flows increase across countries, governments are presented with the difficult task of identifying policies that effectively promote migrants' integration while also minimizing the prospect of backlash from the electorate. Policies that remove barriers to migrants' employment have been shown to reduce both unemployment and crime rates (Hainmueller et al., 2016; Pinotti, 2017), but they have also proven an important pull factor for the arrival of new migrants (Blair et al., 2020; Holland et al., 2020), an eventuality strongly opposed by a sizable fraction of constituents for both cultural and economic reasons. When governments decide to pursue integration policies, they are often targets of electoral backlash and lose their majority to xenophobic parties (Sniderman et al., 2007; Marbach, 2020). On the other hand, giving voters the power to decide which migrants should be granted citizenship has produced lower naturalization rates and substantial discrimination (Hainmueller and Hangartner, 2019). The tension between the benefits of integration and its electoral costs makes the need to identify policies that promote integration without creating political backlash a first order priority.

In this chapter, I study a new type of intervention that was launched by a union in a limited number of locations, but which could be scaled up nationally. This initiative differs from previous studies in that it seeks to facilitate migrants' integration by endowing them with the tools to denounce labor exploitation. Starting in 2007, the Italian union for agricultural workers launched an information dissemination campaign of in-person canvassing to provide migrants working in agriculture with information about their rights as workers and ways to denounce cases of gangmaster system. The initiative aimed at fighting the systematic exploitation of undocumented migrants in agriculture, working for extremely low pay, in conditions of enslavement[1] and often under the control of criminal organizations.[2] Between

[1]Enslavement is the term used by the judiciary and the crime for which many of the gangmasters have been prosecuted (Article 603 Ter, Penal Code).

[2]Migrants working in agriculture are often victims of human trafficking by foreign mafias in agreement with local criminal organizations. These groups smuggle migrant workers to Italy promising good employment conditions, but then force them into hard labor and control their behavior under threat of retaliation against themselves or their family members. Source: Parliamentary Commission Investigating on Mafias, Document XXXIII N. 30, Legislature XVII, page 52.

2007 and 2015, the union identified and reached 48 locations in which labor exploitation was taking place and provided workers with information as well as legal assistance. Importantly, undocumented migrants can apply for a special residence permit in case they can demonstrate they have been subject to exploitation, an application that unionists offered help in preparing.

I assess (i) whether this intervention was effective at increasing reporting of cases of labor exploitation, (ii) whether it raised awareness among the public and state institutions and (iii) whether it had electoral consequences. To identify the effect of the intervention, I present results across different specifications which account for different sources of potential bias. First, I present results in a classic Difference-in-Differences framework comparing treated cities to the full sample of cities in the control group. To account for possible selection bias in the choice of treated locations, I restrict the control group to a sample selected based on matching on pre-treatment city-characteristics. Third, I relax the parallel trends assumption using a staggered treatment design, comparing only within the sample of treated cities those treated earlier or later. Finally, I account for treatment heterogeneity bias by using a stacked design on the model of Deshpande and Li (2019). I present three results.

First, the intervention increased reporting of exploitation, as measured by media coverage of cases of gangmaster system in the two main national newspapers. News in treated cities do not simply document the intervention of the union, rather they report cases of denounced and prosecuted labor exploitation and of civil society and policymaking initiatives against gangmaster system. The intervention also led to a substantial increase in the number of properties that were seized due to being discovered as owned by criminal organizations. This finding can be interpreted as the direct effect of the intervention, which by increasing reporting against gangmasters, often affiliated with criminal groups, led to the discovery and seizure of more mafia-owned properties.

Second, the intervention increased institutional mobilization against this phenomenon: in

treated cities, there is an increase in the rate at which public administrations redistribute mafia-seized properties for public use. The increase is particularly large for redistribution towards local agricultural cooperatives, who employ workers legally and commit to non-exploitative working conditions.

Finally, I consider the effects of the intervention on voting. I find that the union initiative increased the vote share for the far-left by 1 percentage point, an increase that is statistically significant and consistent across specifications. While evidence on other parties is less reliable due to the lack of parallel trends, both far-right and moderate right, as well as center-left parties, which in Italy have supported strict laws against immigration, seem to lose votes in treated areas.

A large literature has shown how exposure to immigration can fuel natives' hostility against migrants (Hangartner et al., 2019) and voting for far-right parties (Dustmann et al., 2019; Tabellini, 2020a). In particular, politicians of any ideology that favor migrants' integration in the labor market are punished electorally (Dustmann et al., 2019; Marbach, 2020) and there is evidence that politicians strategically reject refugees in periods close to elections (Gamalerio, 2018). While previous papers focusing on purely economic policies have found a backlash against pro-integration parties, the intervention considered in this chapter differs in that, besides favoring integration, it also sheds light on the situation of extreme exploitation migrants are subject to and highlights their condition of victims. Another strand of the literature on migration has highlighted how deservingness is an important trigger of natives' approval for migrants' integration (Alesina et al., 2018) and that *severe vulnerability* is a crucial determinant of acceptance of asylum seekers by natives (Bansak et al., 2016). The experience of learning about migrants' exploitation in treated localities might have fostered sentiments of sympathy towards migrants and a desire for less severe policies on immigration, shifting moderate voters towards pro-integration parties. I propose to test whether this mechanism explains the findings using a survey experiment. Results from the analyses and from this experiment will allow to establish under which conditions migrants'

integration policies can result in no backlash against parties favoring them.

This chapter also relates to the literature studying policies that favor the integration of migrants (Munshi, 2003; Bansak et al., 2018) by highlighting how such policies can produce positive spillovers into the fight against organized crime, when migrants' labor is recruited and controlled by criminal groups. In this sense, this chapter connects to the literature studying criminal organizations' exploitation of migrants (McCarthy, 2014; Dipoppa, 2020). In line with the idea that criminal groups thrive by exploiting migrants' for their profits, this chapter shows that a policy favoring migrants' integration can directly damage organized crime.

3.2. Context

3.2.1. The Gangmaster system in Italy

The gangmaster system is a form of illegal recruitment and control of the labor force that relies on intermediaries (gangmasters, in Italian "caporali") to informally hire and control short-term workers. This practice is common in sectors relying on seasonal and unskilled labor, such as constructions and agriculture. In the Italian context, it has long been dominated by criminal organizations. Criminal groups have a comparative advantage in recruiting poor and fragile populations, often smuggling migrants from other countries, and in enforcing informal contracts using threats and violence to achieve compliance in absence of the law.

A recent picture of this phenomenon in the agricultural sector is provided in the reports by the Eurispes and by the Placido Rizzotto Observatory. Estimates by to these institutions suggest that the Italian gangmaster system currently involves 400,000 agricultural workers employed by 30 thousand companies. Of these workers, 49% are estimated to be irregular and 40% are in a situation of severe exploitation. The typical pay for a worker victim of this system in a full day of work can reach 50 euro in gross amounts. This sum, however, is subject to considerable cuts: workers are usually forced to pay for transportation to the fields, food and water directly to the gangmasters, who end up paying them a net of 20-30

Euros for the full day, about half the pay they would receive if they were hired under the official contract. The most exploited workers are paid 1 Euro per hour of work.[3]

While the gangmaster system also employs Italians, the vast majority of workers in conditions of extreme exploitation are international or cross-border migrants: paid less, working extremely long hours[4], living in ghettos made of metal plates and without access to services and current water, migrants are hired illegally in 76% of the cases.[5] Migrants are often smuggled by criminal networks with the promise of good employment opportunities and then forced to accept labor at exploitative conditions under threat of retaliation by criminals.[6] This phenomenon has attracted periodic attention from the media and institutions, usually in correspondence with with woeful news stories[7] or migrants' revolts against gangmasters.[8] In several occasions, migrants that mobilized other workers to denounce their condition and achieve change were targets of threats and violence, sometimes assassinations.[9]

3.2.2. The intervention by the union

In 2007, unionists from the Federazione Lavoratori Agro-Industria (FLAI) in Puglia organized a multidimensional campaign to reach locations where exploited workers lived. They provided workers information about their rights, suggesting them to denounce their gangmasters and, when workers were irregular migrants, offering them help in preparing an application for residence permit for work exploitation.[10] The intervention included a re-

[3] Fourth Report Agromafie e Caporalato, FLAI-CGIL, July 12, 2018.

[4] For example, the judicial inquiry investigating on the gangmaster system in Rosarno, Calabria, ascertained that migrants were forced to work in the fields for 12-14 hours a day for a net pay of 10-25 Euros (La Repubblica, April 26, 2010).

[5] Migrant workers constitute 37% of the total workforce in agriculture and 28% are in conditions of severe exploitation (Fourth Report Placido Rizzotto, page 119).

[6] Parliamentary Commission Investigating on Mafias, Document XXXIII N. 30, page 52-55.

[7] For example, news discussed the death due to exhaustion for working for excessively long hours of a migrant in Nardo' (Il Fatto Quotidiano, July 21, 2015) and the case of 12 migrants who died while being transported to the fields in a vehicle full beyond capacity (La Stampa, August 7th, 2018).

[8] In 2010, the migrant workers of Rosarno organized a series of demonstrations against their gangmasters which culminated in the arrest of 30 people connected to mafias. In 2011, the migrants in Nardo', Puglia organized another protest which also led to the discovery and dismantling of a system of extreme exploitation.

[9] It was the case for Soumaila Sacko, Malian agricultural worker and human right activist killed in 2018 (Frontline Defenders) and for the Pakistani Siddique Adnan, killed in 2020 (L'Ansa, June 7th, 2020)

[10] Non-EU citizens without a regular residence permit and victims of labor exploitation can receive a residence permit lasting 6 months and renewable for 12. This permit allows legally working in Italy and, at its expiration, can be converted into a longer residence permit for autonomous or subordinate employment.

peated interaction between unionists and workers, translating in the exchange of a large amount of information and, in some cases, in the creation of a trust and friendship relation.[11] Unionists also visited migrants and agricultural workers living in the city and interacted with the local population to inform them of the initiative they were carrying on and of the conditions of exploitation migrants in their city were subject to.[12]

The first cities reached by the intervention were in Puglia, a circumstance which according to the promoters might be connected with the historical tradition of unionism in agriculture dating back to the figure of the unionist Giuseppe Di Vittorio.[13] The first localities reached by the intervention were not those with highest levels of exploitation, even within the region: according to a classification done by the union of where workers are more exposed to exploitation on a 1-3 scale,[14] the first 9 cities targeted in 2008 were both level 2 (N=4) and level 3 (N=5), even though other level-3 locations were present in the region and were either reached by successive interventions in 2011 and 2013 or never targeted. A similar pattern is visible in other regions.

The intervention was then reproduced in a Campania in 2010 with the name "Street-Union" (in Italian, "Sindacato di Strada"), which would become the official name of the campaign adopted by union groups across the entire country. In the 8 years for which the report of the union provides information on treated localities, unionists reached 48 locations from the south to the north of Italy (mapped in Figure 48, SI).[15] In the most recent years, the union has started focusing on obtaining change at the institutional level, pushing for and obtaining a new law against the gangmaster system (Law N.199/2016) which extends punishment to the business owner, and not only to gangmasters, and increases the resources to help the

Art. 22, commi 12 quater and quinquies, Legislative Decree n. 286/1998.

[11]Interview conducted by the investigator with Marco Omizzolo, Sociologist and activist, March 27th, 2020.

[12]Interview conducted by the investigator with Jean Rene Billongo, Coordinator of the 'Placido Rizzotto Observatory', June 4th, 2020.

[13]Interview conducted by the investigator with Jean Rene Billongo, Coordinator of the 'Placido Rizzotto Observatory', June 4th, 2020.

[14]Second Report "Agromafie e Caporalato", 2013, pages 229-394.

[15]Notice that new locations might have been targeted after 2016, which is when the report with information on treated cities stops. For this reason, I interrupt the analysis of news and properties seized to 2016 data.

victims of exploitation.

3.2.3. Hypothesis

Why the campaign might fail: There are at least two reasons why an intervention aimed at fighting gangmaster systems could be ineffective in both achieving higher reporting and in raising awareness. First, the gangmaster system hinges on the existence of indigent and undocumented individuals who are ready to accept exploitative working conditions to receive an employment opportunity. An intervention that does not target the root cause of this phenomenon - either poverty or, for undocumented migrants, the impossibility to find a legal employment - might be ineffective at producing reporting since these workers might lack (or believe they lack) alternative employment opportunities. This is, however, less the case for workers subject to mafia blackmailing, who might be looking for an opportunity to escape exploitation,[16] or if an outside option materializes - in particular, the possibility to obtain a legal working permit. The intervention is also likely to reduce frictions in information about alternative employment opportunities, which might let workers realize they have other (and better) options elsewhere.

A second important reason why the intervention might fail is the counteraction by organized crime. As discussed, several activists have lost their lives in the attempt to mobilize workers against this phenomenon, the most recent only a month ago. The threat of retaliation by criminal groups might be sufficient to discourage the activity of the unionists involved in this intervention. While mafia-related threats against them did indeed take place, unionists tend to be embedded in networks of politically sophisticated individuals, with the resources to demand protection from the police and the capacity to increase their visibility and mobilize public opinion around them in case they receive mafia threats, making them difficult targets of violence.[17]

[16] For example, a number of victims of smuggling are told they need to work to repay their debt from transportation.

[17] Low visibility is indeed one of the most important predictor of who becomes a victim of organized crime-related violence (Daniele and Dipoppa, 2017).

Discovery of gangmaster system cases: On the other hand, there are also good reasons to believe the intervention might be successful in fighting against gangmaster systems. As mentioned, reporting might be in the interest of migrants willing to escape extreme exploitation and attempting to obtain a residence permit. If this is the case, we should observe an increase in news reporting cases of gangmaster system discovery and repression in treated locations.[18] Since extreme exploitation is often achieved by resorting to criminal groups for intermediation, we should observe an impact on organized crime prosecution if indeed the intervention led to denouncing particularly in cases in which migrants were severely exploited.

Public opinion: Additionally, the intervention might have an effect on public opinion. As highlighted in interviews I conducted with unionists, citizens were often unaware and shocked to learn that enslavement was taking place in their very city. If public opinion is mobilized by the intervention, we should observe an increase in news discussing civil society initiatives against gangmaster system as well as a mobilization by the institutions to fight this phenomenon.

Voting: Finally, the intervention might affect voting. In the last decade, both the center-right and center-left governments promoted restrictive policies on immigration, with center-left governments proposing and sealing a pact to intercept migrants trying to cross the Mediterranean and send them to Libya, an initiative criticized by several institutions, including nonpartisan ones like the UN.[19] In this context, I thus expect voters swayed in favor of integration to start voting for the far-left at higher rates rather than to vote for the center-left.

3.3. Data

News of gangmaster system: The first outcome considered in the analysis is the number of news related to gangmaster system, a database I assemble by collecting news from the two

[18] Data on actual reporting to the police are not available.
[19] The Guardian, November 14, 2017

main Italian national newspapers, Corriere della Sera and La Repubblica. In the first case, the newspaper search tool allows the direct visualization of the number of news containing the word "caporalato" in each year and city and I thus simply copy this information from the website. For La Repubblica, instead, I scrape the date and the body of the article and successively searched the name of cities in the body of the article. This second newspaper has provided a much larger coverage to news of gangmaster system: La Repubblica reports 2010 news over the period 2000-2018 while Corriere only covers 490 cases and only starting in 2006. In both newspapers, the number of news covering this topic steadily increases over time, reflecting the increasing salience of this topic in public discourse (Figure 7). I collect news up to 2016 as this is the last year for which information on where treatment was assigned is available.

Goods, properties and firms seized to mafias: Since the approval of Law n. 646/1982, Italy is endowed with a judicial tool to seize goods, properties and firms which are found to be controlled by members of criminal organizations. Since 1996 (L. 109/96), the law also mandates that goods seized to mafias should be destined to social use. Mafia-owned properties can either become part of the state patrimony (in which case they are often used as offices) or assigned to local administration, who can redistribute them for free to Cooperatives, NGOs and other associations. Information on both seized and destined goods is publicly available through the National Agency for Seized Goods (ANBSC). Both the number of seizures and redistributions has been increasing over time, although without a constant and monotonic increasing pattern (Figure 8).

National Elections: National elections results for the Second Republic (1994-2018) come from the Minister of Interior. Italian parties and electoral system were dramatically revolutionized after 1992, when the Tangentopoli scandal led to the end of First Republic (Daniele et al., 2018) and thus electoral outcomes before 1994 elections do not represent a meaningful comparison. I group party formations into 4 categories consistent over time: far-left, center-left, center-right and far-right. When a party is ideologically extreme, it is

Figure 7: Gangmaster system news over time

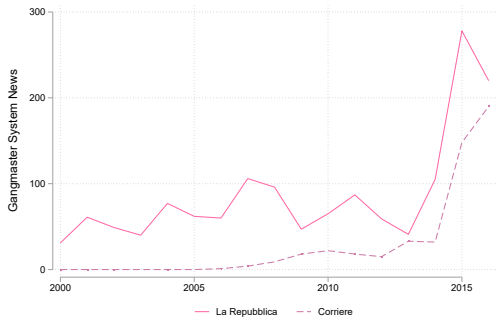


Figure 8: Mafia-seized properties over time

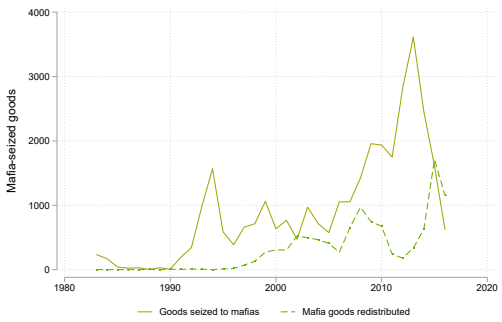
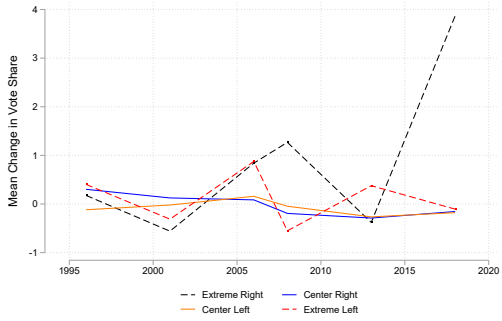


Figure 9: Change in vote share over time



indicated as such independently on whether in a particular year it runs in coalition with the moderate party. Instead, parties that always run in coalition are grouped in the respective centrist category.[20] In Table 36, SI, I provide the full list of parties and the groups to which they are assigned. To better isolate the variation produced by the treatment, I consider as dependent variable the change in vote share of each party from one year to the next, rather than its levels. Additionally, to account for the possibility that the observed variation in vote share results from a change in turnout (the denominator of vote share), I calculate the vote share as the number of votes divided by the total number of citizens entitled to vote.[21] Figure 9 plots the evolution over time of the change in vote share for the four groups of parties, with extreme parties naturally being subject to larger variations and the far-right receiving a peak of votes in the 2018 elections.

Cities targeted by the intervention: Information on which cities are reached by the intervention is taken from the report on labor exploitation in agriculture redacted by the union of agricultural workers, FLAI (Third report, 2016, p. 187). In the period from 2007 to 2016, union members built and maintained a relation with exploited immigrants working in 49 cities across 8 regions of Italy, spanning from south to north. The implementation was staggered: first Puglia, then other regions in the south. In 2013, the union targets the plain of Metaponto, reaching 23 small locations in this area. Then they expanded to locations in the north of Italy (the timing of treatment is plotted in Figure 10).

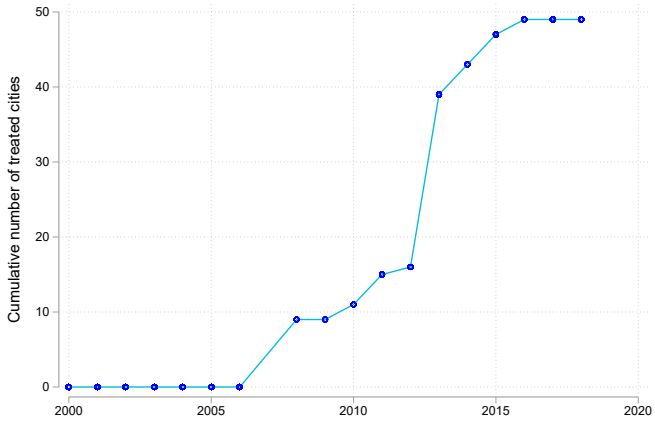
3.4. Empirical Strategy

To identify the effects of the unionist campaign, I rely on a difference-in-differences strategy comparing cities which were and were not targeted by the intervention, before and after it took place. For city i and year t, I estimate the following city and year fixed effects model:

[20] Since the Five Star Movement participated in national elections only from 2013 and it is not possible to examine pre-trends, it is not considered in the analysis.

[21] In Italy, every voter is automatically registered to vote without the need to take any action. The number of potential voters is thus unaffected by mobilization campaigns which might have an effect on this quantity in other countries.

Figure 10: Staggered treatment, cumulative number of treated cities



$$Y_{it} = \alpha_i + \beta_t + \gamma Treat_{it} + \epsilon_{it} \tag{3.1}$$

where $Treat$ is a city-specific time-varying indicator taking value 1 only in cities and years in which the unit is targeted by the intervention. City and year fixed effect guarantee that any time-invariant characteristic of the location or of the year is partialled out from the effect.

The first factor that might invalidate the identification of the treatment effect is that treatment assignment is non-random: union members are likely to have targeted areas where workers were highly exploitated and where they had sufficient human resources to employ in the campaign. This might translate in the outcomes being already on different trends before the intervention. For example, cities reached by the campaign might have a larger foreign population and might already vote for far-right parties at higher rates before treatment. If the outcomes of interest present systematically different behaviors across treated and control units even before the start of the intervention (i.e. if pre-trends are not parallel), then the identification of the effect of treatment is not possible using standard approaches.

3.4.1. Parallel Trends

I start by testing whether trends can be considered as plausibly parallel across treated and control units in Figure 11 and 15. For each outcome of interest, I plot the interaction between each year and treatment status using the year before treatment as base category. Notice that since treatment is staggered over time, the first post-treatment coefficients are not indicative of the full treatment effects, as they only represent 10 treated units in 2008 (from 2013, treated units become 40). Instead, the trends in outcomes before 2008 are the focus of this analysis.

For news about gangmaster system (Figure 11, Panel a), there is clearly no significant trend in the pre-period: all coefficient are insignificant and their distribution is flat at zero for the entire period. For properties seized to mafias (Panel b), coefficients are also insignificant and fluctuating around zero. Coefficients from 2003 to 2006 are slightly higher, but in a way that is compatible with previous yearly variations. A similar pattern is displayed for mafia properties destined for social use (Panel c). While lack of significance is potentially driven by low statistical power, the absence of a trend in the data and the possibility to observe a long pre-period in which no clear trend is visible (8 years for news, 25 for seized properties, 11 for destined properties), is reassuring in reducing concerns about non-parallel trends: treated and control cities do not seem to differ systematically in terms of the outcomes of interests before treatment period starts.[22]

For political outcomes (Figure 15), instead, treated and control units can only be meaningfully compared across 3 election periods before treatment starts, as elections before 1994 feature a different set of parties and electoral rules. In this case, the reference year is elections 2006. For center-right and center-left parties, the pre-trends cannot be considered parallel: in both cases, there is a negative drop in 2001 and variations over time are as large as those observed in the treated period. For the extreme parties, instead, pre-trends appear parallel, with the change in vote share stable at zero and insignificant.

[22] In Figure 49 SI, I also report parallel trend tests for firms seized to mafias and destined for social use, which also do not display patterns in line with violations of parallel trends.

Since pre-trends can plausibly be considered parallel for only some of the outcomes described, in the next paragraphs I propose alternative identification strategies which either reduce the extent to which selection of treatment units matters (using propensity score matching to identify a more similar control sample) or relax the parallel trend assumption completely by only comparing treated units among themselves (staggered design).

3.4.2. Matching design

I use nearest neighborhood matching to identify a control group that presents similar characteristics as the treated units on a variety of substantively important characteristics. I match treated to control units on the following pre-treatment characteristics from Census 2001: the percentage of population employed in agriculture and in unskilled labor, unemployment rates, population and its density, foreign population and analphabetism rates. Additionally, I match on the number of FLAI union members at the regional level in 2006, an information I obtain from the union website. A balance table reveals that the algorithm is effective in substantively reducing differences across treated and control units and that balance is improved not only on the covariates used for matching purposes, but also on other characteristics of the cities (Table 37, SI). Parallel trends tests are slightly improved, particularly for political outcomes (Figure 52 and 56, Appendix).

3.4.3. Staggered design

In a third alternative specification, I exploit the staggered roll out of the intervention to restrict the analysis to treated units only and rely on variation in the timing of their treatment. This strategy reduces the number of observations and automatically drops the last year of treatment, in which all units are treated and there is no control, but it also allows to relax the assumption that trends between treated and control group are parallel, since it uniquely relies on within-treated units variation. In this case, the identification assumption is only that there is no strategic selection into treatment timing, i.e. that differences between localities which were treated earlier or later are not correlated with the outcome. As discussed in Section 3.2.2, the decision to treat a city was decentralized to the

local labor union and localities with highest levels of exploitation were not systematically targeted first, suggesting that selection in treatment timing should not be a primary concern in this context.

3.4.4. Stacked design

The staggered nature of the intervention, which reached different location at different times is, on one hand, an advantage, as it allows to exclude the effect of other events that might have happened at the same time as the treatment. This allows to exclude that a contemporaneous shock to the treatment is responsible for the observed effect in each of the previous specifications. On the other hand, dynamic DiD designs exploit comparisons between early treated and late treated units which can be biased if treatment is not constant across groups or times (Goodman-Bacon, 2018).[23] To exclude that findings are driven by heterogeneity bias, I follow Deshpande and Li (2019) and repeat the main analysis on a database in which only the first year of treatment is considered for each treated observation. This exercise mechanically removes the possibility to operate comparisons across early and late treated units, as it sets observations as missing after their first year of treatment. Table 8 summarizes the identification strategies used to assess treatment effects while relaxing one identification assumption at the time.

[23]For example, imagine that the intervention increases news related to the gangmaster system by 5 in the first year after treatment and by 2 in the second year. When using early treated units as controls, we will estimate a smaller treatment effect because in the second year after treatment, early treated units still display an increase in news and thus, even if late-treated units also have +5 news in their first year of treatment, we will estimate a treatment effect of only +3.

Table 8: Summary of estimation strategies employed

Strategy	**Description**	**Issues it addresses**
Classic DiD	Full sample of observations	
Matched DiD	Nearest neighborhood matching to identify control group	Control sample more similar to treated
Staggered DiD	Only keeps treated obs	No need to assume parallel trends
Stacked DiD	Only keeps first year of treatment	Heterogeneous treatment effects

Figure 11: Parallel trends test

Figure 12: News per capita

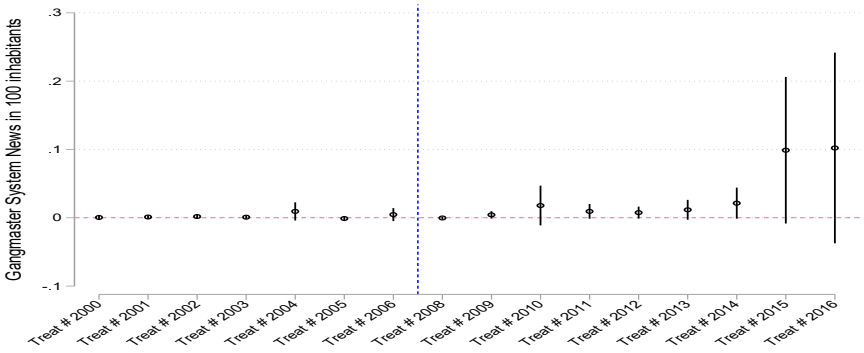


Figure 13: Properties seized to mafias

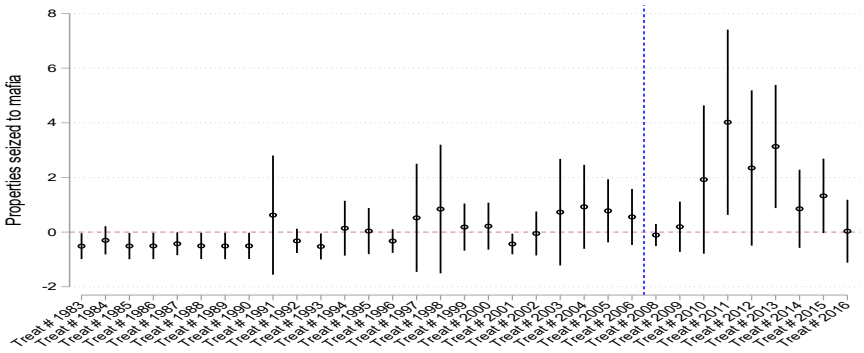
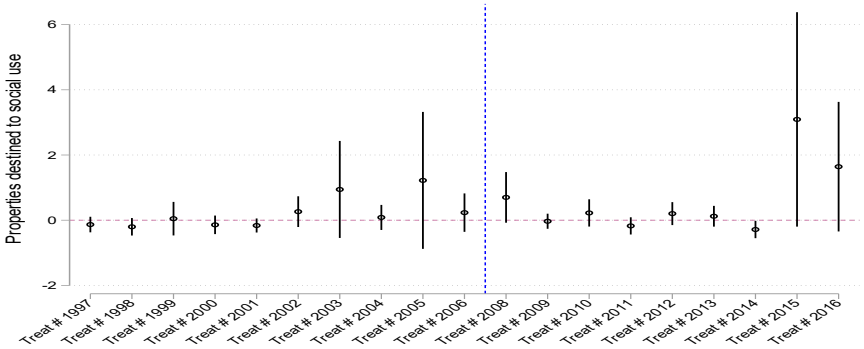
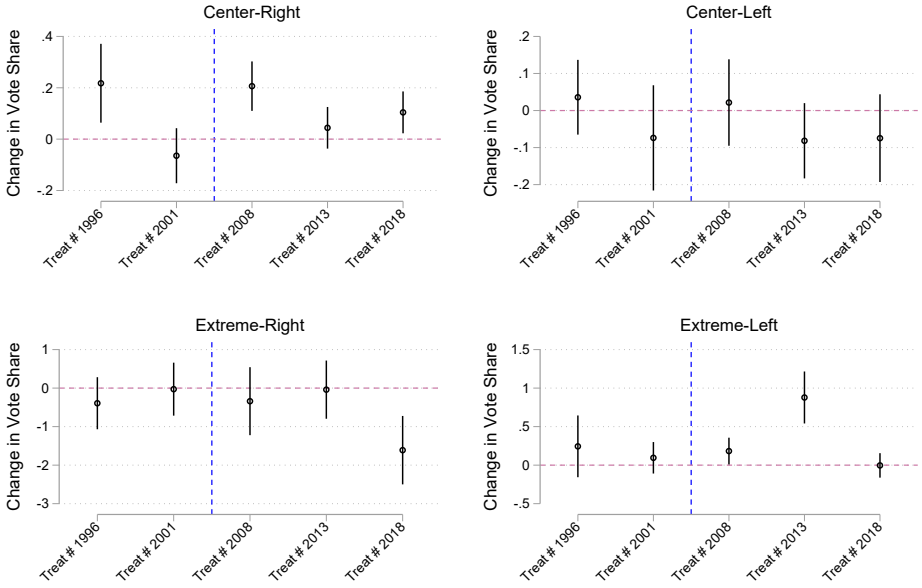


Figure 14: Mafia properties destined for social use



Note: Coefficients from the interaction of treatment indicator (equal to 1 in treated cities) and year dummies. The blue vertical line indicates the reference category (year 2007). In the first year of treatment, only 10 cities are reached by the intervention, while by 2013 they are 40. Regressions include city and year FE and standard errors are clustered at the city level.

Figure 15: Parallel trends test, change in vote share



Note: Coefficients from the interaction of treatment indicator (equal to 1 in treated cities) and election-year dummies. The blue vertical line indicates the reference category (election year 2006). In the first year of treatment, only 10 cities are reached by the intervention, while by 2013 they are 40. Regressions include city and year FE and standard errors are clustered at the city level.

3.5. Results

3.5.1. News coverage of gangmaster system

The analysis starts by performing a reality check: did the intervention increase reporting of cases of gangmaster systems? In Table 9, I test the effect of treatment on the population share of news related to gangmaster system in each city. Results indicate a significant increase by 4 news in 100,000 inhabitants in targeted cities (Column 1), an effect which becomes smaller and more precise when we consider the matched control sample (Column 2). In both case, the effect is large and represents a ten or twenty-fold increase with respect to the average population share of gangmaster system-related news in a city. Results are not significant using the staggered design (Column 3). This is not concerning since this specification is only aimed at relaxing the parallel trend assumption which, however, holds well for this outcome. Finally, the result is robust to using only the first year of treatment (Column 4), suggesting that possible heterogeneous treatment effects do not drive the findings. In the Appendix, I show results' robustness to using the total number of news instead of the population share (Table 39, SI) and to using only news from Corriere or only from La Repubblica, the two newspapers data are scraped from (Table 38, SI). Notice also that reverse causality - an increase in news in treated units could be the reason why the union targeted certain locations - is ruled out by the existence of extremely flat pre-trends in the years before treatment.

An important question is whether the increase in news comes from workers reporting and police prosecuting cases of exploitation at higher rates or from politics and society discussing about this topic at higher rates. To answer this question, I read and classify a random sample of 100 news in treated cities. The majority of news (37%) discusses cases of migrants denouncing or police operations against labor exploitation. Second, there are journalistic reports on the topic (24%) and demonstrations or initiatives by migrants or by the civil society to achieve change (23%) and finally policymaking initiatives to fight this phenomenon (16%). The examination of the content of news articles provides evidence that

the intervention increased both reporting of cases of exploitation and the activism of local civil society and institutions to achieve change.

Table 9: Treatment effect on news related to gangmaster system (DiD)

	(1) Full	(2) Matched	(3) Staggered	(4) Stacked
Treated	0.0408*	0.0267**	-0.0257	0.0385*
	(0.0208)	(0.0114)	(0.0323)	(0.0208)
Observations	137,258	1,649	833	153,406
R-squared	0.158	0.160	0.171	0.144
City and Year FE	Yes	Yes	Yes	Yes
Mean DV	0.0016	0.0022	0.0182	0.0022

Note: The table reports results from a DiD capturing the change in news about gangmaster system in cities treated with the union intervention, before and after the intervention took place. The DV is the population share of news in 1000 inhabitants. City and year FE are included and standard errors are clustered at the city level.

3.5.2. Properties seized to mafias and mafia properties destined to public use

Properties seized to mafias

The second question investigated is whether an intervention aimed at fighting labor exploitation had positive spillovers as an anti-mafia policy. As discussed, anecdotal evidence suggests that the most severe cases of exploitation involve members of criminal organizations, who perform the function of controlling workers and preventing them from reporting to the police or seeking help. If the union intervention is successful in particular on cases of severe exploitation and if organized crime is indeed involved, then we should expect higher rates of reporting to result into a higher likelihood of police discovery of mafia-related activities. Table 10 indicates that cities targeted by the intervention experience a significant increase of 1.2 or 1.3 more goods seized to organized crime - thirteen times more than the average in the full sample (Column 1) and four times the average in the matched sample (Column 2). As for news, the lack of significance in the staggered design should not be regarded as problematic given the existence of parallel pre-trends. Results in the stacked

Table 10: Treatment effect on goods and properties seized to mafias (DiD)

	(1) Full	(2) Matched	(3) Staggered	(4) Stacked
Treated	1.331***	1.159*	0.304	0.704**
	(0.471)	(0.637)	(1.462)	(0.353)
Observations	274,890	3,264	1,666	291,060
R-squared	0.172	0.179	0.188	0.163
City Year FE	Yes	Yes	Yes	Yes
Mean DV	0.109	0.337	1.021	0.103

Note: The table reports results from a DiD capturing the change in goods and properties seized to mafias in cities treated with the union campaign, before and after the intervention took place. City and year FE are included and standard errors are clustered at the city level.

design (Column 4) confirm the robustness of results to treatment heterogeneity bias. Seizing firms to mafias is a rarer event - for example, there are 44,462 seized properties in the database but only 5,365 seized firms. While less precise,there is also evidence that the number of firms seized to organized crime increased in treated cities (Table 40, SI).

Properties destined to public use

Since 1996 (Law 109/1996), properties seized to organized crime can be reassigned for the use of the community, either as administrative buildings or given to local administrations who assign them for free to cooperatives and associations that perform activities useful for society as a whole. While these properties represent freebies for public administrations, distributing them is bureaucratically complex[24] and often criminal groups retaliate against those endowed with their former properties exactly as a strategy to make this redistribution ineffective. Very often, this means that properties seized to mafias are left unused. A surprising effect of treatment is that it also increases the number of properties that are reassigned for public use after being seized to organized crime. This effect is statistically significant and large (an eighteen-fold increase with respect to the average in the full sample)

[24]Complexity is dictated by the cost to restructure these properties, which are often left unused for years, and by the necessity to screen out figureheads of criminal organizations who could acquire back the property.

Table 11: Treatment effect on mafia properties destined for public use (DiD)

	(1) Full	(2) Matched	(3) Staggered	(4) Stacked
Treated	1.053*	0.706	0.853*	0.973*
	(0.564)	(0.578)	(0.482)	(0.501)
Observations	161,700	1,920	980	177,870
R-squared	0.291	0.215	0.228	0.289
City Year FE	Yes	Yes	Yes	Yes
Mean DV	0.0617	0.259	0.650	0.0685

Note: The table reports results from a DiD capturing the change in goods and properties seized to mafias that were destined for public use in cities treated with the union campaign, before and after the intervention took place. City and year FE are included and standard errors are clustered at the city level. All regressions control for the number of goods seized to organized crime. This regression includes data from 1996, when the law for the social use of mafia properties was approved.

and robust across specifications (Table 11). The effect is unlikely to be the automatic product of the increase in seized properties in treated cities, since the average time between the seizure and the destination of a property is 2023 days (Cisterna, 2012).

Why do administrations redistribute properties seized to mafias at higher rates in cities in which the union intervention made cases of exploitation salient? If administrations face political pressure for adopting measures against exploitation, this is what we should expect. Anecdotally, financing cooperatives of agricultural workers has been a common strategy to fight against exploitative practices in agriculture. In line with this interpretation, properties redistributed in treated cities are more likely to be destined to cooperatives in agriculture (Table 41, Col 1-4, SI) and for social purposes (a definition which includes cooperatives) rather than to be used for public offices, which is the most common use of these properties (Table 41, Col 5-8, SI).[25]

[25]The same information on destination of the good and type of activity are not available for firms.

3.5.3. Voting

The final outcome considered is whether the intervention had an impact on voting. Was the experience of learning about cases of enslavement in the voters' own city sufficient to impact their view of immigration and their voting behavior? To better isolate the effect of treatment, in this specification I consider the change in voting as dependent variable rather than the levels, as above.[26] Results should thus be interpreted as the effect of treatment on the change in vote share for each party from the previous year. Another important reminder in interpreting these results is that this is the only outcome for which the number of years available before treatment starts is too small to assess whether the parallel trends assumption holds and this is particularly true for the moderate parties categories, as pre-trends are often significant. As a result, in this case it is fundamental to test whether the staggered design specification is consistent with the other results.

Table 12 reports the results for all groups of parties and all four specifications. The Center-Right and Center-Left parties have negative coefficients, indicating a reduction in vote share from the previous year. The Center-Left result is of opposite sign and insignificant in the staggered design, which makes this result not believable in light of the lack of parallel trends for this outcome. For Center-Right, the negative coefficient is significant also using the staggered design, but significance disappears completely using the matched sample and the vote share as dependent variable instead of the changes (Table 42, SI). Results for the Far-Right parties are mixed, with the sign of the coefficient changing across specification and behaving in a similar way in the robustness tests. The only result that is highly consistent across specifications and largely significant is the effect on the Far-Left parties vote share. In treated cities, far-left parties experience a positive and significant change in vote share corresponding to an increase by 30% in their vote from the previous year, a three-fold increase with respect to the average change in vote share for this group of parties.[27] In

[26] Results using the vote shares in levels are consistent and reported in Table 42, SI, but the pre-trends are less convincing using this outcome.

[27] Extreme parties formations and their voters vary more from one year to another than centrist parties and as a result their change in vote share is naturally larger.

levels, this effect corresponds to an increase in far-left parties vote share by 1% (Table 42, SI). The effect is present in each year after treatment, with a large positive change in 2013 and an equally high vote share in 2018, translating into a zero change coefficient from 2013 to 2018 (Figure 15).

If the intervention is responsible for the change in vote share, we should observe larger effects in cities that were treated closer to elections. In Table 43, SI, I test the same specification on the subsample of cities which were treated less than one year before elections: for all parties, the change is larger considering this subsample. The change in vote share for the far-left is of 40% with respect to the average change of 10%.[28]

Mechanism

In future iterations of this chapter, I would like to test the plausibility of this mechanism using a survey experiment on a sample of constituents living in locations where migrants are exploited, but who were not targeted by the information dissemination campaign. The treatment will consist in learning about the condition of exploitation migrants are exposed to in the city of the respondent and on the effects of an information dissemination campaign launched in other cities on the condition of migrants. Subjects in the control group would instead be exposed to a more classic treatment informing them about basic statistics on migrants' presence and integration in the workforce in their city. The survey will then assess whether treated subjects respond by becoming more in favor of integration and whether this translates into a higher likelihood to pick hypothetical candidates that are in favor of integration policies. The survey experiment is described in Appendix B.4.

3.6. Conclusions

This chapter studies the effects of an information dissemination campaign aimed at fighting labor exploitation of migrants in agriculture by providing them with the tools and the

[28]In the SI, I present results disaggregated for the Lega Nord only instead of including this party in the far-right group. This choice is conceptually suboptimal, as most far right parties are explicitly against immigration and not only Lega Nord. Results are not consistent across specifications, preventing to reach meaningful conclusions on this outcome.

Table 12: Treatment effect on change in vote share (DiD)

	Full	Matched	Staggered	Stacked
	(1)	(2)	(3)	(4)
	Center-Right	Center-Right	Center-Right	Center-Right
Treated	-0.0440**	-0.0255	-0.133***	-0.0626***
	(0.0207)	(0.0298)	(0.0439)	(0.0224)
Mean DV	-0.0207	-0.0186	0.00985	-0.0207
	(5)	(6)	(7)	(8)
	Far-Right	Far-Right	Far-Right	Far-Right
Treated	-0.605***	-0.693	0.909*	-0.0958
	(0.214)	(0.681)	(0.473)	(0.324)
Mean DV	0.958	1.259	0.868	0.958
	(9)	(10)	(11)	(12)
	Center-Left	Center-Left	Center-Left	Center-Left
Treated	-0.0842***	-0.0498	0.0182	-0.0775***
	(0.0231)	(0.0336)	(0.0524)	(0.0295)
Mean DV	-0.0785	-0.108	-0.112	-0.0785
	(13)	(14)	(15)	(16)
	Far-Left	Far-Left	Far-Left	Far-Left
Treated	0.318***	0.328**	0.515***	0.616***
	(0.105)	(0.132)	(0.139)	(0.166)
Mean DV	0.117	0.135	0.161	0.117
Observations	46,867	540	283	46,819
City FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes

Note: The table reports results from a DiD capturing the change in vote share in cities treated with the union intervention, before and after the intervention took place. City and year FE are included and standard errors are clustered at the city level. In all specifications, I control for the number of voters. All data on national elections since 1994 are included.

incentives to denounce severe exploitation. This is a different policy with respect to others previously considered by the literature in that it does not only promote economic integration but also highlights the condition of exploitation migrants are subject to. The intervention was effective in increasing police reporting of cases of exploitation. Since gangmasters are often members of criminal organizations, higher reporting rates had a spillover effect on the seizure of mafia-owned properties, which increase in treated cities. In this sense, this chapter contributes to the literature showing that organized crime exploits migration for its own profits and that hitting criminals' capacity to exploit migrants directly damages their business.

Treatment also raised awareness of this phenomenon among the public opinion and the institutions. Finally, differently from other policies, this intervention did not produce a backlash against pro-immigration parties. Instead, parties that had a more pro-integration stances gained votes in treated cities. In line with previous literature, I interpret this finding as the result of feelings of deservingness for migrants caused by learning the condition of severe exploitation they were subject to. In future iterations of this chapter, I plan to test this hypothesis using survey experiments. While this set of conclusions is valid in this context, scaling up this intervention at the national level might potentially produce different effects than those observed. If reporting gangmasters to the police became the equilibrium, smuggling and controlling migrants would become extremely costly and might stop being a profitable business. On the other hand, systematic reporting could only be achieved if exploited migrants who denounce are effectively rewarded with a humanitarian residence permit, a strategy which requires governments to grant legal status to a relatively large number of migrants and which might produce a different effect on voting. Findings from this study suggest that governments willing to scale up this intervention while avoiding backlash would need to invest in communication to highlight to voters the extreme condition migrants are subject to. In conclusion, at least some types of integration policies can be carried on without a backlash against pro-integration parties when voters learn about the severe exploitation migrants can be subject to.

Fighting Organized Crime by Targeting their Revenue: Screening, Mafias and Public Funds[1]

Abstract

Repressive policies to fight criminal organizations are often met with a violent response from criminal groups. Are non-repressive strategies more effective? Curbing criminal revenues can be a powerful tool if the threat of investigation is credible and if criminals are unable to displace their activity to avoid controls. We study an Italian policy fighting mafia misappropriation of public funds by screening companies applying for subsidies over 150,000 Euro. We find that a group of firms starts self-selecting below the threshold immediately after its enforcement. Those firms are concentrated in mafia affected cities, display worse performances, operate in typical mafia sectors and have balance sheet indicators of money laundering. While avoiding violence, non-repressive strategies might produce different unintended consequences: criminal organizations react with an immediate strategic displacement which reduces states' capacity to detect them, highlighting the importance of designing policies that anticipate the sophistication of criminal organization in targeting their revenues.

[1]This chapter was coauthored with Gianmarco Daniele, Assistant Professor at University of Milan, Department of Law.

4.1. Introduction

In many countries, criminal organizations have emerged as important political and economic actors, accumulating enough resources that states are forced to decide whether to fight or to coexist with them (Staniland, 2015). However, the choice of fighting can come with considerable costs in terms of violence: policies to crack down on drug cartels in Central and South America were met with an impressive surge in homicides (Lessing, 2017b); the beheading of criminal groups has resulted into wars of replacement (Calderón et al., 2015; Castillo and Kronick, 2020). Mass incarceration policies have also backfired, causing the formation of new criminal networks (Skarbek, 2011), and when stricter jail conditions were adopted to prevent networks formation, criminals fought the state back, pushing it to compromise.[2]

While repressive policies seem to be met with a violent response, there is less evidence on the effectiveness of policies aimed at fighting organized crime through non-repressive methods. Policies such as increased monitoring of infiltrated sectors and screening of financial transactions and public tenders have the potential to cut down criminal revenues and thus prove powerful tools to fight against organized crime. On the other hand, they might also turn out to be ineffective if (i) the threat of investigation is not sufficiently credible and if (ii) criminals are able to displace their business or use figureheads to make it undetectable.

In this chapter, we study an example of one such policy: the Italian Antimafia Information law. This policy aims at cutting one of the major sources of criminal revenues in a growing number of countries, public funds. Either through public contracts or through subsidies, criminal groups often manage to subtract large amounts of money directly to the state. For example, criminal organizations have embezzled the bulk of European subsidies for green energy and agricultural production by creating ad-hoc companies which disappeared after

[2] In Italy, the approval of tighter detention measures for mafiosi started a season of massacres which led to the "State-Mafia Pact", a negotiation between Cosa Nostra and the Italian State to attenuate detention measures in exchange for the end of the siege (Lupo, 1996). A similar strategy was adopted by Brazilian gangs trying to avoid members' separation across different prisons(Washington Post 2019).

receiving funding (Caneppele et al., 2013).[3] According to the European Anti-fraud Agency, every year between 300 million and 900 million Euros of EU funds are funneled in the hands of criminals (European Anti-Fraud Office, 2017).

The Italian Antimafia Information Law was designed to prevent misappropriation of subsidies by checking on firms' connections with organized crime if they apply for subsidies over 150,000 euros. There are three features of this setting which make it particularly apt for studying criminal firms' behavior. First, the Italian screening process focuses solely on the relationships with mafias: this allows us to connect firms' behavior in response to the policy to this specific crime, rather than to other illegal behaviors. Second, the law was substantially strengthened in 2013. We can thus consider differences in the number of subsidies awarded at the discontinuity before and after the new law to account for constant characteristics of subsidies at this threshold. Finally, the police bears the full costs of the investigations and no other crimes besides mafia-connection are investigated; the policy is designed to cause no delay in the granting of the funding; and firms play no role in this process, allowing us to exclude the possibility that they simply sort below the threshold to avoid bureaucratic costs or for fear of being prosecuted for other crimes.

We use data on all firm subsidies co-financed by the EU from 2008 to 2015 and estimate the difference in funding at the 150,000-euro threshold before and after the 2013 strengthening of the law. We identify the amount of sorting using difference-in-differences (DID) estimates – but we show that bunching estimation provides very similar results. Unlike repressive policies, this law had no effect on mafia-related crimes, but it still produced unintended consequences: from before to after the 2013 law strengthening, the number of subsidies for just below the 150,000 Euros threshold became four times higher than in any other bin. This suggests that firms related to mafia reacted strategically by systematically applying for funds just below the screening threshold. We test multiple empirical implications of this explanation. We find that sorting is stronger in mafia-affected cities and in

[3]This scandal resulted in the resignation of Slovakian Prime Minister Robert Fico and the murder of the journalist reporting on it, Ján Kuciak.

sectors traditionally infiltrated by organized crime. Moreover, firms sorting right below the threshold are more likely to display worse performance, such as delaying the conclusion of the funded project and finding private co-financing. They are also substantially more likely to have been created right before applying for subsidies, and they have lower bank debts; both characteristics align with our knowledge of how mafia-affiliated firms conduct money laundering operations (Bianchi et al., 2017; Transcrime, 2018). Our findings are robust to using different sizes of bins and are not determined by 150,000 euros being a round number. We also run a series of placebo tests on cases in which we should not expect to see sorting. Finally, in an attempt to estimate the cost of sorting for mafia-connected firms, we find that after 2013, fewer subsidies over 150,000 euros were awarded in mafia-affected cities.

This chapter is the first study of a screening policy designed to fight organized crime misappropriation of public funds. Mafia-related companies adopt an immediate strategic reaction, suggesting that the threat of screening is effective. The law is successful at pushing a number of applications below the threshold, which we interpret as an economic loss for mafia-related companies, who would have otherwise applied for higher subsidies. However, the effectiveness of the policy is limited to where the controls are enforced, since mafia-linked firms can easily game the law by applying for amounts just under the threshold. This leads to two policy implications. First, a back of the envelope calculation suggests that lowering the threshold would be socially beneficial, as mafias losses would be higher than the bureaucratic costs of additional screenings. Second, criminals' immediate strategic response points to the importance of designing policies that anticipate crime displacement, for example by screening criminal behavior continuously, rather than only above arbitrary thresholds.

This chapter connects to three literatures. Primarily, we contribute to the emerging literature on policies to fight against organized crime. Previous studies have focused on counter-narcotics policies (Dube and Naidu, 2015; Lessing, 2017b; Durán-Martínez, 2017; Castillo and Kronick, 2020; Kronick, 2020), kingpins killings (Calderón et al., 2015), mass incarceration and deportation policies (Skarbek, 2011; Sviatschi, 2018). Instead, we focus

on a non-repressive policy aimed at decreasing organized crime profits by preventing their misappropriation of public resources. Differently from previous studies, we shed light on organized crime involvement into white-collar crimes. This is an under-studied topic which concerns several developed countries in which criminal organizations launder their profits into legal businesses (Le Moglie and Sorrenti, 2017).

More broadly, our study connects to the literature studying states' fight against sophisticated criminal activities which react strategically to states' attempts at fighting against them. Those includes policies to curb money laundering (Findley et al., 2015), terrorism financing (Morse, 2019; Limodio, 2019) and policies producing crime displacement (Getmanski et al., 2019).

An important implication of these findings is that mafias' capture of firm subsidies might contribute to explain why European transfers destined for development have triggered economic growth in most European regions, but not in Southern Italy (Becker et al., 2013). In this sense, our study also relates to the literature showing how organized crime can impact politics. Others have studied how criminal groups influence politicians' selection (Alesina et al., 2016; Fergusson et al., 2020), voting (Hidalgo and Lessing, 2015; Blattman et al., 2018) and policy making (Daniele and Dipoppa, 2017; Trejo and Ley, 2017). Our findings suggest that criminal organizations can additionally impact the effectiveness of policies for development.

4.2. The Antimafia Information Law

The Antimafia Information Law is part of a broader effort by the Italian state to crack down on organized crime which intensified starting in the 1990s, after a season of mafia-related killings of notable public figures. This policy was designed to prevent mafia-linked firms from receiving government subsidies by requiring the police to screen firms applying for subsidies to determine if they have connections to mafias. Unlike other policies preventing access to subsidies for firms with criminal records existing in other countries, the policy we consider exclusively targets organized crime, allowing us to identify the effect of this intervention

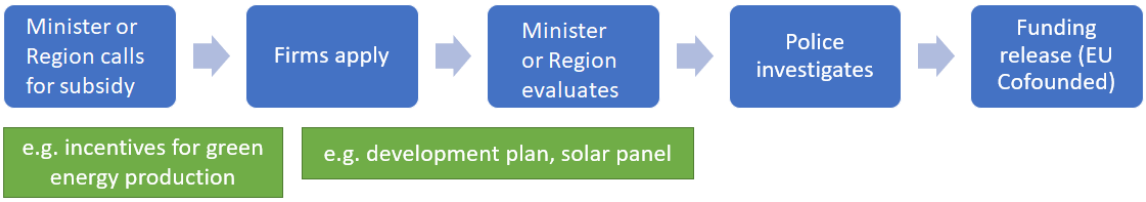
on mafia-related activity rather than on a mix of fiscal evasion, corruption or other illegal behaviors. The government initially passed this law in 1965 and updated it in 1994 and 1998 to adjust to the transformations of criminal organizations over time. Importantly, this policy was strengthened in 2013[4] expanding both the scope and the effectiveness of controls. Checks were extended to family members, often used as figureheads in the past (Fantò, 1999); to NGOs and public firms; to new types of mafia-related crimes, such as waste trafficking. The law was made more effective by unifying the legislation and by creating a centralized dataset of mafia-related information. Finally, the law rounded the threshold of application from 154,937 to 150,000 euros.[5] Below this threshold, firms applying for subsidies have to simply provide a self-certification, stating the lack of any criminal charge.

The process to release subsidies is initiated by a public body (usually a regional government or a Ministery) and generally aims at supporting firms' investment and human capital growth. Each call can include different eligibility rules. Eligible firms submit a budget for their project proposals and, after an evaluation process, the awarding bodies list the winning firms; only at this point they contact the Territorial Police Office (*Prefetture*)[6] to release the Antimafia Information. Figure 16 graphically shows the steps of the application process.

In Italy, there are 103 *Prefetture* and each has only access to information on local subsidies over which they have authority. There is also no central authority investigating on cases of subsidies misappropriation, unlike for public procurement contracts, for which a specific national agency was created to perform constant scrutiny. These two institutional features might explain why the pattern of sorting we document in this chapter was not already highlighted and fought against by the state.

[4] Law n. 159/2011, enforced on February 12, 2013.
[5] The threshold was initially 300 Million Lire.
[6] *Prefetture* are Interior Ministry agencies representing the central government in each province.

Figure 16: The Antimafia Information Law, application process



4.3. Hypothesis: Sorting below the threshold

How do mafia-linked firms react to screening policies? The first question is whether the policy presents a credible threat for criminal groups at all. In this case, qualitative evidence suggests that the previous version of this law was not effective at even representing a threat for criminals, due to the variety of ways in which police checks could be bypassed (Fantò, 1999). If the policy is credible, then there are several responses criminal firms can adopt. First, can risk and apply nonetheless. In our context, they can apply for subsidies above 150,000 euros and risk a very high likelihood of rejection and seizure of the company. This strategy seems uncommon, as an insignificant number of firms are rejected during the police screening process. Second, they can apply below the threshold and forego potential profits. To minimize the loss, they can apply for amounts just below the threshold. Third, they can apply for subsidies above the threshold but circumventing the law using figurehead as owners of the company. This strategy is optimal when the cost of finding a trustworthy figurehead is lower than the cost of foregoing potential profits due to applying for funds below the threshold. We provide suggestive evidence on this strategy in Section C.6 in the Appendix. In Appendix Section C.6, we also briefly discuss two alternative strategies: applying for multiple subsidies and using different front firms.

4.3.1. Alternative reasons to avoid the threshold

This section discusses alternative reasons why firms might sort below the threshold. We substantiate this discussion by providing qualitative evidence on the procedures followed by the *Prefetture* in releasing the certificate. We sent a list of open questions to each of the country's 103 *Prefetture* (Provincial Police Offices) under the Freedom of Information Act

and obtained an answer from 44 of them.[7]

Bureaucratic costs

The Italian government designed the Antimafia Law to avoid placing any burden on firms by shifting all costs to the police. Firms have no role in providing documentation, as all documents are gathered through local institutions. The screening process, conducted entirely by the *Prefetture*, consists of verifying information on a digital database, matching firms' data with the owners' criminal records. Only where mafia ties are suspected is the local police office contacted for further investigations. This rarely occurs: all *Prefetture* confirmed that on-site checks are rarely executed. Generally firms do not experience any bureaucratic costs to obtain this certification, unless they have connections to mafias.

Police corruption

Firms might fear police extortion and apply below the threshold to avoid it. This hypothesis is in sharp contrast to the Italian setting, in which corruption levels in the police are low both in relative and absolute terms. In absolute terms, only 11% of Italians think the police is corrupt, according to Transparency International. This is below the EU average of 22% and in line with other Western EU countries (e.g. 8% in France, 11% in the UK, 12% in the Netherlands). In relative terms, the police is the most trusted institution by Italians, according to a 2013 survey, the three Italian police authorities, *Carabinieri, Polizia and Guardia di Finanzia* were the most trusted institutions with levels of trust above 70%. As a comparison, only 36.6% of Italians trust the Catholic Church, 19,5% trust unions and 7% trust political parties[8]. Moreover, to the best of our knowledge, there has been no case of police corruption related to the release of the Antimafia Certificate. Finally, in the empirical analysis, we test whether cases of firms sorting are concentrated in provinces with high levels of institutional corruption, and we show that this is not the case (Table 47, SI).

[7] The sample of respondents is geographically representative, with a balanced response rate from Prefetture in the South (43%) and includes several Prefetture located in heavily mafia affected provinces (50%).

[8] Eurispes

Avoiding project delays and misjudgement

The law requires the certificate to be released within 30 days or else it is considered granted exactly to prevent firms from being excluded from a call due to bureaucratic delays. We can also rule out that firms are afraid to be rejected due to uncertainty on their relationship with mafia-members: the law allows no 'grey areas' in the rejection of the certificate, a code followed by 100% of the *Prefetture* in our sample. As additional evidence, we show that firms sorting below the threshold are not more likely to be located in municipalities with highly inefficient local bureaucracy (Table 47, SI). Even if some firms applied below the threshold just to be conservative, we would expect a small sorting mostly coming from amounts right above 150,000 Euros. As we illustrate below, instead, what we find is a substantively large sorting coming from larger amounts.

Risk of being charged for other crimes

Firms might sort for fear of being charged for other non-mafia crimes, such as tax evasion. As discussed above, the *Prefetture* only screen for mafia connections and not other criminal offenses, as indicated by both the law and the replies to our questionnaire. Additionally, even if a business owner was guilty of another crime, this could not lead to the rejection of the Antimafia Information. Finally, the *Prefetture* are not in charge of any other white-collar type of crime, including tax evasion (investigated by the *Guardia di Finanza*). A business owner must be simultaneously *uninformed* about the *Prefetture* duties and *informed* about the law changes introduced after 2013 for non-mafia-related sorting to be possible. Again, even in this implausible scenario, it seems unlikely that businessmen would forego large amounts of profits instead of collecting these information.

In conclusion, the law and the procedures followed by the *Prefetture* suggest that only connections to criminal organizations should lead a firm to worry about the Antimafia Information screening, and thus motivate it to strategically avoid it by sorting below 150,000 euros.

4.4. Data

The empirical analysis is based on data publicly available at OpenCoesione, an open government project including all projects covered by the Cohesion Policy and financed by European Structural Funds with a national co-financing requirement. The data consist of the EU multi-year budget for 2007–2013, which includes projects that could be financed up to the end of 2015. Data on the current cycle (2014–2020) are not available yet and they will be entirely released at the end of the current cycle. The total Italian expenditure was 46 billion euros, partly allocated to firms, for which this fund represents the largest source of financing.

We restrict our analysis to subsidies close to the 150,000 threshold, starting from 50,000 euros, as below this threshold the number of projects increases substantially, complicating the analysis. We drop projects above 250,000 euros to maintain a symmetrical window around the discontinuity. In any case, there are few projects above 200,000 euros, as firm subsidies can be released above this threshold only under specific conditions (European Commission Regulation No 1407/2013). Our results are not dependent on this restriction (results available upon request). The available data include only awarded (not requested) subsidies. This is not a concern, as in the vast majority of the examined calls for subsidies the selection committee evaluates only whether to award the submitted project; therefore the requested budget generally corresponds to the awarded funding.[9] Even when they do not, this measurement error would bias our estimates towards zero.[10]

The second data source is Aida, a database provided by Bureau Van Dijk including data on all 2 million Italian firms required to file their accounts.[11] However, due to missing company

[9] Besides consulting the application forms, we also submitted a FOIA request to local institutions awarding subsidies to investigate this matter. We gathered data on more than 3,500 requested subsidies distributed across eight calls. In all cases, the requested subsidy and awarded subsidies corresponded. We discuss more in detail the consequences of observing subsidies awarded in Section C.2.1, SI.

[10] A possible bias could take place if local authorities strategically assigned funds below the threshold to avoid bureaucratic costs. However, such a mechanism should be time invariant or less likely after 2013, as the bureaucratic burden for the police and the local awarding institutions have likely decreased with the new law due to the availability of a centralized database of mafia-related crimes.

[11] All firms requesting subsidies have to file their accounts publicly.

identifiers in the OpenCoesione database, we can only match 45% of the observations. For consistency, we use the matched database for the main analyses, but include all tests on the full sample of companies in the Appendix (Section C.4). We show that the matched sample is representative of the full, with a comparable number of subsidies in each year (Table 46, Appendix). Overall, our final matched sample includes almost 10,000 subsidies spread across 437 different calls. In the Appendix, we include descriptive statistics (Table 45) and we plot the distribution of projects by economic sector and institution in charge of the call (Figure 58).

Figure 17 plots the distribution of subsidies 50,000–250,000 euros for the periods before and after 2013. The figure shows a striking jump in subsidies released right before 150,000 euro, the threshold at which the Antimafia Law applies after 2013. This descriptive evidence is in line with the hypothesis that firms self-select below the threshold to avoid Antimafia screening. A similar jump is not visible at the pre-2013 threshold of 154,937 euros. We observe other peaks at 60,000, 100,000 and 200,000 euros, but those are quite similar before and after 2013, suggesting their presence is related to round numbers acting as reference points (Ashworth and Heyndels, 1999), while we observe a very different pattern for the 150,000 euros bin before and after 2013, when the number of subsidies increases by almost 4%.

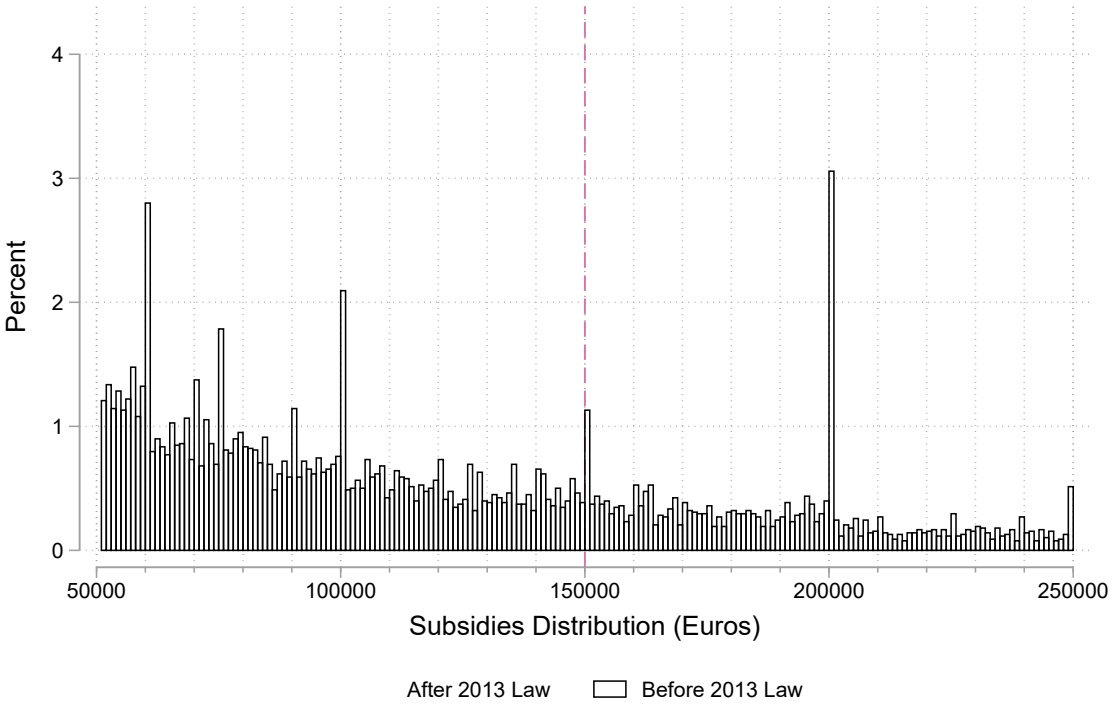
4.5. The effect of the policy: firms sorting at the threshold

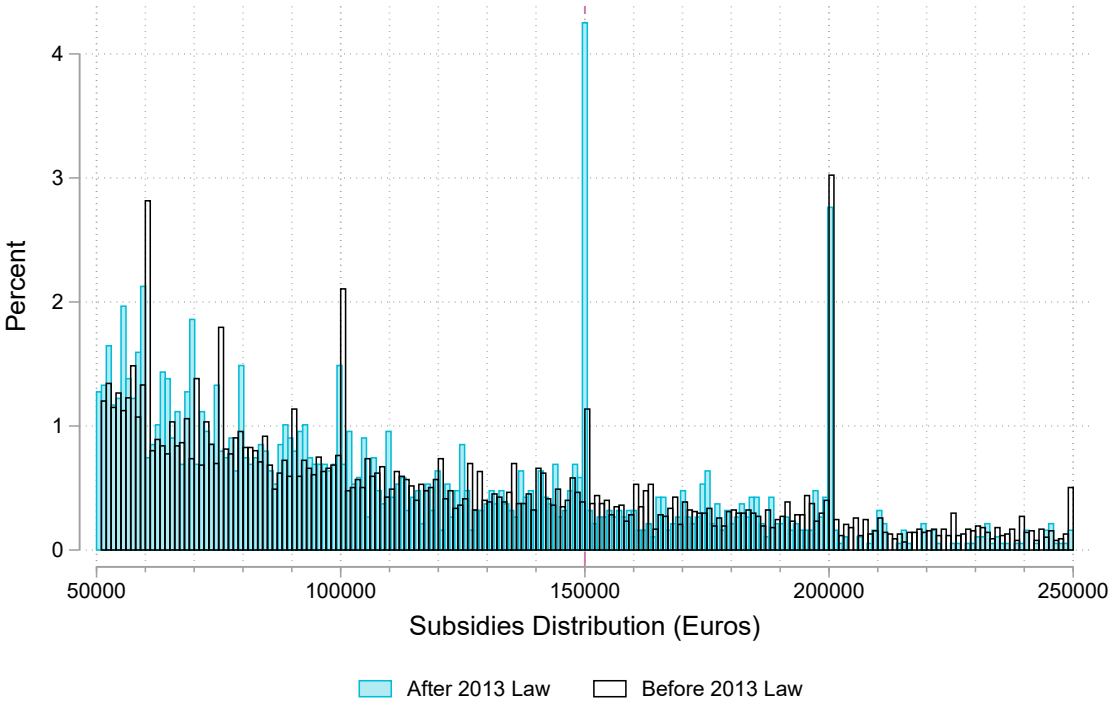
4.5.1. Estimation strategy

We test for the presence of sorting in subsidies at the 150,000-euro threshold using a DID specification[12]. First, we collapse the database into bins of 1,000 euros, obtaining 1,608 bins of values between 50,000 and 250,000 euros for each year from 2008 to 2015. We then compare the number of subsidies in each bin before and after the strengthening of the Antimafia Law in 2013, focusing on the bin right below the previous threshold (funding between 154,000 and 155,000 euros) and just below the new threshold (funding 149,000–

[12] A regression discontinuity is not the correct approach in this context, as the forcing variable – the amount of funding – is endogenously determined.

Figure 17: Distribution of subsidies before and after 2013 law





150,000 euros, where the value of 150,000 euros is included). Specifically, for each bin j in year t, we consider:

$$NSubsidies_{jt} = \theta_t + \sum_{a=50k}^{250k} \beta_j Bin_j + \gamma_t Antimafia Law_t + \sum_{a=50k}^{250k} \delta_{jt} Bin_j * Antimafia Law_t + \epsilon_{jt} \tag{4.1}$$

where $NSubsidies_{jt}$ is the count of the number of subsidies in each bin-year; Bin_j is a vector representing each bin in our distribution (amount between 50,000 and 250,000 euros, in which the first bin, 50,000–51,000 is the base category); $Antimafia Law$ is a dummy equal to 1 after the strengthening of the Antimafia Law in 2013. Our coefficient of interest is δ when $a = 149,000 - 150,000$, capturing the increase in subsidies in the bin just below the threshold after 2013. We are also interested in testing whether the old law, with the threshold of 154,937 euros, had any effect on sorting. Notice that with in this specification standard errors are calculated on a binned database using the actual number of subsidies per bin as outcome variable and are thus close to zero. We can, however, estimate the same specification using, instead of the vector of Bin, a dummy equal to 1 for the bin $a = 149,000 - 150,000$. In this way, the estimated standard errors are correct and return an almost identical result (Column 2, Table 13). We also run the same specification including region times year fixed effects to account for fixed and trending differences between regions. In Appendix C.3, we also show that results are equivalent to adopting a bunching estimation strategy.

4.5.2. Identification assumptions

The model correctly identifies sorting at the threshold if the assumptions of the DID are met. First, to the best of our knowledge, no other change at the 150,000 euros value took place after 2013. It is possible that some local governments set a maximum of 150,000 euros

in subsidy calls. Our data do not include information maximum values, but to account for this possibilty we research all calls in the 149,000–150,000 range and drop the one call which had this maximum. This process biases our results towards zero by asymmetrically reducing the sample in the 150,000 euros bin only.

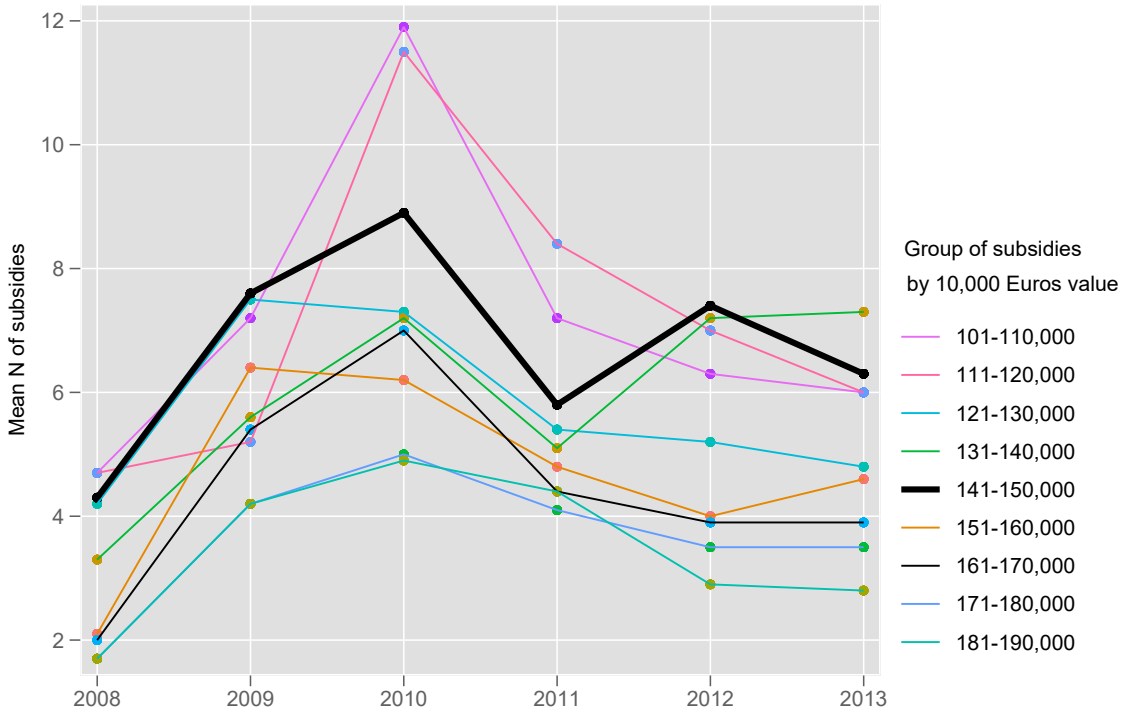
We demonstrate the parallel trend assumption showing that trends in the number of subsidies in treated (150,000 euros) and control units are parallel before 2013 and that the gap in levels between treatment and control groups does not impact the differences in trends. Figure 18 consider the average number of subsidies grouped by year and 10,000-euro values (101,000–190,000 euros).[13] and shows a general common trend across the several control groups (colored) and our treated group (black thick line). The differences in levels are mostly due to more subsidies of smaller amounts (101,000–120,000 euros). This pattern is unlikely to affect trends when focusing on the comparison between subsidies just below and just above 150,000 euros. In Figure 67, SI we show that results hold if we split the sample by whether a city displays or not mafia presence.

4.5.3. Results

Figure 19 and Table 13, Column 1 show the results from estimating Equation 4.1. In Column 2 of Table 13 we replace the *Amount* for each bin with a dummy equal to 1 when the amount is 150,000 euro. In Figure 19 each dot is a coefficient representing the change in the number of subsidies in the corresponding bin after the enforcement of the Antimafia Law in 2013; the dotted vertical line indicates the 150,000-euro threshold. In the bin right below the threshold, there are 29.2 more subsidies after 2013 with respect to the bin just on the other side of the threshold (150,001–151,000 euros), a strikingly large difference corresponding to a 387% increase in the mean number of subsidies per bin and an outlier of the distribution located at more than 4 standard deviations away from the mean. Instead, considering the 155,000-euro coefficient for the old law, the change in the number of subsidies was -1.17 before the threshold was removed and 0.17 after. Both coefficients are in line with average

[13] Notice that we consider a different bin size than in the main specification (10,000 euros instead of 1,000) so that we can observe a trend rather than idiosyncratic variations.

Figure 18: Parallel trends in the subsidies by 10,000-euro groups



Note: The figure plots the average number of subsidies per year for groups of 10,000 euro values. The treated group is 141,000–150,000 euros, including all subsidies just below the threshold of application of the law (thick black line). All other groups are controls. Within each group, the yearly average is calculated on the 1,000-euro bins database. For example, an average of 8 for the treated group in 2009 means that in the 10 bins between 141,000 and 150,000 euros, the average number of awarded subsidies was 8.

fluctuations over time in our distribution, and the negative sign before 2013 indicates that, even with the old law, firms were not systematically sorting at this threshold. This behavior is in line with anecdotal evidence suggesting that screening was ineffective before the 2013 law strengthening. Figure 19 also demonstrates that there are no comparable differences at other round numbers after 2013. We also test a more demanding specification including region times year fixed effects to absorb any fixed and trending difference across regions in Figure 60.

Findings are not driven by a specific year after the enforcement of the new law (Appendix Figure 64, panel a), they are robust to increasing or reducing the size of the bins to 2,000,

500 or 100 euros (Appendix Figure 64, panels b-d), to changing the reference category (Figure 65, left), to removing year fixed effects (Figure 65), and to using the full sample of subsidies rather than the subset for which we could match information on firm characteristics (Appendix Section C.4). Appendix C.7 shows that the increase at 150,000 Euros comes from subsidies which were awarded above the threshold before 2013, as documented by the presence of a missing mass in the distribution above 150,000 euros after 2013. Additionally, we do not observe sorting where we should not: in cities dissolved for mafia infiltration, the Information is required for any amount of subsidies, and we observe no sorting. Similarly, in agricultural funds it is hard to establish the amount ex-ante as this depends on crops realizations and again we observe no sorting. Results are discussed in Appendix, Section C.2.3.

In summary, how many firms applying for funds are connected to mafias? If mafia-connected firms drove the entire jump, then at least 3.8% of the firms receiving European subsidies would be connected to criminal organizations. This estimate is a lower bound for two reasons. First, firms connected to mafias might keep applying for amounts below 150,000 euros independently of the Antimafia Information Law. Second, other firms connected to mafias might still circumvent the threshold using alternative methods (see the Appendix C.6). It is therefore likely that organized crime misappropriation of public funds is considerably larger than what we can estimate.

4.6. Is sorting driven by mafia-connected firms?

4.6.1. Stronger sorting where mafia is present

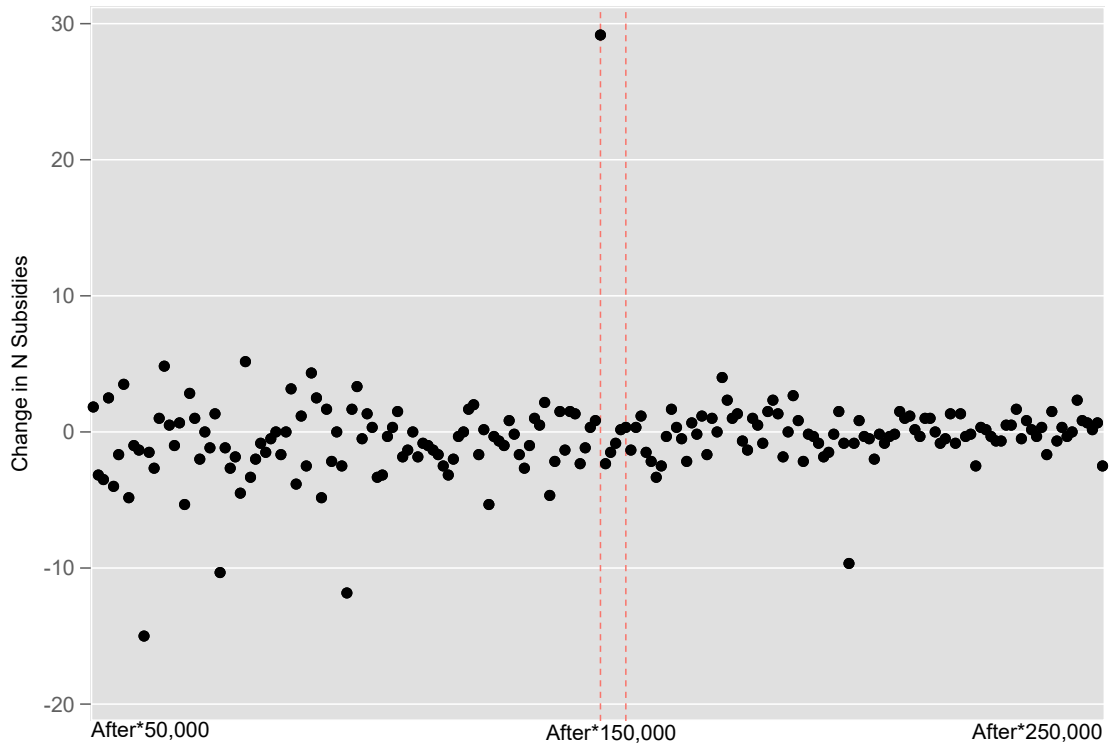
If mafia-related companies are driving sorting, we should expect sorting to be stronger in areas with greater criminal presence. We indicate as mafia-infiltrated cities with one of the following indicators: city councils dissolved due to ties between criminals and local politicians, mafia victims, firms and property seized from criminal organizations. This measure allows to measure mafia presence at the micro level while also accounting for different types of activities (from violence to control of the legal economy) and different ways

Table 13: Change in subsidies by bin after 2013 Law

	(1)	(2)	(3)	(4)
Bin=149-150,000	9.833	8.288	5.333*	7.333*
	(0)	(0.381)	(0)	(0)
Antimafia Law	0.146	-0.407	0.412*	0.0730
	(0.325)	(0.280)	(0.163)	(0.162)
Bin=149-150,000×Law	29.17*	29.72*	4.167*	6.667*
	(0)	(0.173)	(0)	(0)
Bin=154-155,000	-1.167*			
	(0)			
Bin=154-155,000*Law	0.167*			
	(0)			
Mafia			2.167*	0.500*
			(0)	(0)
Law×Mafia			-0.667*	0
			(0)	(0)
Bin=149-150,000×Law×Mafia			20.83*	15.83*
			(0)	(0)
Observations	1,608	1,608	3,216	3,216
Number of bins	201	201	402	402
Year FE	Yes	Yes	Yes	Yes
Interaction Bins × Law	Yes	No	Yes	Yes
Mean DV	5.99	5.99	2.99	2.99
Sd DV	6.56	6.56	3.84	3.84

Note: The table shows results from the DID model (Equation 4.1). The DV is the number of subsidies awarded in each bin. We report only the coefficients of interest, for the bin below the new Antimafia Law threshold ($149,000 - -150,000$ bin) and below the old threshold ($154,000 - -155,000$ bin). $AntimafiaLaw$ (or Law) is a dummy equal to 1 after 2013. In column 2, we estimate the same specification using, instead of the vector $Amount$, a dummy equal to 1 only when the amount is in the 150,000 euros bin and equal to 0 for every other bin. $Mafia$ (Col 3) is a dummy equal to 1 if at least one indicator captures mafia presence (at least 2 indicators, in Col 4). The reference category is 151,000 euros. Standard errors are clustered at the bin level. *p<0.05

Figure 19: Change in subsidies by bin after 2013 Law



Note: The figure shows coefficients from the DID in Equation 4.1, estimating the change in the number of subsidies for each bin before and after the Antimafia Law approval. The coefficient of interest is at the 150,000-euro threshold (first vertical line). The second vertical line represents the 154,937-euro threshold imposed by the old law. The reference category is 151,000 euros. Robust standard errors are clustered at the bin level.

to unveil it (from judiciary-driven discoveries, such as seizures, to homicides). Appendix Figure 59 shows the distribution of mafias in Italian cities based on this measure.

We estimate a triple-difference model interacting each bin of the distribution of subsidies with $AntimafiaLaw$, as in Equation 4.1, and with a dummy indicating mafia presence.[14] Figure 20 and Table 13 (column 3) show that sorting is mostly driven by firms located in mafia-affected cities, where there are 20.8 more subsidies just below the threshold with respect to the effect measured by the simple interaction $AntimafiaLaw$ x $Bin = 150,000$ – which is still positive, with a coefficient of 4.2.[15] Results are robust to adopting a more restrictive definition of mafia, in which the dummy $Mafia$ takes value 1 only in cities with at least two indicators recording mafia presence (Table 13, column 4).

4.6.2. Sorting in kinship-based criminal organizations

In a similar vein, we test the heterogeneity of the results based on the organizational structure of one of the main Italian criminal organizations: the 'Ndràngheta (from Calabria), which, unlike Camorra, Cosa Nostra and Sacra Corona Unita (from Campania, Sicily and Apulia, respectively) relies heavily on family ties for its recruitment (Varese, 2006). We expect the new Antimafia Law to be more disruptive for firms linked to this criminal organization, as it imposes checks on the business owner's family members. 'Ndràngheta-linked firms might be more likely to sort below the 150,000-euro threshold after 2013 due to the difficulty of finding alternative figureheads outside the family. In this test, we consider only the sample of provinces in which at least one of the three criminal organizations is active, and test whether there is a stronger sorting after 2013 in the areas dominated by the 'Ndràngheta than in those dominated by Camorra or Cosa Nostra. We use the Transcrime (2013) index to classify provinces based on the presence of a specific criminal organization. While this measure is only available at the province (rather than city) level, it allows us

[14] To estimate this model, we create a new binned database of subsidies in which each bin is duplicated and in order to identify the number of subsidies awarded each year in cities with and without mafias. The number of observations is therefore doubled.

[15] In Figure 67, we replicate the common trend analysis presented in Section 4.5.2 distinguishing by areas with and without mafia presence.

to assess the prevalence in each area of one or the other criminal structure, a piece of information we do not have at the city level. We run a triple-difference model similar to the one presented above for mafia-affected cities, this time at the provincial level. In this case, we interact Bin x $AntimafiaLaw$ with a dummy taking a value of 1 in provinces affected by 'Ndràngheta, 0 in provinces affected by Camorra or Cosa Nostra, and missing otherwise.[16] The bottom panel of Figure 20 plots the differential effect of the Antimafia Law in 'Ndràngheta-affected areas and compares it to the results we presented in the previous test on mafia presence. In line with our expectations, the probability of sorting to avoid the threshold is considerably higher in 'Ndràngheta provinces, suggesting that the Antimafia Information Law was more disruptive for 'Ndràngheta related firms.[17]

4.6.3. Sorting firms behave like mafia companies

In this section, we show that firms that sort exhibit different traits in terms of project performance, financial accounts, sector and longevity. We consider a dataset at the subsidy level, rather than a binned one, to account for the individual characteristics of firms and subsidies. [18] For a subsidy i awarded by institution s in year t to a firm based in municipality m, we estimate the following equation:

$$\begin{aligned} Y_{islmt} =& \sigma_s + \mu_m + \theta_t + \gamma_1 AntimafiaLaw_t + \gamma_2 JustBelow_{islm} \\ &+ \gamma_3 AntimafiaLaw * JustBelow_{ismt} + \gamma_4 X_{ismt} + \epsilon_{ismt} \end{aligned} \tag{4.2}$$

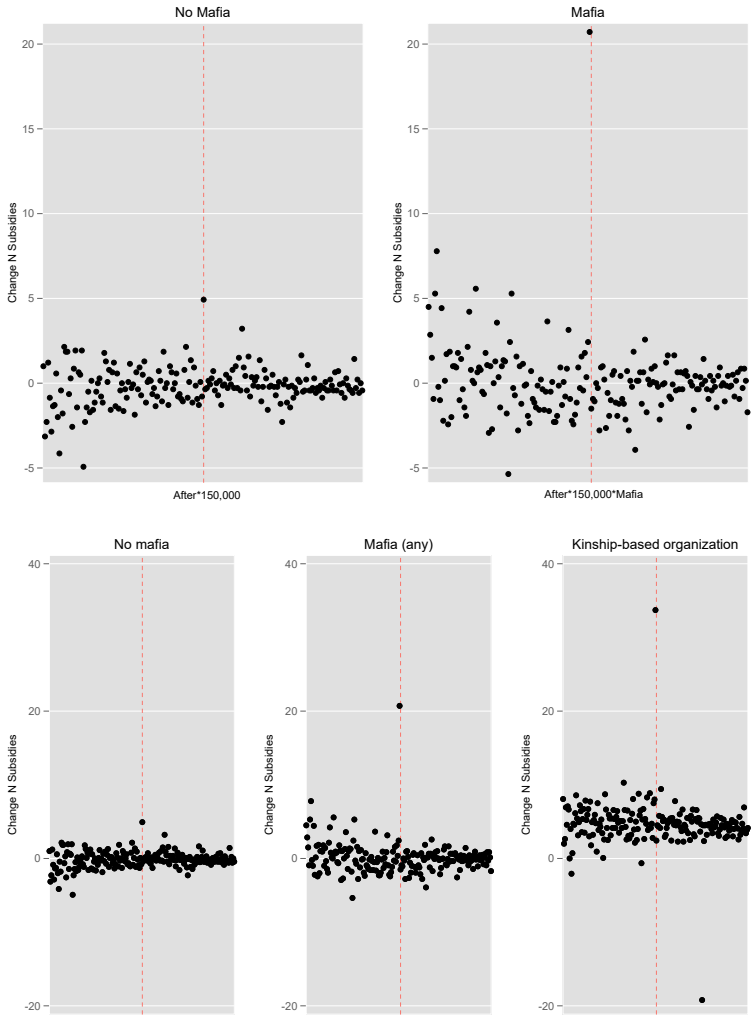
where σ_s μ_m and θ_t are, respectively, the type of firm receiving the subsidy, the type of institution awarding it, city and year fixed effects; $AntimafiaLaw$ is a dummy equal to

[16] We also consider areas in which 'Ndràngheta as well as other mafia groups are both active to be 'Ndràngheta active provinces . Different definitions of this variable, allowing for mutually exclusive categories, do not change the results of this test but they affect the significance of the findings.

[17] All the results presented in this section are replicated on the entire sample, and explained in more detail in the Appendix.

[18] In order to consider firm- or subsidy-level characteristics, we cannot use the same identification strategy as in Section 4.5, which relied on a binned database in which each observation corresponded to a bin-year, with bins corresponding to values between 50,000 and 250,000 euros. Instead, we could consider the firm- or subsidy-level specification. As few firms received more than one subsidy in our sample, we prefer a subsidy-level analysis. Therefore, in these specifications, we control for whether more than one subsidy has been issued to the same firm.

Figure 20: Change in subsidies after 2013, by mafia and 'Ndràngheta presence



Note: The two top panels plot coefficients from the DID estimate (Equation 4.1) interacted with a dummy indicating mafia presence in a city. On the left(right), we show the change in the number of subsidies per bin after the approval of the Antimafia Law in cities without(with) mafia presence. In the three panels below, we present a similar test by 'Ndràngheta presence.

1 after the approval of the 2013 law; $JustBelow$ is a dummy equal to 1 for subsidies *just below* the 150,000-euro discontinuity and above 149,000 euros. We add controls for years of activity and number of projects for which firm i receives funding. The dependent variable Y refers to characteristics of a subsidy or firm, depending on the specification. This DID specification allows us to consider whether firms sorting at the 150,000-euro threshold after the approval of the Antimafia Law differ in meaningful ways from those submitting requests at any threshold before and after 2013.[19]

We present the results from these analyses in Table 14. Firms sorting below the threshold of application of the law are significantly more likely to display worse project performances: they are more likely to delay the conclusion of the project by almost 3 months (Column 1) and 25% less likely to find private sources of co-financing (Column 2). They are 31% more likely to operate in typically mafia-affected sectors, such as construction and transportation (Varese, 2011; Lavezzi, 2008), and 17% less likely to be in research, innovation and education (Columns 3 and 4). Sorting firms are also 7% more likely to have been created less than two years before receiving the subsidy, a result compatible with the possibility that the firm was expressly created to apply to the call for subsidy (Fantò, 1999; Savona et al., 2016) (Column 5).[20] The effect of short-lived firms is substantial in magnitude if we consider that the average life of a company in our database is 16.6 years. Finally, the Board of Director of sorting companies is 16% more likely to come from a mafia-affected province, even when we compare observations within the same city (Column 6).

We also investigate whether these firms differ from others in terms of financial outcomes. Consistently with recent evidence on criminal firms (Transcrime, 2013; Furciniti and Frustagli, 2013), we find that firms that sort have lower debts by almost half a standard deviation with respect to other firms, and lower bank debts by 514,000 euros (Appendix Table 48,

[19]However, the sample of firms receiving more than one subsidy is too small around the 150,000-euro threshold to implement specifications including firm-level fixed effects.

[20]Note that only in this test, we control for firms' legal status, as many calls focus only on start-ups, whereby very young firms could be over-represented in our sample. The results are not affected by this additional control. Note also that columns 5 and 6 have a lower number of observations due to missing data in the dependent variables.

Columns 1 and 2). The intuition behind this finding is that if criminals exploit a firm for money laundering, they often camouflage the illegal source of cash by repaying 'fake debts' to external or internal creditors. As a result, they close their balance sheets with lower debts than average and, specifically, with lower debts from banks, which are heavily regulated against money laundering and do not allow opportunities for recycling through fake debt declarations. These lower debts are unlikely to stem from virtuous behavior of these firms, if we consider that they also display worse performance in terms of delays and private co-financing and that they do not display higher profitability. Running the same analysis using return on assets as the dependent variable, a measure of firm productivity, we indeed find negative and insignificant effects (Table 48, Column 5). This inconclusive finding is likely the mix of several effects at play when considering criminal firms: on the one hand, they might just be an unproductive proxy used for money laundering. On the other hand, they might be productive firms that flourish due to extortion and violence, which distorts the competition and captures entire markets. The idea that mafia-related companies can be used either as pure money laundering devices or as a source of actual profit is supported by evidence from Mirenda et al. (2017). We also provide results on cash and cash ratio, on which the literature has provided contrasting predictions. We find a weakly positive effect on cash ratio and no effect on cash (Table 48, Columns 3 and 4).

The sample of firms just above

We replicate all the tests in Table 14 comparing observations just below the threshold with those just above it, in the group 150,000–160,000 euros (we cannot compare the sample 149-150,000 to a symmetric sample above the threshold as this would overly reduce the sample). The group applying for little more than 150,000 euros consists of firms that exceed the Antimafia threshold even when they could avoid being screened for mafia connections with very limited losses in terms of foregone profits. Therefore, they constitute an ideal control group of firms with no mafia connections. When comparing this group with sorting firms, the coefficients on delay, private co-financing, sectors and board of directors are substantially larger. We do not find statistically significant results on firms' longevity, which might be

driven by the small sample size. All results are shown in Appendix Table 49.

4.6.4. Alternative reasons to avoid the threshold

In section 4.3.1, we discuss a set of reasons which might explain why some firms sort below the threshold, including avoidance of police corruption or bureaucratic inefficiency. Here, we investigate whether firms sorting below the threshold are more likely to be located in areas with high levels of institutional corruption or bureaucratic inefficiency: our aim is to exclude that firms are sorting to avoid the risk of i) incurring into corrupted local police or ii) of dealing with particularly inefficient local institutions.

We replicate estimation (2), considering two outcomes, first, whether a firm is located in a municipality in which there has been at least one corruption related investigation (corruption, bribery, malfeasance, graft or embezzlement) in the period 2004-2014. In a second test, we measure bureaucratic inefficiency by the speed of payments at the municipal level (in the period 2003-2012), that is, the ratio between the outlays actually paid and the outlays committed in the municipality budget. This is a commonly used proxy to measure bureaucratic efficiency at the local level (Gagliarducci and Nannicini, 2013).[21] As those outcomes are measured at the city level, in these specifications we only include region fixed effects.

Column 7 and 8 of Table 14 show that sorting firms are not more likely to be located in municipalities with higher levels of corruption or bureaucratic inefficiency.

4.7. Conclusions

In this chapter, we study a policy designed to reduce criminal revenues by screening mafia-connected firms out of public calls for subsidies. Our results point to a strategic and sudden response by mafia-affiliated firms, which immediately react to a new law enforcement and submit applications right below the threshold. We provide evidence in line with the interpretation that companies sorting are mafia-related. Among the others, we show that

[21] Both corruption and speed of payments data are collected for the above mentioned years by the Italian Ministry of Interior.

sorting is driven by cities affected by mafias and that this effect is even stronger if we consider a kinship-based criminal group ('Ndrangheta), which is more likely to have been affected by the investigation of family members included in the Antimafia Information Law. We also study the characteristics of firms sorting at the threshold and show that they are considerably different from firms that do not and display features consistent with our knowledge of mafia-related companies.

The strategic sorting we observe implies that firms believe i) that the anti-mafia checks will not be undertaken below the 150,000 euros threshold and ii) that the police will not – at least in the short run – find out about the strategic sorting of mafia-affiliated firms. Are these assumptions plausible? The first relies on the repeated interactions between firms and local institutions: if, before 2013, the police was enforcing controls only below the old threshold at 154,937 euros (as confirmed by our questionnaire to *Prefetture)*, business owners might expect a similar pattern with the new law. The second assumption is plausible if we consider that i) *Prefetture* have access only to local data, which might not necessarily show the patterns identified in this chapter, and ii) there is no national authority in charge of tackling the influence of mafias in calls for firm subsidies.[22] This might explain why we are the first to highlight such patterns in firm subsidies data.

Our findings highlight the evolving face of criminal organizations, which in recent decades have expanded their businesses to new geographic areas and infiltrated the legal economy in unprecedented ways. The strategic and sudden response of mafia-affiliated firms to this law strengthening should be taken as additional evidence of how well structured and organized is the presence of criminals in the legal economy and in the misappropriation of public money. These results call for global evaluations of anti-corruption policies, investigating areas and activities besides those directly targeted by the policy and taking into account the strategic and fast-adjusting behavior of criminal actors.

[22]Conversely, there is a national authority focusing on corruption in public procurements (National Anti-Corruption Authority).

At least one important question is left unanswered: overall, does the strategic response by mafia-affected firms outweigh the benefits of increased oversight on large contracts? Does the gain from protecting some public funds from mafia appropriation compensate for the cost of higher scrutiny from the state? In Appendix C.8, we provide a back of the envelope calculation based on our findings and on estimates from previous studies on the Antimafia screening costs. This calculation suggests that not only the state gains by enforcing screening at 150,000 euros, but that the gains for the State in terms of reducing misappropriation of subsidies by mafia firms would overcome screening costs even when setting the screening threshold close to zero.

Besides reducing criminal profits, preventing the misappropriation of public funds by organized crime can generate a variety of positive consequences. It can dispossess criminal organizations of patronage opportunities, such as employing the local population in their companies and gain their consensus. It can improve the quality of the goods and services generated for the community, for example avoiding the use of substandard materials. Subtracting funds to criminals also means re-directing resources to clean companies, which can use them to produce employment and growth in the territory. Designing appropriate policies that take into account the specific nature and behavior of criminal organizations is thus necessary for reasons that go beyond the fight against organized crime.

Table 14: How sorting firms differ from other firms

	(1) Delay (months)	(2) Private co-financing	(3) Mafia sector	(4) Not mafia sector	(5) Created 2y before call	(6) BoD from mafia area	(7) Corruption	(8) Inefficiency
Just Below	-0.0586	0.0876*	-0.0215	0.0438	-0.0406	-0.0596	-0.00914	0.0537
	(0.0439)	(0.0360)	(0.0401)	(0.0477)	(0.0292)	(0.0770)	(0.0500)	(0.0468)
Antimafia Law	-0.143*	0.00265	-0.00117	-0.164*	-0.0861*	0.202*	0.142*	0.0916*
	(0.0210)	(0.0236)	(0.0243)	(0.0225)	(0.0155)	(0.0351)	(0.0253)	(0.0252)
Just Below x Law	0.268*	-0.246*	0.311*	-0.171*	0.0692	0.158	0.0553	-0.0213
	(0.0695)	(0.0548)	(0.0557)	(0.0579)	(0.0409)	(0.0963)	(0.0683)	(0.0650)
Observations	9,624	9,624	9,624	9,624	9,612	4,765	9,624	9,624
R-squared	0.124	0.368	0.198	0.275	0.163	0.248	0.177	0.185
City FE	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Institution Type FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Years of Activity	Yes	Yes	Yes	Yes	No	No	Yes	Yes
Company Type FE	No	No	No	No	Yes	Yes	No	No
Region FE	No	No	No	No	No	No	Yes	Yes

The table shows results from estimating Equation 4.2 using different dependent variables. *Delay* is a variable equal to the number of months of delay in project completion. $Privateco-financing$ is a dummy equal to 1 when the company co-financed the project. $Mafia$ and $Nomafiasector$ are dummies equal to 1 when the company operates in a sector typically infiltrated (or not) by mafias, as defined in Section 4.6. $Created2ybeforecall$ is a dummy equal to 1 if the company was created two years or less before receiving the subsidy. $BoDfrommafiaarea$ equals 1 when members of the Board of Directors are originally from mafia-affected provinces. *Corruption* equals 1 for cities with at least one public official prosecuted for corruption, bribery, malfeasance, embezzlement or graft. Finally, $Inefficiency$ equals 1 for cities with below-median speed of revenue collection, a measure of bureaucratic inefficiency. Robust standard errors are included in parentheses.

Conclusions

A vast literature has portrayed organized crime as a primitive state, emerging by replacing institutions that are too weak to publicly provide essential functions. This dissertation proposes a different perspective: criminal groups expand and thrive in strong states by exploiting characteristics common to high capacity states, such as competitive markets and elections and an abundant financing of public services. I study the determinants of expansion to strong states as well as the effectiveness of policies that states and civil society can adopt to mitigate the influence of organized crime.

I start by examining the determinants of expansion of southern Italian mafias to the economically and institutionally developed North. I show that the joint impact of two factors explains successful settlement of mafias in a city: the presence of high competition to hire unskilled labor (due to a construction boom) and mafias' capacity to offer cheap informal labor (exploiting migrants from mafia-affected areas in the south). I also show that, once settled, criminals were able to guarantee electoral returns to the party they had agreements with, the Christian Democracy.

While competition is an integral and, in many ways, desirable component of market economies and democracies, the possibility to exploit migrants is neither normatively desirable nor functional. In the next chapter I thus assess whether reducing migrants' exploitation can also undermine criminal groups. I study the effects of a union campaign to fight against migrants' exploitation and inform civil society about the condition of enslavement migrants are often subject to in the Italian fields. Using a difference-in-differences approach comparing treated locations before and after the campaign, I show that the union intervention increased reporting of exploitation as well as crackdown against organized crime, measured as the number of goods and properties seized to criminal groups. Unlike other policies seeking to integrate migrants, this intervention did not increase the vote share of far-right

parties and rather caused an increase in pro-immigration far-left party vote share.

While the third chapter focuses on a civil society intervention to mitigate the power of organized crime, the fourth chapter examines a policy promoted by the state. Together with Gianmarco Daniele, I study the effects of a policy fighting mafia misappropriation of public funds by screening companies applying above a certain funding threshold for ties with organized crime. I find that the policy caused mafia-related companies to sort below the threshold of application of the law, causing an economic loss for mafia-firms. Sorting itself indicates that criminal groups took the threat of state investigation seriously, rather than resorting to alternative methods to avoid it, such as corruption. However, the policy was only effective where screening took place and otherwise criminals kept misappropriating funds. This underscores the importance of designing policies that take crime displacement into account, especially when fighting against sophisticated criminal groups.

This dissertation provides three distinct contributions to the study of the origins and expansion of organized crime. First, it proposes and tests a theory for how expansion takes place in the context of strong states. In the present work, I examine one case of expansion - the move of southern Italian mafias to the north - and I rely on within-case variation to explain how mafias expand. Across-cases analysis would be important to assess the external validity of this theory. Several cases of expansion to strong states hold similar characteristics as those encountered in the Italian case. Lupo (2009) has documented that at the outset of the Italo-American mafia in the US, mafia-members were acting as intermediaries between local businessmen and Italian migrants to exploit their compatriots as labor force. Anecdotal evidence on the Nigerian Black Axe expansion into Italy suggests that this group is thriving by exploiting the work of migrants from their country of origin at conditions close to slavery in the agriculture and construction sectors. All the examples of organized crime expansion to strong states mentioned in the second chapter, from the Mhallami criminality to the 'Ndrangheta in Australia and Germany, are cases in which the move of mafias coincided with that of migrants from the same area of origin as criminal groups. Control

over migrants, capacity to strike deals with local actors and necessity to build reputation, networks and governance are features common to all types of criminal groups. That other cases of expansion of criminal organizations to strong states have similar characteristics to those studied in this chapter, suggests that the dynamics I documented using micro-level evidence from Italy might travel to other regions.

Second, the three central chapters highlight how organized crime is able to exploit certain characteristics common to strong states to both expand and to persist in those contexts. In a strong state, the importance of using organized crime as an intermediary to enforce informal contracts is higher because the likelihood that illegality is denounced and prosecuted is higher. From keeping an illegal political agreement, such as vote buying, secret to overseeing an informal working relation so to prevent workers from denouncing, the role of organized crime is more important where breaking the rule of law is costlier. Criminal groups also thrive by misappropriating public funds, a strategy which yields higher returns in the context of rich and modern states which spend larger sums in public service provision projects.

The third contribution relates to policy design. A vast literature has unveiled the side effects of repressive methods to fight against organized crime: wars on drugs increase drugs prices and intra-groups conflict (Kronick, 2020); mass incarcerations can lead to the creation of prison gangs (Skarbek, 2011); large police and military operations have created civilian casualties to an extent that has put the credibility of the state into question (Lessing, 2017a). Both academic studies and practice point to the necessity of experimenting and testing the effects of non-violent methods to fight against organized crime. The policies studied in this dissertation are examples in which important sources of profits for criminal groups are targeted without creating the scope for costly side effects, such as violence against civilians. More broadly, this dissertation highlights the importance of taking into account the strategies criminal groups to thrive in strong states when designing policies to fight against these groups. New studies of the strategies modern criminal organizations

use to expand and evaluations of the effects and side effects of interventions that try to undermine them would provide important contributions both to the understanding of the relation between organized crime and the state and for policy purposes.

A final, related, contribution is underscoring the importance of migrants' exploitation as a strategy for criminal organizations to expand and to make profits. This finding contributes to the literature on the correlation between immigration and crime by proposing a new explanation why these two variables might keep being associated, although migrants have been shown not to commit crimes at higher rates than natives. In certain contexts, the migration-crime association might exist because criminal organizations exploit migrants to expand further. When this is the case, rather than causing crime, migrants are the primary victims of criminals who thrive by exploiting their condition of vulnerability. This reverses the policy recommendation that should be adopted to break the migration-crime link: rather than imposing new restrictions on immigration to avoid the spread of crime, governments in organized crime rigged areas (or areas where organized crime is expanding) should integrate migrants at higher rates and subtract them from the condition of vulnerability that illegality brings along. Other than protecting victims from exploitation, this policy could directly hurt the profits and expansion capacity of organized crime.

In considering how to tackle the task of preventing migrants' exploitation in practice, it is important to highlight a tension existent between Chapter 2 and 3. In the period of early expansion documented in the second chapter, mafias' growth was uncontested. Neither institutions nor the civil society acknowledged that expansion was taking place until decades later and, in line with it, no comprehensive effort to limit mafia transplantation was undertaken. In the third chapter instead, a civil society institution - the union for agricultural workers - undertook a campaign to fight against migrants' exploitation, thereby damaging criminal groups economically and attracting police attention on their activities. Set in the same country, these two studies examine different time periods (the 1960s-1970s in the first case, the current time in the second) and thus different levels of awareness on mafias'

spread and methods. Nonetheless, in both cases, the state did not acknowledge the role of migrants' exploitation as a potential resource for criminals to thrive nor it adopted policies to protect migrants and limit the profits of organized crime. While considerations on what triggered this choice can only be speculative, it is worth noticing that the integration of both southern Italian migrants in the 1970s and of international migrants in the 2010s was a sensitive and polarizing political topic at the time. It is also worth noticing that, already in the 1960s and 1970s, the unions - in this case, the union for construction workers - had mobilized on the issue of mafia-controlled labor racketeering. Qualitative evidence presented in the second chapter highlights that their effort was less organized (there were only individual initiatives of unionists visiting construction sites to talk to migrants), unionists were less aware of the systematic role of mafias as labor racketeerers and did not have any success in triggering reporting from migrants. This difference in outcomes highlights what could be a crucial factor determining the success of the later union initiative: agricultural unionists in the 2010s had a clear understanding of the situation of blackmailing migrants were subject to and presented them with an alternative to exit the system of exploitation - a path to legal residency. This suggests that, when possible, offering concrete alternatives to victims of exploitation could make the difference between an ineffective anti-mafia, anti-exploitation intervention and one that produces change. Future research disentangling which factors are most effective at triggering anti-mafia reporting is needed to confirm or reject this hypothesis.

APPENDIX - Appendix to How Criminal Organizations Expand to Strong States

A.1. Additional details on the contribution

The conditions for the expansion of criminal organizations to new areas is the topic of investigation of the book by Federico Varese (2011). Pulling together evidence from seven case studies of failed and successful transplantation, including two in northern Italy, Varese finds that the unintended move of Mafiosi, the absence of other criminal groups and the presence of new or booming markets in which mafias can provide private protection in absence of the state are common to cases of successful expansion. The importance of the move of Mafiosi, creating a supply of criminals, is confirmed in a number of studies, including in the Italian case (Pinotti and Stanig, 2016; Scognamiglio, 2018; Sviatschi, 2018) and the present paper will not delve into this aspect further. In examining the conditions allowing for a successful establishment of organized crime, my study innovates over this seminal contribution both methodologically and conceptually. First, instead of comparing across case studies as in Varese (2011) or across provinces as in Buonanno and Pazzona (2014), I use within-city and time variation comparing outcomes in 5900 cities over two decades and using an identification strategy which accounts for the endogeneity of why certain conditions take place in a certain set of cities. Second, I show that booming markets are only relevant to the extent that they coincide with migration booms, an element which has little role in Varese's theory. Third and most importantly, while offering governance in markets that states are unable to control is the activity Varese (2011) identifies as crucial for transplantation, I contend that mafias expanded by offering cheap illegal labor to local businessmen while protecting them from the prosecution of the state. The service provided by expanding criminal groups is in some way the opposite than the service offered by emerging criminals: they offered entrepreneurs protection *from* the state when businessmen are hiring labor below market standards (a complement to a strong state), rather than protection in place of a state unable to provide it publicly (a substitute to a weak state).

A.2. Descriptive Statistics

I start by presenting a descriptive statistics table with all variables used in the analyses (Table 45). Figures 25 and 26 map each source of data on the dependent variable individually. Differences in covariates balance between cities with and without mafia-related news are reported in Table 16. Cities with at least one news related to mafia are on average larger, have higher education, less analphabetism and less gender differentials in access to education. They display similar levels of employment, but employ more people in industry and agriculture than in services. They also differ in having less home owners but more houses endowed with services. That cities with mafia-related news are larger on average might reflect both the higher likelihood that mafias establish their presence in larger cities (Dugato et al., 2019) and a higher likelihood of reporting events in larger cities. However, while the mean population is larger in cities with mafia news, the median is much smaller (6,016 inhabitants) and the range of cities in which we observe mafia-news is extremely large, with mafia presence observed in the smallest city (32 inhabitants) and the standard deviation of population in cities with at least one mafia-related news being 158,086. Additionally, a plot relating news per capita and population shows no positive relation between the two (Figure 30). Finally, Figure 28 maps the number of news in the decade 1960-70, before the scandal in Turin increased reporting about mafia in the region of Piedmont.

Table 15: Descriptive Statistics

	N	mean	sd	min	max
Mafia Presence:					
Mafia, news per capita		0.015	0.152	0.000	12.500
News selected by lasso		0.005	0.049	0.000	3.125
News selected by random forest		0.014	0.129	0.000	9.375
Assuming continuous presence		0.018	0.157	0.000	12.500
News mafia-crimes only		0.010	0.087	0.000	6.250
News winsorized		0.013	0.087	0.000	1.834
Mafia, t-1		0.002	0.051	0.000	5.093
Competition:					
Emp Constr pc		0.000	1.000	-0.718	33.083
Z Emp Constr		0.000	1.000	-0.152	7.897
Z Emp C No leave out		0.0001	1	-0.152	7.57

Constr Emp Growth since 1951		55.340	350.301	-18932	12747
Constr Emp Growth pc since 1951		0.052	0.536	-31.667	0.984
Above 10,000 inhab 1871		0.033	0.179	0.000	1.000
Migration:					
Migr South pc		-0.000	1.000	-0.742	4.248
Migr endog pop		-0.000	1.000	-0.837	3.835
Z Migr South		-0.000	1.000	-0.839	4.030
Z Migr Drought		0.000	1.000	-0.817	4.232
Z Migr No leave out		0.000	1.000	-0.738	4.722
Interaction:					
Emp C x Migr		-0.000	1.000	-0.419	48.547
Emp C x Migr endog pop		0.000	1.000	-0.471	42.311
Z Emp C x Migr		-0.000	1.000	-0.134	30.179
Z Constr x Migr Drought		0.000	1.000	-0.139	24.628
Z Constr x Z Migr No leave out		0.000	1.000	-0.132	28.654
Controls:					
Pop 1871		3076.261	8612.665	0.000	2910500
Pop 1871 x Growth (in 1000)		555859	1867916	0.000	82978060
Population		5901	45159	51	2781993
Family size		3.454	0.561	1.800	6.500
Pop density		207.010	395.286	1.000	9493.500
Gender educ differ		160.366	80.837	0.000	1337.000
Analphabetism		3.872	4.519	0.000	39.500
Emp Agric		9.955	5.606	0.000	85.000
Emp Industry		13.426	6.821	0.000	81.000
Emp Services		32.885	22.054	0.000	97.600
Emp Commerce		43.735	19.524	0.000	93.500
Property houses		64.044	18.067	2.600	100.000
With degree		3.601	2.190	0.000	20.700
Elderly Depend		20.127	8.124	5.700	89.300
Young Depend		31.377	7.837	5.000	76.000
House w services		51.773	28.438	0.000	100.000
Female Emp		50.195	6.515	25.000	86.200
Male Emp		26.036	10.382	1.900	85.800
Employment		74.827	6.099	39.400	98.500
Ratio male		98.964	7.571	55.500	243.400
Observations	11925				
Politics:					
DC vote share		0.309	0.251	0.000	0.992
Log total DC vote		6.108	1.635	0.000	13.393
Turnout		0.863	0.079	0.040	1.000
Berluconi vote share		0.078	0.126	0.000	0.750
Log tot Berlusconi vote		5.847	1.414	0.000	13.406
Lega Nord vote share		0.053	0.101	0.000	0.706
Mafia x Post 57		0.000	0.935	-27.131	19.430

Mafia x Post 62		0,000	0.901	-27.131	19.430
Observations	95392				

Note: The letter Z indicates an instrumental variable. All independent variables are considered in their zscores.

Figure 21: Mafia and construction employment over time, 1960-1980

Figure 22: Mafia-related news over time, total number and percentage cities affected

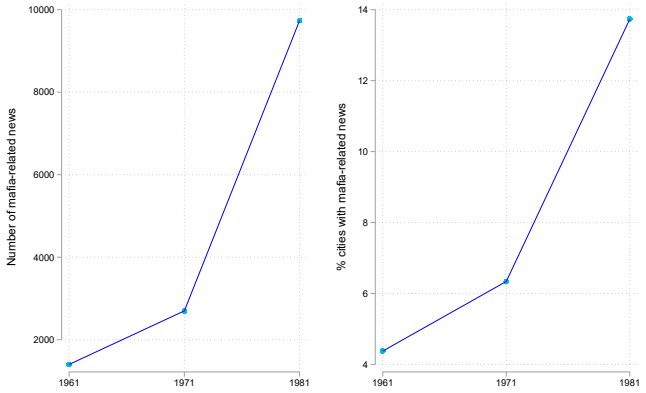


Figure 23: Construction employment over time, total number and population share

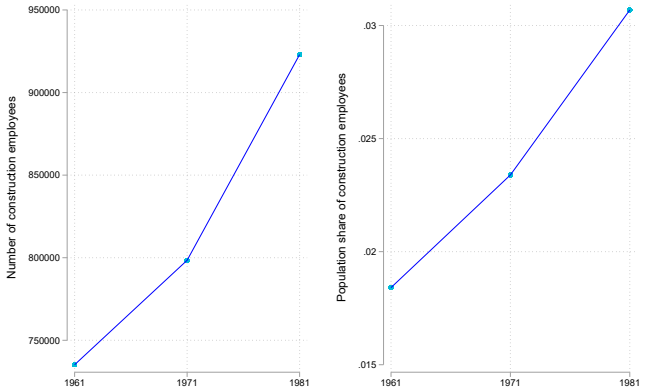


Table 16: Cities with and without mafia-related news, 1961-81

	(1)	(2)	(3)	(4)
	No mafia news	Mafia news	Diff Mean	Std Difference
Population	-0.059	0.660	0.718	0.199
	(0.110)	(3.610)	(0.035)	
Pop density	-0.055	0.806	0.861	0.325
	(0.825)	(2.513)	(0.035)	
Family size	-0.264	-0.604	-0.340	-0.328
	(0.811)	(0.644)	(0.026)	
Analphabetism	-0.172	-0.350	-0.178	-0.179
	(0.816)	(0.561)	(0.026)	
With degree	0.147	1.191	1.044	0.544
	(0.925)	(1.682)	(0.033)	
Gender educ differ	-0.047	-0.101	-0.054	-0.048
	(0.915)	(0.654)	(0.029)	
Employment	-0.423	-0.472	-0.050	-0.043
	(0.877)	(0.745)	(0.028)	
Female Emp	-0.260	-0.307	-0.047	-0.041
	(0.877)	(0.731)	(0.028)	
Emp Agric	0.066	0.512	0.446	0.299
	(1.006)	(1.100)	(0.033)	
Emp Industry	0.225	0.944	0.719	0.417
	(0.887)	(1.481)	(0.031)	
Emp Services	-0.236	-0.617	-0.381	-0.310
	(0.879)	(0.861)	(0.029)	
Emp Commerce	0.189	0.285	0.096	0.075
	(0.935)	(0.875)	(0.030)	
Share elderly	0.182	0.206	0.025	0.016
	(1.108)	(1.029)	(0.036)	
Elderly Depend	0.278	0.222	-0.056	-0.038
	(1.051)	(1.022)	(0.034)	
Young Depend	-0.001	-0.261	-0.259	-0.194
	(1.018)	(0.863)	(0.033)	
Ratio male	0.019	-0.267	-0.286	-0.217
	(0.987)	(0.878)	(0.032)	
House w services	0.388	0.681	0.294	0.232
	(0.923)	(0.868)	(0.030)	
Property houses	0.208	-0.340	-0.548	-0.434
	(0.895)	(0.890)	(0.029)	
Inhab per room	-0.067	0.050	0.117	0.030
	(0.424)	(3.836)	(0.039)	
Lack Services	-0.388	-0.681	-0.294	-0.232
	(0.923)	(0.868)	(0.030)	
Observations	10,889	1,036	11,925	

Note: All values are standardized

Figure 24: Indicators of mafia presence mapped individually

Figure 25: Mafia-related news 1961-1981

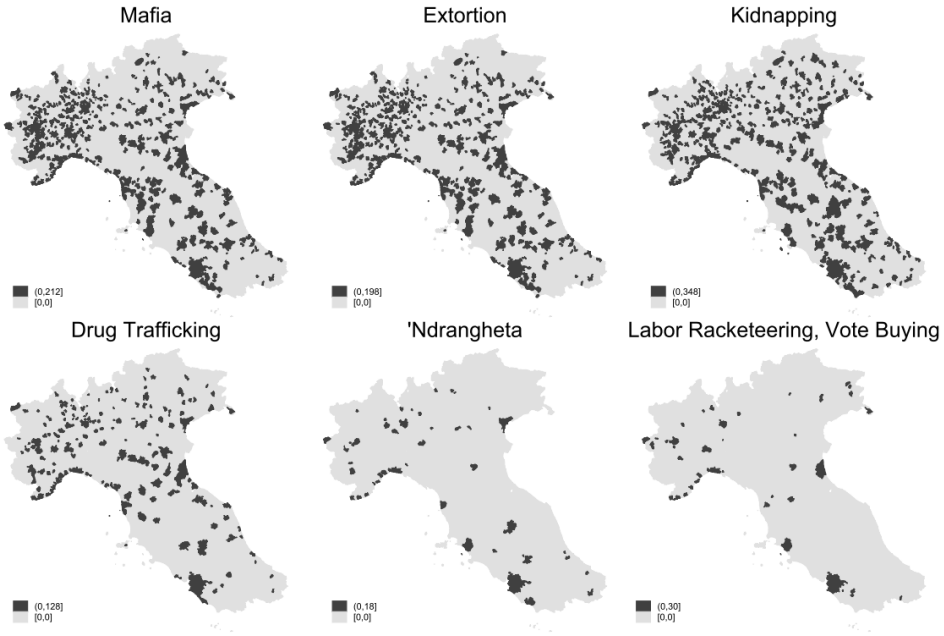
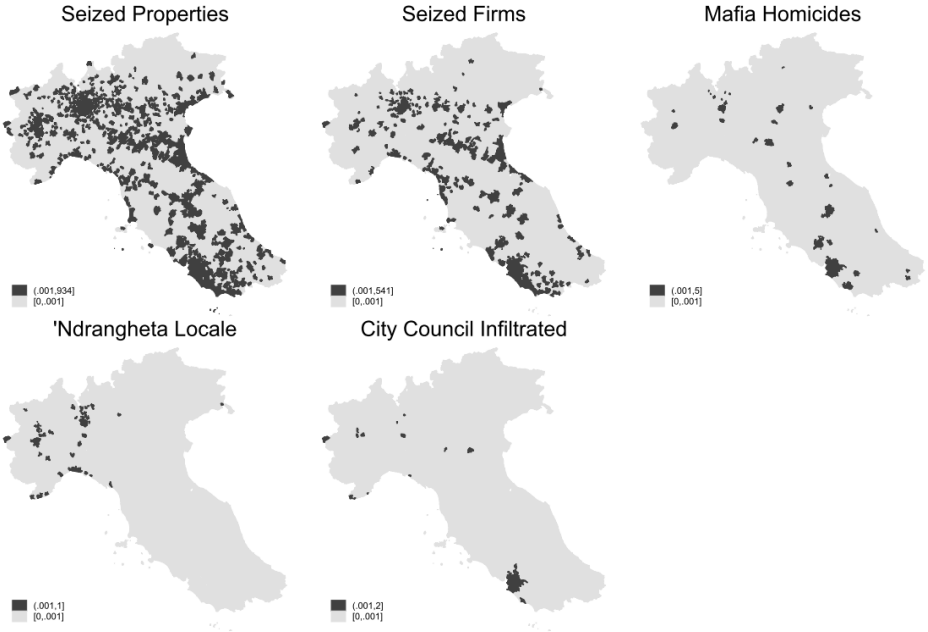
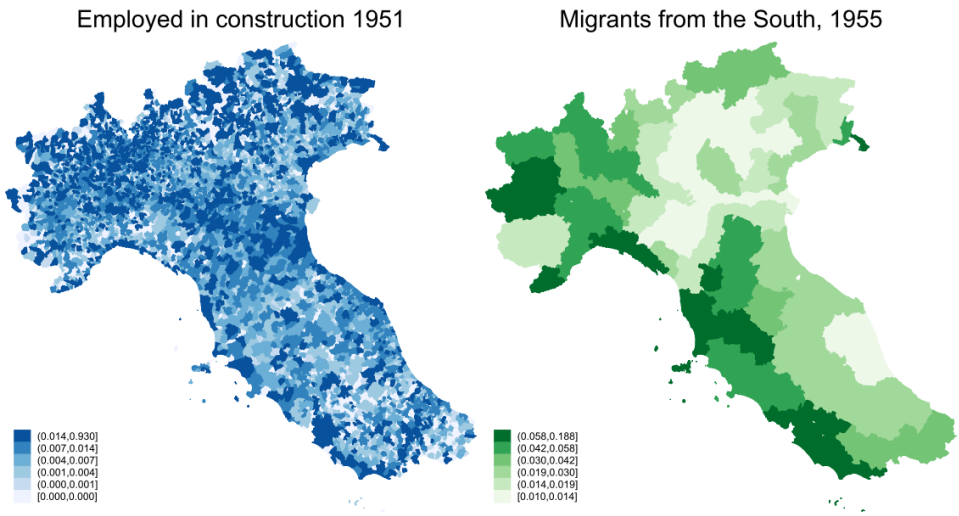


Figure 26: Official mafia indicators 1990-2018



Note: The legend indicates the maximum number of episodes in a given municipality. The source and time span of each indicator is discussed in Section 2.4.

Figure 27: Construction employees and migrants from the south (per capita), 1950s



Note: The map on the left plots the population shares of employees in the construction sector in 1951; on the right, the population share of migrants coming from southern provinces in 1955. More details on the data and their sources are included in Section 2.4.

Figure 28: Number of mafia-related news in 1960-69

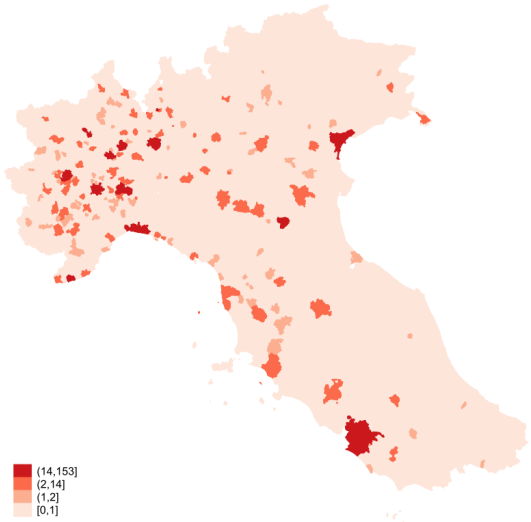


Figure 29: Official indicators of mafia presence in 1980-1990

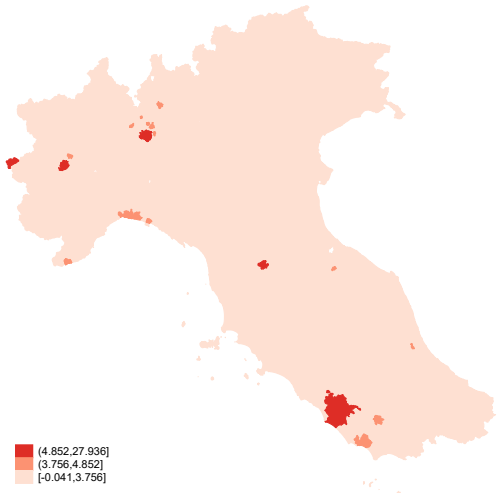
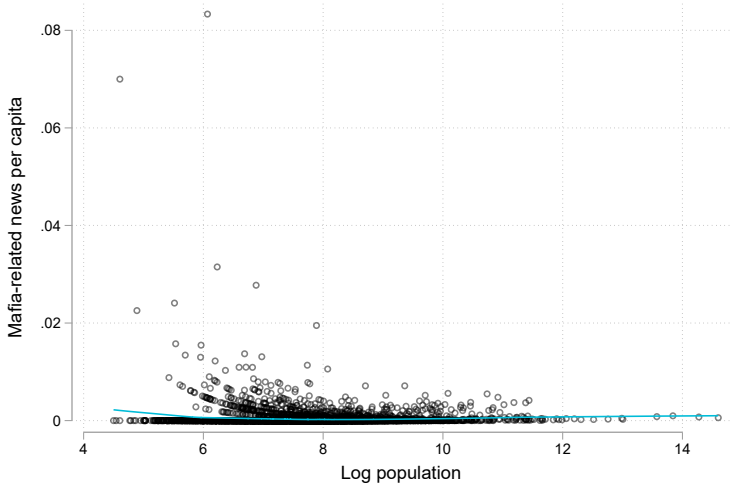


Figure 30: Relation between population and mafia-related news per capita



Note: Mafia-related news per capita in all cities 1961-1981 against the log of population in 1961. The loess curve describing the relation between the two variables is in blue.

A.3. Interaction Effects, Diagnostic tests

To assess the validity of the linearity assumptions underlying the use of a linear model (Equation 2.1), I consider a linear interaction diagnostic plot (Hainmueller et al., 2019). This is a scatterplot of the independent variable on mafia-related news (both residualized to account for city and decade fixed effects) in which a regression line assuming linearity is super imposed on a non-linear loess curve. I perform this test using as independent variable residualized construction employment (Figure 32) and the interaction of construction employment and migration, both residualized (Figure 33). In all cases, I present results also using binned data for visibility purposes. The same plot for construction is then reproduced by values of southern migration (low, medium, high) in Figure 35 and 36. The linear regression line (in red, long dashes) and the non-linear curve (in blue, short dashes) do not seem to considerably diverge across values of both construction and construction interacted with migration, suggesting that linearity might be a good approximation. Looking at Figure 35 and Figure 36, we observe how for higher levels of migration, the relation between construction and mafia becomes more positive.

Figure 31: Linear Interaction Diagnostic Plot

Figure 32: Construction Employment and Mafia (scatterplot and binned)

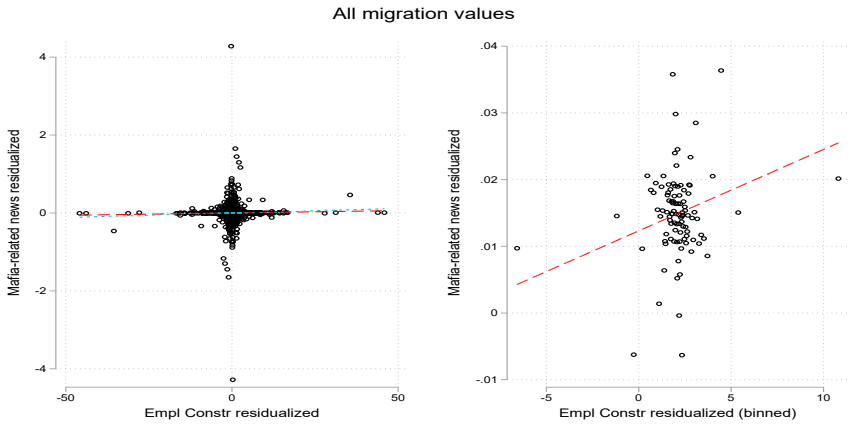
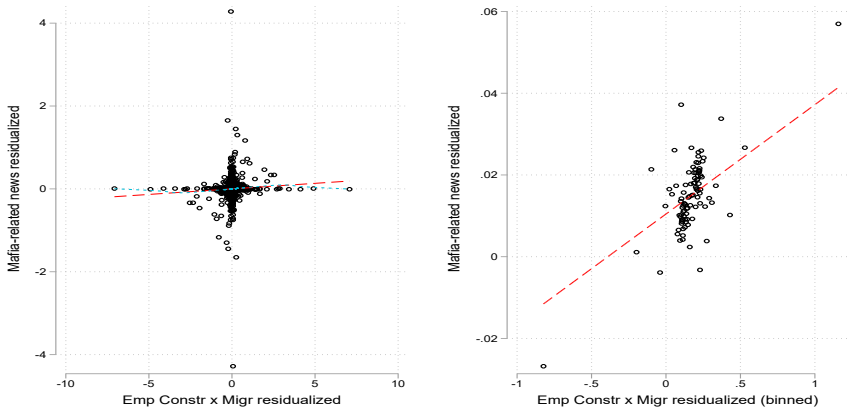


Figure 33: Construction X Migration and Mafia (scatterplot and binned)



Note: The scatterplot in panel (a) represent the relation between construction employment and mafia-related news per capita, both residulized to account for city and decade fixed effects. A linear regression line is plotted in red and long dashes while a loess line is plotted in green with short dashes. The same exercise is repeated in the panel on the right binning the data into 100 bins of equal size for visibility purposes. In panel (b), the same plot is realized for the relation between the interaction Construction x Migration and mafia-related news, both residualized.

Figure 34: Linear Interaction Diagnostic Plot, by levels of Migration

Figure 35: Construction Employment and Mafia, by values of migration (scatterplot)

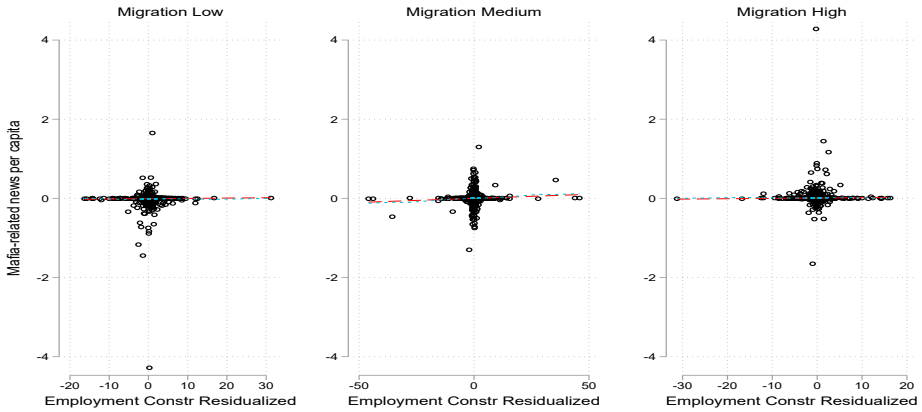
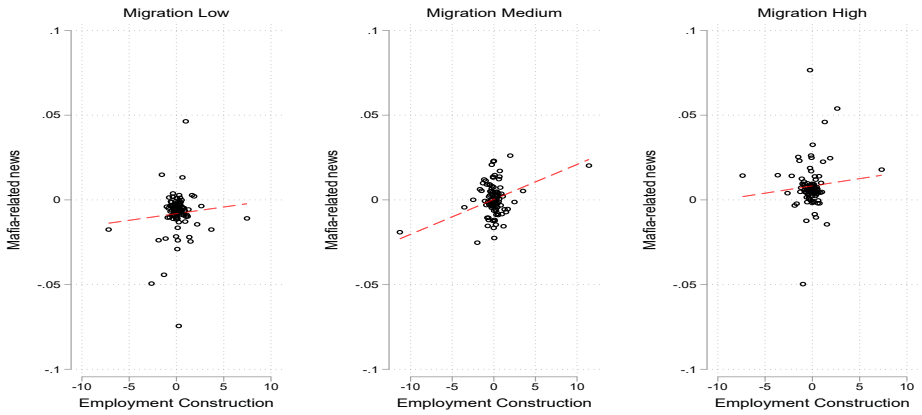


Figure 36: Construction Employment and Mafia, by values of migration (binned)



Note: The scatterplots in panel (a) represent the relation between construction employment and mafia-related news per capita, both residulized to account for city and decade fixed effects, by values of southern migration. A linear regression line is plotted in red and long dashes while a loess line is plotted in green with short dashes. The same exercise is repeated in panel (b) binning the data into 100 bins of equal size for visibility purposes.

A.4. The Instrument for Construction

A.4.1. The Law on Regulatory Plan

Law 2359/1865, Capo VI established that cities with more than 10,000 inhabitants could adopt a regulatory plan to manage the restoration of old buildings and design the future development of the city. The plan could be adopted with a simple resolution from the City Council after the approval of the Council for Public Works and it had a duration of 25 years. Due to the city-specific nature of this plan and to this being the times of the Kingdom of Italy, there is no full list of all cities that adopted it. The most complete source is a database put together by the University of Milan cross-referencing information from three different archives.[1] It is, however, not exhaustive as each city adopted the act individually and not all municipalities saved the acts from 1865 onwards. Of the 197 cities above threshold, 49 are listed in the database as having adopted a regulatory plan before 1942, but many others could have adopted it and be missing in the database. Reassuringly, no city below 10,000 inhabitants is reported as having adopted a regulatory plan. Although cities which surely adopted the plan (25%) tend to be larger on average (big cities have better historical administrative records), the distribution of construction employment per capita looks fairly similar to that of cities for which we do not know whether the plan was actually adopted. Since the latter constitute 75% of the sample, we also observe larger variation in the range of construction employee per capita in this subsample. Construction employment is lower on average and also in the median in cities with no regulatory plan assignment (Table 17).

Law 2359/1865 stayed in place from 1865 to 1942, when a new construction law was approved removing the threshold of application of the regulatory plan and changing its characteristics. In 1942 Italy was in the middle of WWII and not much construction development took place until the end of the war, in April 1945. Between 1945 and 1950, most of the construction activity taking place in Italy was aimed at the post-war reconstruction and once this was completed, in the 1950s, the country entered in an economic boom. I hypothesize that, after the removal of the law, cities which had been subject to a more regulated

[1] Rete Archivi Piani Urbanistici, http://www.rapu.it/

urban development and which had therefore better and more homogeneously spread infrastructures in place to build new neighborhoods, experienced a larger growth in construction from the 1950s.

Table 17: Distribution of construction 1961-71 in cities with and without regulatory plan assignment

	N	mean	sd	min	p1	p10	p25	p50	p75	p90	p99	max
No regulatory plan	11531	2.086	2.954	0.000	0.000	0.093	0.751	1.564	2.587	3.985	12.099	98.363
Reg plan, uncertain	294	2.094	1.019	0.262	0.352	1.068	1.513	2.016	2.561	3.101	5.167	11.365
Reg plan, certain	100	2.565	0.827	1.057	1.185	1.667	2.030	2.425	2.939	3.725	5.163	5.387

Note: The table shows the distribution of construction employment per capita in several percentiles of the distribution for cities with absent, uncertain and certain adoption of the regulatory plan law.

A.4.2. Effect of the threshold on construction employment (RDD)

I test the hypothesis that at the start of the economic boom in the late 1950s, cities which developed according to a regulatory plan were in a better position to expand further thanks to having more homogeneously spread infrastructures already in place using a regression discontinuity design in which population in 1871 (the first census after the approval of the law) is the running variable. In particular:

$$Y_{it} = \zeta_0 + \eta C_i + \theta(Pop1871 - 10,000)_i + \kappa C(Pop1871 - 10,000)_i + \lambda_i \tag{A.1}$$

where Y_i is construction employment growth and C is the cutoff at which the law applies (10,000 inhabitants). Growth in construction employment for t=[1961,1971] is calculated as the change in the number of construction employees from time zero (1951, pre-boom) to time t . Standard errors clustered at the city level are included in all specifications.

Having developed according to the regulatory plan causes an increase in construction employment growth at the threshold equal to 99 employees (Figure 4 and Table 18, Col 1), doubling the mean number of construction employee in a city. A similar effect can be seen on the growth of construction employees over total employees (Col 2). This effect is only present during the years of the boom and not before, as shown by the null effect on

construction in 1951, before the boom started (Figure 38 and Table 18, Column 3). This suggests that the plan produced no anticipation effects and that it is the start of the construction boom that triggered a difference in construction employment across cities which had and had not adopted a regulatory plan. Additionally, the advantage in construction growth gained by these cities is temporary and disappears in 1981 (Figure 38 and Table 18, Column 4). This is consistent with the effect we would expect from the regulatory plan: in the beginning, after removal of the law, cities which developed according to the plan have a slight advantage because of better spread infrastructures. Two decades after the start of the boom, this advantage disappears and cities which had been exposed to regulated development in the nineteenth century look the same as those that did not.

The effect of the regulatory plan law is absent if we consider as placebo any other population thresholds at which the law does not apply (Table 19 and Figure 40). There is no sorting of cities at the cutoff (Figure 39) and, to the best of my knowledge, no other discontinuous change happened at the 10,000 inhabitant threshold at the time in which the law was passed.

Table 18: Effect of the regulatory plan on growth in construction employment

	(1) Δ Constr Emp 1961, 1971	(2) Δ Share Constr Emp, 1961, 1971	(3) Δ Constr Emp 1951 (before)	(4) Constr Emp 1981 (after)
RD_Estimate	99.58	0.0288	-7.004	57.84
	(45.42)	(0.0145)	(48.20)	(60.04)
Observations	1434	658	387	878
Robust p-value	0.0231	0.0589	0.804	0.283
Polyn. order	1	1	1	1
Bandwidth	5551	3713	4050	5958
Outcome mean	100	0.0483	118.7	164.6

Note: Results from RDD specified in Equation A.1, capturing the effect of the regulatory plan in place between 1865 and 1942 (for cities above 10,000 inhabitants) on growth in construction employment. In Column 1 the dependent variable is the absolute change in number of employed in construction in 1961 and 1971, while in Columns 2, I consider the change as a share of total employment. In Column 3 I perform a test on the levels of construction before the start of the boom, in 1951, showing no anticipation effect. In Column 4 I consider growth in construction employment in 1981, after the boom. Robust bias-corrected standard errors as developed in Calonico, Cattaneo and Titiunik (2014) are reported in parentheses.

Figure 37: Effect of the regulatory plan on growth in construction employment 1961-71

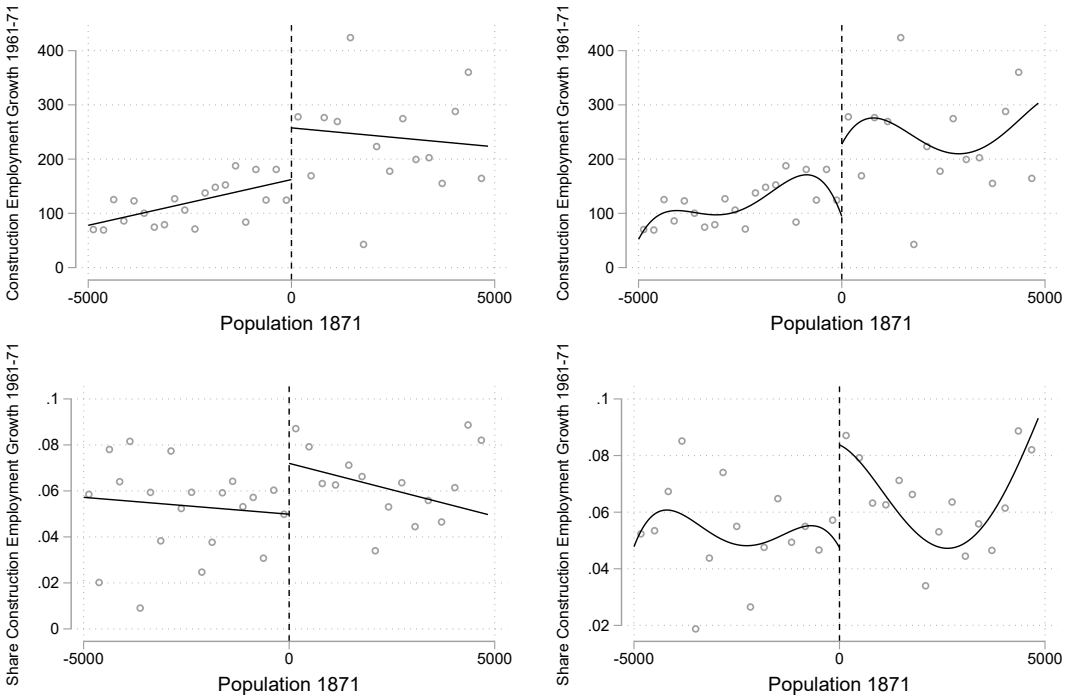
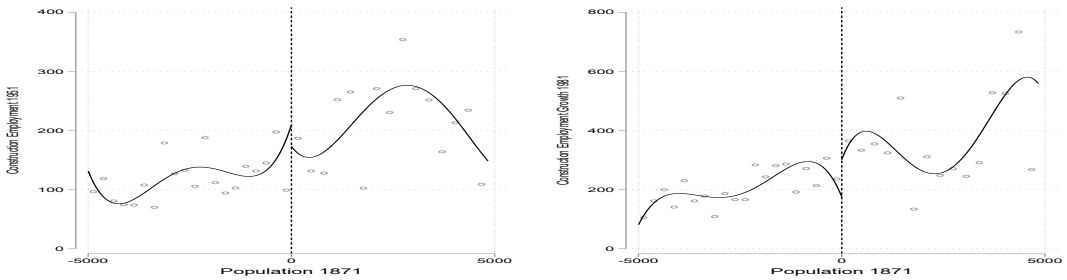


Figure 38: Effect of the regulatory plan on construction employment 1951 (before the boom) and 1981 (after)



Note: Panel (a) plots the regression discontinuity specified in Equation A.1, capturing the effect of the removal of a regulatory plan in place between 1865 and 1942 (for cities above 10,000 inhabitants) on growth in construction employment in 1961 and 1971. In the top panel the dependent variable is the change in number of employed in construction, while in the bottom panel, I consider the change as a share of total employment. The panels on the left consider a first order polynomial, the panels on the right a flexible polynomial. In Panel (b), I plot the results of the same estimation on construction in 1951 (before the boom in construction) and after, in 1981. Corresponding results are reported in Table 18.

Table 19: Placebo at other cutoffs

	(1) 1000 inhab	(2) 2000 inhab	(3) 3000 inhab	(4) 4000 inhab	(5) 5000 inhab	(6) 6000 inhab	(7) 7000 inhab	(8) 8000 inhab	(9) 9000 inhab	(10) 10000 inhab	(11) 11000 inhab	(12) 12000 inhab	(13) 13000 inhab	(14) 14000 inhab	(15) 15000 inhab	(16) 16000 inhab	(17) 17000 inhab
RD_Estimate	-14.54	-14.54	-11.13	-13.31	-5.140	0.279	17.66	34.84	6.403	99.58	33.13	-100.2	1.054	159.7	-7.036	-62.55	77.96
	(11.94)	(11.94)	(9.617)	(11.84)	(18.70)	(22.59)	(33.10)	(35.12)	(47.19)	(45.42)	(95.81)	(82.10)	(84.28)	(94.19)	(76.12)	(131.0)	(106.8)
Observations	2508	2508	2946	2568	2426	1226	972	830	630	1434	522	686	170	118	260	176	500
Robust p-value	0.218	0.218	0.224	0.296	0.709	0.874	0.537	0.323	0.975	0.0231	0.736	0.269	0.879	0.0904	0.875	0.633	0.477
Polyn. order	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Bandwidth	443.3	443.3	875.3	1293	1948	1825	2214	2629	2867	5551	3932	5454	2709	2227	5109	4137	8979
Outcome mean	0.0597	0.0597	0.0519	0.0522	0.0532	0.0517	0.0549	0.0501	0.0534	0.0571	0.0514	0.0561	0.0498	0.0549	0.0559	0.0539	0.0532

Note: The table shows results from estimation of Equation A.1 capturing the effect of the adoption of a regulatory plan on growth in construction employment at other population cutoff than the one at which the law applies (10,000 inhabitants, the only significant coefficient). The cutoff 14,000 inhabitants is the last at which it is possible compute the local polynomial bandwidth above the cutoff.

A particularly important condition for this law to be exploited as an instrument for construction is showing that the discontinuity impacted construction employment growth in the future, but not other outcomes which might have been affected by the adoption of a regulatory plan and also have an effect on mafia presence. For example, one could be concerned that regulating the development of the city might have resulted into different population growth patterns and that this change, rather than the effect on construction, is what drives the effect on mafia presence. In other words, it needs to be shown that the exclusion restriction is not violated. I test the effect of the threshold on all the 20 variables present in the census, including population and houses characteristics and employment information (Table 20 and Table 21). The threshold had no lasting effect on any of these covariates, including population size and density, housing indicators - such as number of private houses and presence of basic services in the houses - and it also had no effect on education, employment and sectoral employment. Additionally, it can be shown that the threshold also had no effect on covariates in 1951 (Table 22 and Table 23). The only census indicator that is different across the threshold is the size of families in 1951 - likely a random difference, given the number of indicators we are testing, and given that significance disappears in the following decades.

As a final test of the validity of the regulatory plan as an instrument for construction, I show that this threshold has no effect on migration from the south nor on migration in general (Figure 41; Table 24). While producing a discontinuous increase in construction employment, this law did not determine such a large increase in construction that it attracted a disproportional higher number of migrants in cities right above the cutoff. As a result, what we are capturing considering this threshold is only the increase in construction employment, and not a consequential increase in migration, population, economic activity nor any other measurable covariate in this time period.

Table 20: Effect of threshold on covariates 1961-1981 (population and education)

	(1) Population	(2) Family size	(3) Pop density	(4) Gender educ differ	(5) Analpha-abetism	(6) Large families	(7) Educated young	(8) With degree	(9) Elderly Depend	(10) Young Depend
RD_Estimate	3,994	0.142	119.7	1.240	1.394	0.751	0.140	0.443	-0.877	1.641
	(2,871)	(0.0988)	(117.9)	(3.989)	(0.951)	(0.893)	(0.779)	(0.714)	(1.155)	(1.430)
Observations	1437	702	927	1536	705	500	644	1518	1485	798
Robust p-value	0.213	0.148	0.393	0.973	0.194	0.412	0.962	0.629	0.541	0.232
Polyn. order	1	1	1	1	1	1	1	1	1	1
Bandwidth	4596	2912	3489	4821	2924	3084	3604	4794	4726	3193
Outcome mean	11014	3.311	289.7	134.9	4.130	6.831	4.846	6.794	21.55	29.16

Note: The Table shows results from estimation of Equation A.1 estimating the effect of the adoption of a regulatory plan at the 10,000 inhabitants population cutoff. In this case, dependent variables are covariates from the Census on which no effect is expected.

Table 21: Effect of threshold on covariates 1961-81 (employment and housing)

	(1) Emp Agric	(2) Emp Industr	(3) Emp Services	(4) Emp Commerce	(5) Female 2 Emp	(6) Property houses	(7) Pop in poverty	(8) Crowded houses	(9) Improper houses	(10) House w services
RD_Estimate	-0.531	0.899	-0.258	0.306	3.923	0.379	1.187	0.940	0.317	-0.159
	(1.170)	(2.159)	(3.301)	(3.196)	(3.444)	(3.498)	(0.864)	(0.614)	(0.508)	(3.430)
Observations	879	1074	1922	1209	726	702	624	522	1678	873
Robust p-value	0.655	0.635	0.856	0.918	0.189	0.700	0.235	0.175	0.475	0.855
Polyn. order	1	1	1	1	1	1	1	1	1	1
Bandwidth	3374	3908	5312	4134	2983	2891	3522	3171	5870	3362
Outcome mean	12603	19.06	24.78	45.29	27.48	56.54	6.220	3.492	0.236	67.02

Note: The Table shows results from estimation of Equation A.1 estimating the effect of the adoption of a regulatory plan at the 10,000 inhabitants population cutoff. In this case, dependent variables are covariates from the Census on which no effect is expected.

Table 22: Effect of threshold on covariates 1951 (population and education)

	(1) Population	(2) Family size	(3) Pop density	(4) Gender educ differ	(5) Analpha-betism	(6) With degree	(7) Elderly Depend	(8) Young Depend
RD_Estimate	1,219	0.656	41.61	9.325	2.752	-0.190	-0.297	1.377
	(1,415)	(0.250)	(78.50)	(9.487)	(1.988)	(0.406)	(0.567)	(1.808)
Observations	410	188	327	352	258	717	655	354
Robust p-value	0.521	0.00799	0.748	0.414	0.197	0.552	0.752	0.381
Polyn. order	1	1	1	1	1	1	1	1
Bandwidth	4219	2488	3680	3878	3165	5545	5375	3897
Outcome mean	10776	4.239	250.2	158.5	9.385	2.551	12.88	30.23

Note: The Table shows results from estimation of Equation A.1 estimating the effect of the adoption of a regulatory plan at the 10,000 inhabitants population cutoff. In this case, dependent variables are covariates from the Census on which no effect is expected. Some of the variables in tables 1961-81 were absent in 1951.

Table 23: Effect of threshold on covariates 1951 (employment and housing)

	(1) Emp Agric	(2) Emp Industr	(3) Emp Services	(4) Emp Commerce	(5) Female Emp	(6) Property houses	(7) House w services
RD_Estimate	-0.191	-0.579	2.077	-1.210	1.360	-3.212	-0.838
	(1.437)	(1.894)	(5.496)	(4.322)	(2.255)	(3.837)	(3.804)
Observations	237	370	580	413	404	447	270
Robust p-value	0.924	0.844	0.799	0.833	0.380	0.699	0.643
Polyn. order	1	1	1	1	1	1	1
Bandwidth	2926	3987	5094	4257	4148	4418	3244
Outcome mean	12192	9.220	50.71	31.36	12.01	41.87	16.08

Note: The Table shows results from estimation of Equation A.1 estimating the effect of the adoption of a regulatory plan at the 10,000 inhabitants population cutoff. In this case, dependent variables are covariates from the Census on which no effect is expected. Some of the variables in tables 1961-81 were absent in 1951.

Table 24: Effect of threshold on migration in 1961-71

	(1) N migrants south 1961-71	(2) Share migrants south 1961-71	(3) Share migrants all regions 1961-71
RD_Estimate	682.9614	0.0026	0.0111
	(1,986.043)	(0.019)	(0.039)
Observations	1006	676	764
Robust p-value	0.756	0.992	0.839
Polyn. order	1	1	1
Bandwidth	4766	3814	4038
Outcome mean	4166	0.0718	0.284

Note: The Table shows results from estimation of Equation A.1 estimating the effect of the adoption of a regulatory plan at the 10,000 inhabitants population cutoff on migration from the south (absolute in Col 1, as population share in Col 2) and from all regions (Col 3).

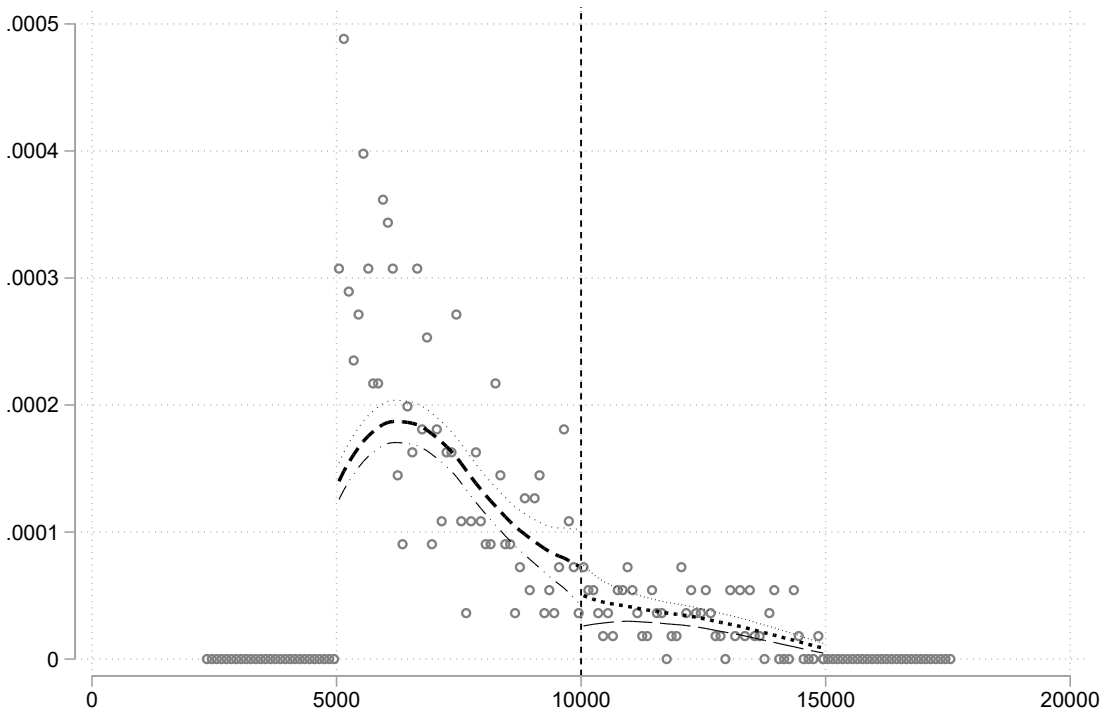


Figure 39: McCrary test, cutoff for the regulatory plan adoption at 10,000

Note: McCrary test of the density of the running variable (population 1871) at the cutoff of 10,000 inhabitants. A manipulation test using the local polynomial density estimators proposed in Cattaneo et al. (2018) shows that there is no statistical evidence of systematic manipulation of the running variable (T= 0.4588, P-value=0.6464).

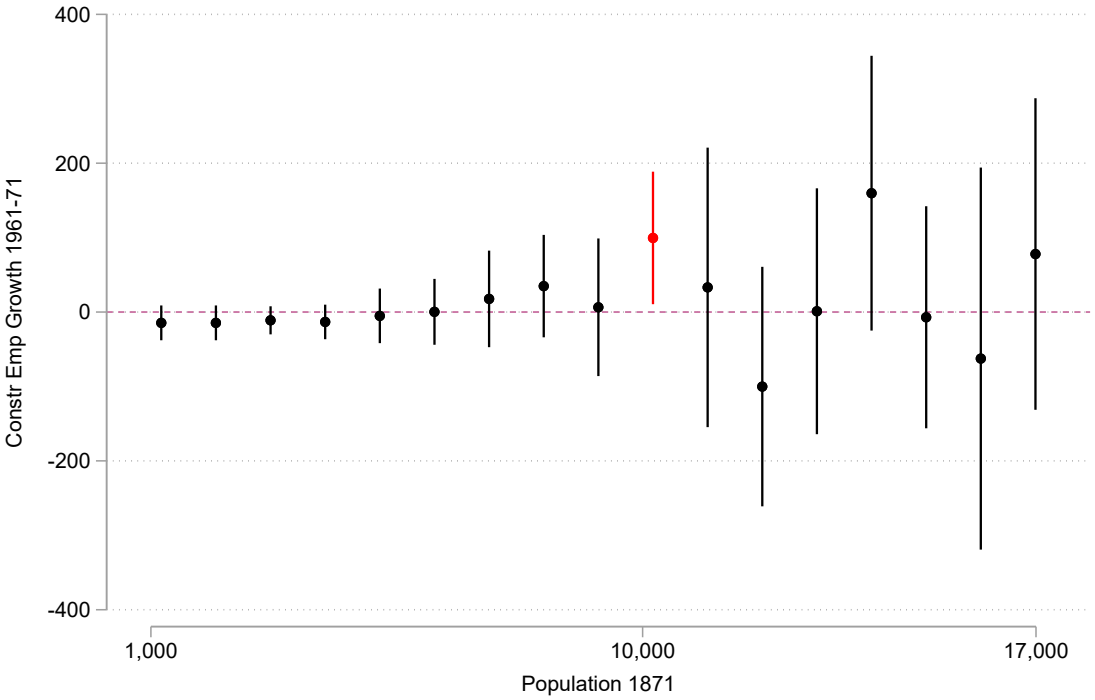


Figure 40: Placebo at other thresholds

Note: Results from estimation of Equation A.1 capturing the effect of the adoption of a regulatory plan on growth in construction employment at other population cutoff than the one at which the law applies (10,000 inhabitants, in red). The cutoff at 14,000 inhabitants is significant at 10%, the others are all insignificant. The cutoff 17,000 inhabitants is the last at which it is possible compute the local polynomial bandwidth above the cutoff.

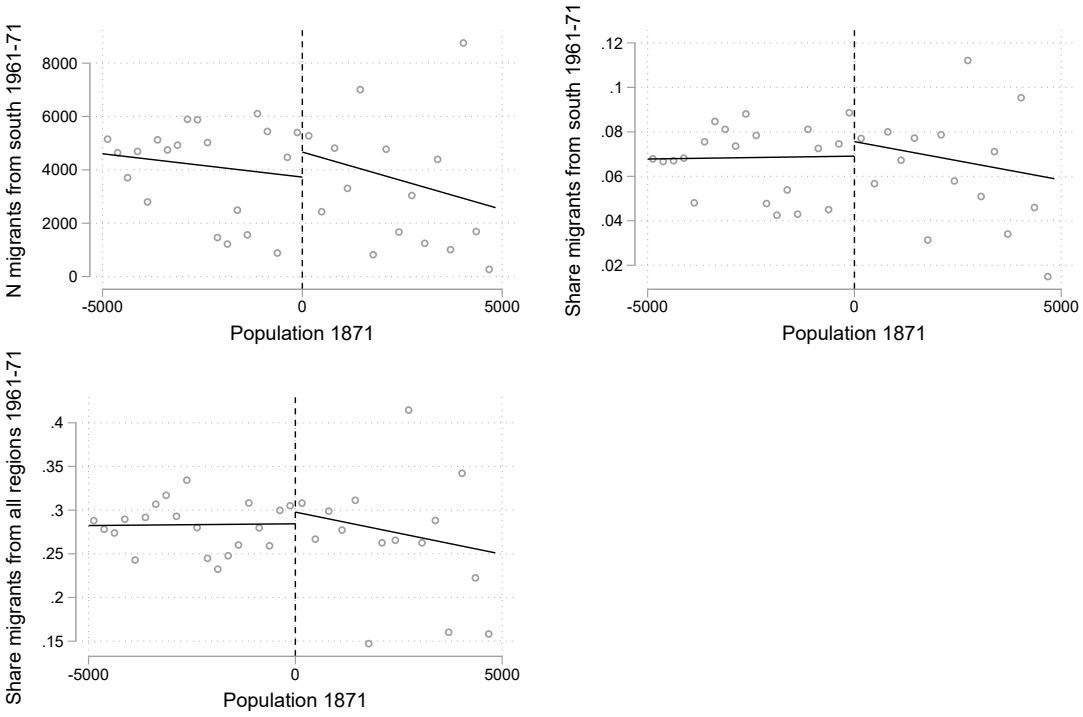


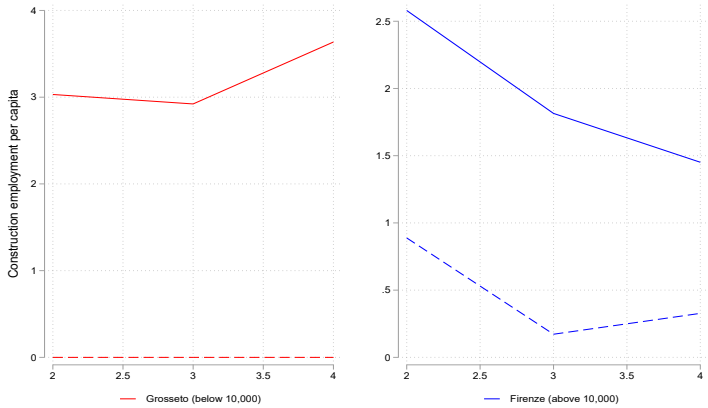
Figure 41: Effect of threshold on migration in 1961-71

Note: RDD estimates of Equation A.1 using as dependent variable the number of southern migrants (fig upper-left), the population share of migrants from the south (fig upper-right) and the population share of migrants from all region (fig in the bottom) in 1961-71. Corresponding results are reported in Table 24.

A.4.3. Graphical example of the instrument for construction

I provide a graphical example of the instrument for construction using the first city to adopt a regulatory plan according to the Law 2359/1865, Firenze, and another large city in the same region which at the time had only 5000 inhabitants, Grosseto (Figure 42). The instrument predicts employment in construction in Firenze simply by tracing the evolution of construction employment growth at the national level. In Firenze, employment per capita in each decade was slightly larger than the national level growth in employment, but the trend followed by the two quantities is similar. As Grosseto was below the 10,000 inhabitants discontinuity, instead, the instrument will return a zero predicted employment. The difference between cities assigned to adopt a regulatory plan or not is thus the only cross-sectional variation used in the instrument, while time variation is considered only at the national level. As explained in Section 2.5.1, I also control for the interaction between population in 1871 and growth in construction at the national level to further account for the possibility that (i) cities with larger population grow more and (ii) the effect of the regulatory plan on construction might be larger in bigger cities.

Figure 42: Graphical example of the instrument for construction



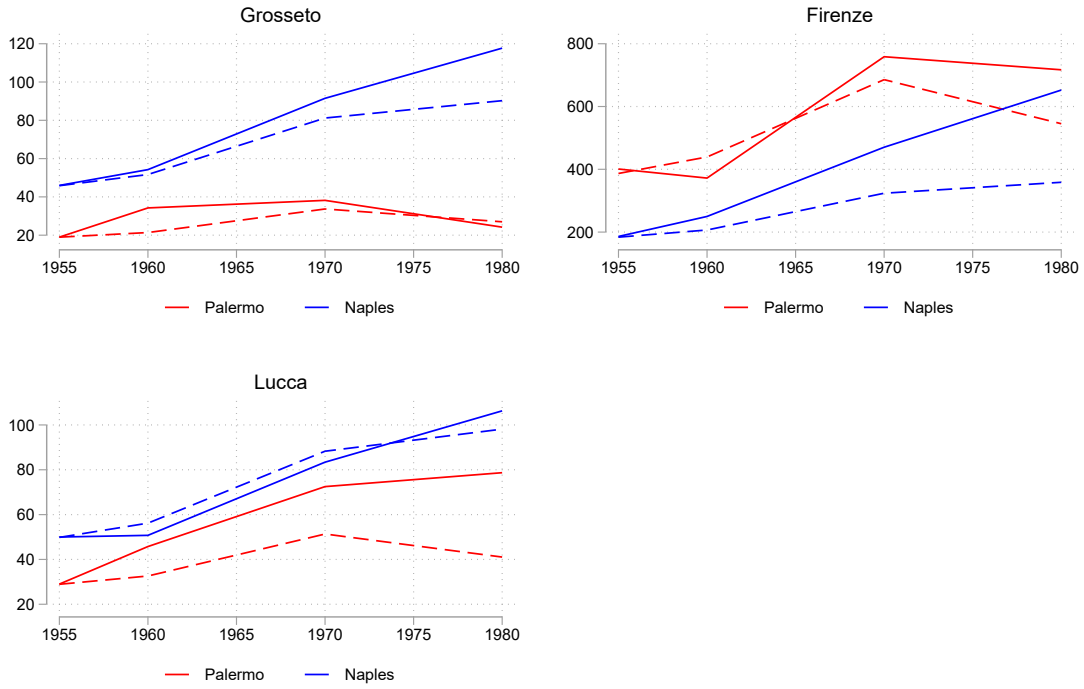
Note: The figure plots actual (solid line) and predicted (dashed line) construction employment per capita in a city below (Grosseto, on the left, in red) and above (Firenze, on the right, in blue) the discontinuity.

A.5. Graphical example of the instrument for migration

In this section, I provide a practical representation of how the shift-share instrument predicts migration using an example from two provinces of origin (Palermo and Naples) and three provinces receiving migration in Tuscany (Grosseto, Florence and Lucca).

While large numbers of migrants departed from all provinces in the south, migration from the Palermo province declined in the 1980s, when the oil crises reduced the economic development and the employment opportunities in the North. At the same time, Neapolitans' kept migrating at increasing rates. This pattern is reflected in the way values of migration and total immigration at destination are predicted. In Grosseto, for example, the initial number of migrants from both origins was similar, with a slightly larger cluster of Neapolitan settlers. However, in line with the national trends, the flows of Palermitans decreased in the 1980s while the Neapolitans kept moving to Grosseto at high rates. Total predicted migration in this province is thus the result of (i) the initial settlers from Naples and Palermo and (ii) the national shock in migration for both groups. In Florence, instead, the initial community of Palermitans was much larger and kept increasing at higher rates than that of Neapolitans. However, after the 1970s, migration from Palermo declined to

Figure 43: Graphical example of actual and predicted migration



Note: The figure reports the actual and predicted number of migrants from Palermo and Naples who moved to 3 Provinces in Tuscany (Grosseto, Firenze and Lucca) in the period of observation (1955-1980). Predicted values are obtained from the shift-share instrument discussed in Section 2.5.1.

the point that flows from Palermo and Naples converged to almost the same amount. Predicted migration in Florence in 1980 is thus the result of migrants from both origins in almost equal amounts. In Lucca, instead, the initial number of migrants from Palermo and Florence was very similar. Also in this case, in 1980 migration from Palermo hits a stop and, from following each other in parallel, estimates of migration diverge. As discussed in Section 2.5.1, the shift-share instrument exploits (i) cross-sectional variation in the initial shares of migrants living the center and north in 1955 (ii) time variation caused by changes in the number of migrants from each sending region at the national level in each subsequent year (1961-1971).

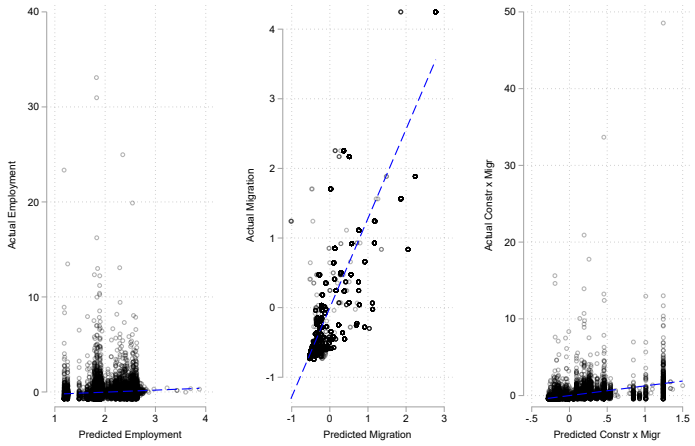
A.6. Instrumental Variable Identifying Assumptions

This section discusses the identifying assumptions underlying the validity of the instrumental variable approach that were not already examined in the text.

I start by plotting the relation between the instruments and the variables they predict in Figure 44 and 45. While the first Figure simply plots one variable against the other, the second plots the actual and fitted values for each instrument regression on the independent variable, showing a positive and monotonic effect of each instrument on the respective variable.

Section 2.5.1 and A.4.2 discuss in detail the exogeneity assumption for the construction instrument. For the migration instrument, I follow the recent literature on the Shift-Share Instrument (Jaeger et al., 2018) and rely on an exogenous source of variation in migration flows caused by drought severity shocks in the south. In Figure 46 and Table 25, I document a positive correlation between drought severity in the south of Italy and outmigration to different provinces. This relation is used as an exogenous shock to predict migration flows in the instrument for migration. Table 26, shows first stage results for all instruments when using exogenous shocks produced by drought severity as predictors for migration. Finally, Table 27 presents results from the procedure suggested by Borusyak et al. (2019) to demonstrate the equivalence between shift-share and shock-level coefficients, so that conventional standard errors of the IV can be considered as valid. Both considering decade only (Column 1 and 2) and decade-province fixed effects (Column 3 and 4), the estimated coefficient across standard and shock-level shift share is unchanged.

Figure 44: First Stage: actual and predicted values



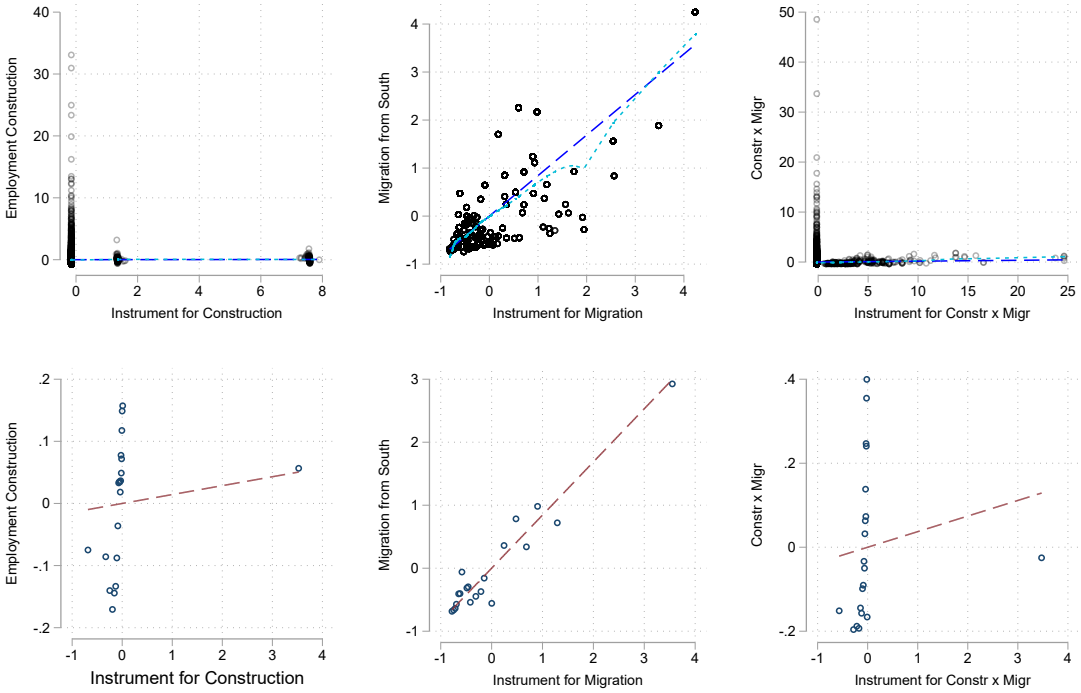
Note: Actual (y-axis) and predicted (x-axis) values of construction employment per capita, southern migration per capita and their interaction. Each point is obtained from regressing the instrument on the correspondent actual value after partialling out decade and city fixed effects and clustering standard errors at the city level. The dotted line shows the regression coefficients from a linear regression of each DV on the predicted values, as in Table 2.

Table 25: Effect of drought severity on number of migrants

	(1)	(2)
	N Migr	N Migr
	1961	1971
Drought Severity	6,276	10,078
	(233.5)	(383.6)
Constant	4,116	6,300
	(135.5)	(160.9)
Observations	2,726	2,726
R-squared	0.219	0.160

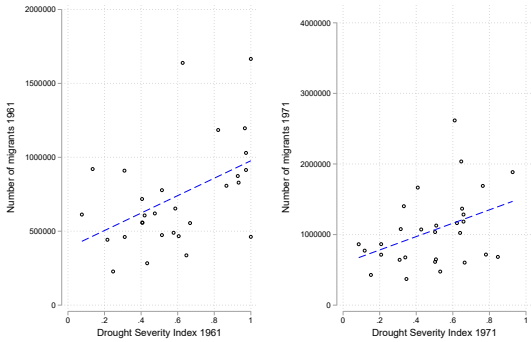
Note: Correlation between drought severity (Van der Schrier et al., 2006) and the number of migrants in years 1961 and 1971, OLS estimates.

Figure 45: Relation between regressors and their instruments



Note: Regressors (y-axis) and their respective instruments (x-axis) as scatterplots (panel above) and binning data (panel below). In the scatterplot, the linear regression line in blue is overlapped to a loess curve. In the binned plot, the dashed line represents the linear regression line. In the binned plot, I control for population in 1871 interacted with construction growth at the national level (as in the analyses).

Figure 46: Drought Severity Index and number of migrants, 1961-1971



Note: Correlation between the index of drought severity in the south of Italy in 1961 (left) and 1971 (right) (Van der Schrier et al., 2006) and number of migrants from those provinces in the same years.

Table 26: First Stage, Drought as push factor for migration

	(1) Emp Constr per capita	(2) Migr South per capita	(3) Emp Constr x Migr South
Z Constr Emp	0.021	0.020	0.009
	(0.007)	(0.009)	(0.005)
Z for Migr Drought	-0.097	0.712	0.299
	(0.021)	(0.015)	(0.037)
Z Constr x Migr Drought	-0.008	0.010	0.046
	(0.017)	(0.038)	(0.016)
Observations	11,926	11,926	11,926
Number of cities	5,963	5,963	5,963
City, Decade FE	Yes	Yes	Yes
SW F-Stat	17.38	11.96	7.820
A-R Wald test	22	22	22
Mean DV	0	0	0

Note: First stage of the instrumental variable approach described in Section 2.5.1 using an alternative instrument for migration, predicting the flows of migrants using as exogenous push factor drought severity in Southern Italy.

Table 27: Standard and shock-level shift-share estimates

	(1) Standard	(2) Shock-level	(3) Standard	(4) Shock-level
Mig South	8.051	8.051	4.704	4.704
	(115.7)	(241.1)	(17.51)	(39.65)
Observations	198	81	198	81
Decade FE	Yes	Yes	Yes	Yes
City FE	No	No	Yes	Yes
Sum of shares x Decade	Yes	No	Yes	No

Note: Estimates of the effect of migration on news per capita using the standard and the shock-level version of the shift-share instrument, with decade only (Col 1,2) and decade-province fixed effects (Col 3,4).

A.7. Main Results, Robustness

I start the robustness tests by considering alternative definitions of mafia presence that account for the possibility that we only observe mafias where those are weakest and less able to conceal their presence. I exploit indicators of mafia-presence existing from 1990 onwards which (i) have different sources of reporting (local, national, different institutions, NGOs), reducing the probability that we only observe mafias where they are incapable to corrupt the institutions, and (ii) capture several dimensions of mafias' activity, from violence to infiltration into the economy.[2] I obtain a closer mapping between mafia-related news and official indicators of mafia presence by considering only those types of news which a lasso procedure and a random forest algorithm select as best predictors of official mafia presence. Results are robust using both methods and presented in the first two columns of Table 28, SI. A related concern is that in places with more construction and southern migration, there might be just more talking about the possibility that mafias will expand thanks to their activity of labor racketeering. This is not what was happening: as mentioned, institutions acknowledged mafia expansion much later, starting from the mid 1990s. In fact, if I drop from the sample all news related to labor racketeering, all news including the word mafia or 'Ndrangheta and I only consider news of typical mafia-related crimes (extortion, kidnapping, drug trafficking, vote buying), results are still positive and significant. I then account for the possibility that the absence of news related to mafia in a specific decade is due not to absence of mafias, but rather to mafias' capacity to hide their presence after being detected. I replace all zero values following a positive with the positive value recorded in the previous time period, thus assuming that mafia is present but unobserved. If this assumption is imposed, the effect on mafia presence is very similar in size and significance as the main result. Another possible worry is that more news could be reported in the region of Piedmont just because this is where the newspaper is located. However, a placebo test shows that using news at $t-1$ as dependent variable, the effect on mafia is negative, small and close to

[2] As described in the data section, those indicators are the city-level number of goods, properties and firms seized to mafias, the number of city-councils dissolved due to mafia infiltration, the number of mafia-related homicides and an indicator for whether the judiciary assessed the presence of a permenent 'Ndrangheta cell ('locale') in a city.

insignificant. Results are also similar when winsorizing the dependent variable to account for the possibility that outliers determine the findings and when adopting a logarithmic transformations to account for the skew of the dependent variable towards zero. All results discussed in this section are presented in Table 28, SI.

In Table 29, SI, I test the robustness of results to variations in the instruments and in the specification. First, I show robustness to using an instrument that predicts migration flows using the severity of drought in the south of Italy. In Col 2, I restrict the sample to the optimal bandwidth selected by the RDD for construction. I then modify the instrument for construction to only interact the dummy for being above 10,000 inhabitants to national level growth, without subtracting the contribution of the city. I repeat the same procedure on the instrument for migration and consider a specification in which all instruments include the contribution of city i or province p to national growth. I test the robustness of the findings to clustering standard errors at the provincial level, which is the level of aggregation of the migration variable. I also show robustness to normalizing migration for the endogenous current population, rather than for population at time zero, before the migration boom. Finally, I consider a specification in which the regions of Abruzzo and Molise, which are considered as part of southern Italy according to some definitions, are included as southern regions. Results are very similar, suggesting that cities in these regions do not drive the results on mafia presence.

Table 28: Robustness using different definitions of mafia presence

	(1) News selected by lasso	(2) News selected by random forest	(3) News mafia-crimes only	(4) Assuming continuous presence	(5) Mafia news t-1	(6) News winsor-ized	(7) Log Mafia news
Emp Constr pc	-0.053	-0.159	-0.106	-0.161	-0.010	-0.148	-0.129
	(0.016)	(0.049)	(0.034)	(0.051)	(0.008)	(0.046)	(0.040)
Migr South pc	-0.011	-0.029	-0.018	-0.031	0.008	-0.025	-0.020
	(0.005)	(0.015)	(0.011)	(0.017)	(0.004)	(0.014)	(0.013)
Emp Constr x Migr South	0.034	0.083	0.049	0.099	-0.017	0.071	0.053
	(0.011)	(0.035)	(0.025)	(0.041)	(0.009)	(0.031)	(0.026)
Observations	11,926	11,926	11,926	11,926	11,926	11,926	11,926
Number of cities	5,963	5,963	5,963	5,963	5,963	5,963	5,963
City, Decade FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mean DV	0.005	0.014	0.009	0.018	0.002	0.014	0.011

Note: Results from the estimation of Equation 2.1 using alternative definitions of mafia presence. I use a lasso (Col 1) and a random forest (Col 2) algorithm to select only news that predict official indicators of mafia presence from later on. In Col 3, I exclude news of labor-racketeering and news mentioning the word mafia or 'Ndrangheta. I assume mafia presence to be present even if it was not observed at t when it was at t-1 in Col 4. Col 5 presents a placebo test in which the DV is news per capita at t-1. News per capita are winsorized to exclude potential outliers (top 0.1 percent) in Col 6 and transformed to logarithmic (Col 7) to account for the skewness of the DV towards zero. City and decade fixed effects are included in all estimates, together with a control for the interaction of population in 1871 (determining the assignment of the regulatory plan) and growth in construction employment. Standard errors are clustered at the city level.

Table 29: Robustness using variations in the instruments and specification

	(1) Using Drought as push for Migr	(2) RDD bandwidth	(3) IV Constr w/o leave out	(4) IV Constr & Migr w/o leave out	(5) Cluster prov level	(6) Endogenous population	(7) Consider Abruzzo Molise as south
Emp Constr pc	-0.173***	-0.157	-0.168***	-0.170***	-0.169***	-0.180***	-0.169***
	(0.058)	(0.104)	(0.052)	(0.057)	(0.057)	(0.053)	(0.052)
Migr South pc	-0.034	-0.064	-0.032*	-0.027	-0.032**	-0.029*	-0.027
	(0.026)	(0.054)	(0.017)	(0.021)	(0.014)	(0.016)	(0.018)
Emp Constr x Migr South	0.104*	0.272	0.097**	0.092	0.098***	0.102**	0.091**
	(0.060)	(0.189)	(0.041)	(0.057)	(0.033)	(0.041)	(0.045)
Observations	11,926	586	11,926	11,926	11,926	11,926	11,044
Number of cities	5,963	293	5,963	5,963	5,963	5,963	5,522
City Decade FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SW F-Stat	7.820	30.82	83.21	58.25	461.63	107.24	107.24
A-R Wald test	22	21.6	27.7	22.6	12.2	28.1	28.1

Note: The Table shows the results from robustness tests on the main estimation using alternative specifications. Col 1 includes a variant of the shift-share instrument for migration predicting migration flows exogenously using droughts severity in the south as a push factor. In Col 2, I restrict the sample to the optimal bandwidth selected by the RDD for construction. Col 3 does not subtract contribution of construction employment in city i from the national growth rates (no leave-out instrument). Similarly, in Col 4 I repeat the same test using a no leave-out instrument both for construction and for migration. In Col 5, I cluster standard errors at the province level (the level at which migration is observed) while in Col 6, I replace the exogenous population in 1951 with current (endogenous) population as denominator for the migration instrument. Finally, Column 7 considers two regions (Abruzzo and Molise) as part of the south rather than the center and north. Mafia presence is defined as the population share of news related to mafia in a city-decade at $t + 1$ (1971-1981). City and decade fixed effects are included in all estimates, together with a control for the interaction of population in 1871 (determining the assignment of the regulatory plan) and growth in construction employment. Standard errors are clustered at the city level in all columns except 4.

A.8. Characterizing the results

What type of competition? The demand for cheap unskilled labor in the construction sector could have emerged as a result of two types of competition: (1) competition to hire employees (market tightness) and (2) competition between incumbent and entrant companies in the construction sector. The service mafias offered would have been needed in either case, as a direct help in employing workers at low cost in the first case, as a resource to gain a competitive edge over entrants in the second.

While my theory of mafia expansion is compatible with both types of competition, it is an empirical question which of the two channels prevailed in the context of center and northern Italy. I repeat the main analysis replacing employment in construction per capita with the number of firms in the construction sector per capita. An increase in the population share of construction companies in a city might mean that incumbent companies are facing a larger number of entrants, if the number of projects stays constant.[3] The same Bartik-type instrumental variable approach used for employment is adopted for the number of firms. While the Anderson Rubin test for joint weakness of the instruments rejects irrelevance, the individual SW F-statistic is rather low (SW F=7.4).

Table 30, compares results from the main analysis on employment (Column 1) to those obtained using the number of firms as independent variable (Column 2). The coefficient capturing the effect of construction and migration when we consider an increase in firms per capita is negative and insignificant. This finding suggests that, in this context, competition for hiring unskilled workers created a demand for cheap unskilled labor and allowed mafia expansion, rather than competition against new entrants. Results are in line with qualitative evidence suggesting that the primary difficulty for construction companies was finding employees to hire at low cost and whenever they needed, rather than beating competitors.

Intentionality of mafias' move: As mentioned in the theory section, this chapter studies where criminal groups expand, conditional on moving. But why did criminals leave the

[3]Data on the number of construction projects per city in this period are unfortunately unavailable.

south in the first place and where did they decide to relocate? Evidence from the work of Varese (2011) and Pinotti and Stanig (2016) shows that the initial move of Italian mafia members towards north was largely caused by the policy of forced resettlement and thus unintentional, both in the decision to move and in the choice of where to relocate. Still, another part of population of mafiosi might have relocated intentionally and chose to go exactly where they thought they would be able to relocate: where migration from the south and employment in constructions were high.

While this is possible and compatible with the theory, we should observe at least a correlation between construction employment, migration from the south and mafia presence. Instead, OLS regression results show no significant correlation between these two variables and mafia presence. For intentionality to have played a role, we must assume that mafia members targeted not the cities with larger construction, but rather the cities in which construction was marginally higher due to the application of the regulatory plan law between 1865 and 1942, and that they went not where many southern migrants lived but where in the past initial colonies of settlers from the south had established their residency. While intentionality of mafia move would not constitute a contradiction to the theory of organized crime expansion, empirical evidence suggests that, at least in this case, mafias decision of where to move might have been dictated by a variety of factors - perhaps also including where migration and constructions were high, although not systematically - and then expansion happened to be successful where an exchange with locals took place thanks to incentives provided by competition and the availability of migrants.

Resettled mafia members: A related question is whether the resettlement of mafia-members has a differential impact on the probability that mafias expand in cities with high construction and southern migration levels. I import information on how many mafia-members were forcibly relocated to each northern province from the reports of the Parliamentary Commission against Mafia, 1976. I then subset the estimates for whether a province received more than zero, more than median or more than the 75th percentile of

Table 30: Competition for hiring vs competition against entrants

	(1) Mafia	(2) Mafia
Emp Constr pc	-0.169	
	(0.052)	
Migr South pc	-0.032	0.056
	(0.017)	(0.057)
Emp Constr x Migr South	0.098	
	(0.041)	
Firm Constr pc		-0.067
		(0.022)
Firm Constr x Migr South		-0.030
		(0.056)
Observations	11,926	11,926
Number of cities	5,963	5,963
City, Decade FE	Yes	Yes
SW F-Stat	81.70	7.400
A-R Wald test	28.10	28
Mean DV	0.0150	0.0150

Note: The table compares the main analyses (Col 1) with a specification replacing construction employment per capita with the number of firms per capita (Column 2). City and decade fixed effects are included in all estimates, together with a control for the interaction of population in 1871 (determining the assignment of the regulatory plan) and growth in construction employment. Standard errors are clustered at the city level.

forcibly relocated mafiosi (Table 31). The effect of construction and migration tends to become larger as the number of resettled mafiosi increases. This indicates that, although more mafia members might have facilitated transplantation, the theory of mafia expansion documented in this chapter is unlikely to be dependent by mafia members already being present in places in which migration or construction was larger. Results are also replicated for each different number of forcibly-resettled mafia members in a province and are included in Figure 47.

Figure 47: Effect on mafia presence depending on how many resettled mafia-members are present in a province

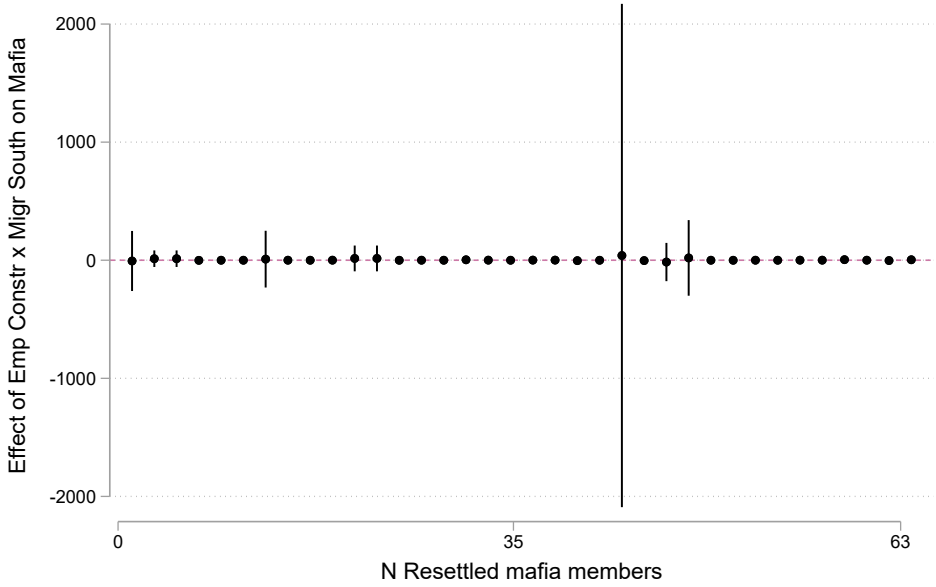


Table 31: Effect on mafia presence depending on number of forcibly resettled mafia members in a province

	(1) Forcibly resettled mafiosi > 0	(2) Forcibly resettled mafiosi $> 50pc$	(3) Forcibly resettled mafiosi $> 75pc$
Emp Constr pc	-0.132	-0.174	-0.238
	(0.037)	(0.060)	(0.100)
Migr South pc	-0.033	-0.042	-0.065
	(0.015)	(0.021)	(0.031)
Emp Constr x Migr South	0.117	0.137	0.179
	(0.042)	(0.062)	(0.077)
Observations	10,384	5,958	2,732
Number of cities	5,192	2,979	1,366
City, Decade FE	Yes	Yes	Yes
SW F-Stat	77.36	45.65	41.85
A-R Wald test	33.60	33.60	19.60

Note: Results of the main specification (Equation 2.1) by number of forcibly resettled mafia members in the province. I consider whether their number is larger than 0 in Col 1, larger than the 50th percentile (n=35) in Col 2, larger than the 75th percentile (n=48) in Col 3.)

A.9. Effect on politics

A.9.1. Identifying assumptions

To estimate the effect of mafia presence on politics, I adopt an instrumented difference-in-difference design, combining a canonical IV (instrumenting mafia presence) and a DiD (comparing infiltrated cities before and after mafia arrival). The identification assumptions are the same as those necessary for an IV and for a DiD.

First, it is assumed that the only way the instrument affects the outcome is through the treatment, conditional on covariates. In this case, the combination of the shift-share instrument for migration and the instrument for construction should only affect vote share through mafia presence. I control for predicted employment in construction and migration from the south in each regression to partial out their direct effect on mafia presence, as well as for city and year fixed characteristics, in every regression.

Second, we assume that the instrument at time 1 only affects the treatment from time 1 onwards and not at time zero. In this case, this assumption is easily met as our treatment (mafia presence) was zero in all time periods before period 1 (1958).

Third, as in every difference in difference design, we assume that trends in outcome before the treatment period starts are parallel. I provide evidence for this assumption in Table 32, Column 1. The insignificant coefficient for 1948 suggests that cities with and without mafia only starts becoming significantly different in terms of vote share for the DC from 1958 onwards, when the boom in migration and construction starts. When we look at trends in voting before the arrival of mafias using mafia presence not instrumented (i.e. not quasi-randomly assigned), we see that trends are instead not parallel (Table 32, Column 2). The vote share of the DC starts increasing already before the arrival of mafia in cities which will be in the future infiltrated, a pattern which might suggest that mafias established in these cities endogenously, due to a larger presence of the Christian Democracy. Using an instrumented DiD design accounts for this endogeneity issue.

Table 32: Parallel trends in voting pre-mafia arrival

	(1) DC vote share (Mafia predicted)	(2) DC vote share (Mafia news)
Year = 1948	0.064	0.064
	(0.001)	(0.001)
Year = 1958	0.023	0.022
	(0.001)	(0.001)
Year = 1963	-0.003	-0.003
	(0.001)	(0.001)
Year = 1968	0.003	0.003
	(0.001)	(0.001)
Year = 1972	0.035	0.033
	(0.004)	(0.004)
Year = 1976	0.007	0.004
	(0.004)	(0.004)
Year = 1979	-0.003	-0.005
	(0.004)	(0.004)
Year = 1983	-0.052	-0.054
	(0.004)	(0.004)
Year = 1987	-0.054	-0.056
	(0.004)	(0.004)
Year = 1992	-0.144	-0.146
	(0.004)	(0.004)
Mafia x 1948	0.001	0.022
	(0.002)	(0.006)
Mafia x 1958	0.005	0.013
	(0.001)	(0.006)
Mafia x 1963	0.006	0.014
	(0.002)	(0.005)
Mafia x 1968	0.010	0.004
	(0.002)	(0.005)
Mafia x 1972	0.012	0.001
	(0.002)	(0.008)
Mafia x 1976	0.012	0.013
	(0.002)	(0.006)
Mafia x 1979	0.018	0.005
	(0.003)	(0.006)
Mafia x 1983	0.016	-0.007
	(0.003)	(0.007)
Mafia x 1987	0.015	-0.004
	(0.003)	(0.008)
Mafia x 1992	0.021	0.005
	(0.004)	(0.012)
Observations	62,871	62,870
Number of cities	5,962	5,961
City FE	Yes	Yes
Election Year FE	Yes	Yes

Note: The table includes coefficients from the DiD regression in Equation 2.4 interacting $Mafia$ with year dummies. $Mafia$ is the average predicted mafia presence in a city (from IV) in Col 1 and average news per capita in Col 2.

A.9.2. Additional results on politics

Table 33: Effect of predicted mafia presence on Communist and Socialist Party vote share 1948-1992 (DiD)

	(1) Vote share Left	(2) Log total Left vote
Mafia x Post 57	-0.002*	0.005
	(0.001)	(0.008)
Observations	62,881	62,694
Number of cities	5,962	5,962
City FE	Yes	Yes
Election Year FE	Yes	Yes
Mean DV	0.249	6.427

Note: Results from the DiD in Equation 2.4, estimating the effect of mafia presence (predicted from IV estimates) on vote for the Communist and Socialist Party after mafia-arrival (Post 1957). In Col 1 I consider the vote share and in Col 2 the log of total votes controlling for city population. Controls for construction employment, southern migration and their interaction (predicted from IV estimates), city and year fixed effects are included. Standard errors are clustered at the city level.

Table 34: Effect of predicted mafia presence on DC Vote Share, robustness

	(1) DC share Use 1962 as post	(2) Log tot votes Use 1962 as post	(3) DC share No controls migr, constr	(4) Log tot votes No controls migr, constr
Mafia x Post 62	0.012	0.029		
	(0.002)	(0.007)		
Mafia x Post 57			0.012	0.019
			(0.002)	(0.006)
Observations	62,870	62,784	62,870	62,784
Number of cites	5,961	5,961	5,961	5,961
City FE	Yes	Yes	Yes	Yes
Election Year FE	Yes	Yes	Yes	Yes

Note: The table provides robustness tests of Table 5. In Col 1 and 2, I consider as Post the period after 1962 instead of 1957. In Col 3 and 4, I remove controls for migration and employment in the construction sector. All regressions include city and year fixed effects and standard errors are clustered at the city level.

Table 35: Effect of other covariates on DC vote share 1953-1992

	(1) DCshare	(2) DCshare	(3) DCshare	(4) DCshare	(5) DCshare	(6) DCshare
Population	-0.000					
	(0.000)					
Pop x Post	0.000					
	(0.000)					
Pop density		-0.000				
		(0.000)				
Pop dens x Post		-0.000				
		(0.000)				
With Degree			0.013			
			(0.001)			
W Degree x Post			-0.006			
			(0.001)			
Analphabetism				-0.013		
				(0.001)		
Analph x Post				0.004		
				(0.000)		
Employment					-0.004	
					(0.000)	
Emp x Post					0.001	
					(0.000)	
Without property house						-0.002
						(0.000)
Wo Property x Post						-0.000
						(0.000)
Observations	62,877	62,876	62,876	62,876	62,876	62,876
Number of cities	5,963	5,962	5,962	5,962	5,962	5,962
City Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Note: The table replicates the specification in Equation 2.4 and the results in Table 5 replacing the treatment (mafia presence) with other covariates which characterize the differences between cities with and without mafia presence.

APPENDIX - Appendix to The Electoral Effects of Fighting Migrants' Exploitation

B.1. Descriptive Statistics

Figure 48: Localities reached by the union (2007-2015)

Table 36: Political parties in each group

Far-Right	**Center-Right**	**Center-Left**	**Far-Left**
Alleanza Lombarda	Nuovo Psi (2001, 2006)	Alleanza Democratica	Comunisti Italiani
Alternativa Sociale	Abolizione Scorporo	Alleanza Democrativa	Democrazia Atea
Alternativa Sociale	Alleanza Nazionale	Centro Democratico	La Rete
Azione Sociale	Ambienta-Lista	Civica Popolare Lorenzin	La Sinistra L'Arcobaleno
Blocco Nazionale	Cantiere Popolare (2013)	Cristiano Sociali	Liberi E Uguali
per le liberta'			
Casapound	Centro Cristiano Democratico	Democratici Cristiani Uniti	
Destra Nazionale	Centro Democratico Cristiano	Democratici Di Sinistra	Nuova Sinistra
Die Freiheitlichen	Forza Italia	Democratici Sinistra	della Valle D'Aosta
Fiamma Tricolore	Fratelli D'Italia	Democrazia Cristiana (2006)	Nuova Sinistra Unita
Forza Nuova	Futuro E Liberta'	Federazione Laburista (1996)	Smaller far-left parties
Fronte Nazionale	Grande Sud (2013)	Girasole	Per Una Sinistra Rivoluzionaria
Grande Nord	Il Popolo Della Famiglia	Italia Dei Valori (2006, 2008)	Potere Al Popolo
Grande Sud	Intesa Popolare (2013)	Italia Europa Insieme	Proletaria
Italia Agli Italiani	Liberal Democratici (2008)	Lega Autonomia Veneta	Rifondazione Comunista
La Destra	Liberi Per Una Italia Equa	Lega Consumatori (2006)	Rivoluzione Civile
Lega	Mir - Moderati In Rivoluzione	Lega Pensionati (2006)	Sardigna Natzione
Lega Alpina Lumbarda	Moderati In Rivoluzione (2013)	Liberal Democratici Europei	Sinistra Critica
Lega Angela Bossi	Nuovo Psi (2001, 2006)	Liberali Per L'Italia	Sinistra Ecologia Liberta'
Lega Nord	Partito Pensionati	Liga Fronte Veneto (2006)	Verdi
Lega Per L'Autonomia	Partito Repubblicano	Lista Consumatori	
	Italiano (2001, 2006)		
Lega Sud	Partito Socialista (2001, 2006)	Lista Dini	
Movimento Per	Pensionati Uniti	L'Ulivo	
L'Autonomia			
Movimento Sociale	Popolo Della Liberta'	Margherita	
Movimento Sociale Italiano	Riformisti Italiani	Mastella (2006)	
Mussolini	Sos Italia	Paese Nuovo	
Rifondazione Missina	UDC E Democratici Di Centro	Partito Democratico	
Terzo Polo	Unione Democratici Cristiani	Partito Pensionati (2006)	
		Partito Popolare Italiano	
		Partito Popolare Italiano (1996)	
		Partito Repubblicano	
		Italiano (1996)	
		Partito Socialista Italiano	
		Patto Segni (1996)	
		Piu Europa	
		Prodi	
		Repubblicani Europei	
		Rete - Movimento Democratico	
		Rinnovamento	
		Rinnovamento Democratico	
		Rosa Nel Pugno (2006)	
		Socialisti Italiani (1996)	
		Udeur (2006)	
		Unione Democratica (1996)	
		Südtiroler Volkspartei	

B.2. Identification Assumptions

Table 37: Balance in full (F) and matched (M) sample

	Control Full	Control Match	Treat	Std Diff F vs T	Std Diff M vs T
Variables for match					
Employed in agriculture	9.146	21.005	18.598	0.643	-0.126
	(8.543)	(14.797)	(11.968)		
Employed Unskilled	18.440	24.120	23.483	0.434	-0.045
	(7.424)	(11.135)	(8.930)		
Unemployed	10.122	17.474	18.290	0.928	0.074
	(6.402)	(9.232)	(6.034)		
Foreign population	577.39	346.30	311.53	-0.53	-0.08
	(421.24)	(341.30)	(274.19)		
Union members	0.023	0.039	0.049	0.820	0.202
per capita 2006	(0.024)	(0.028)	(0.021)		
Analphabetism	1.199	2.798	2.620	0.693	-0.071
	(1.438)	(2.030)	(1.464)		
Population density	294.8	463.3	628.9	0.204	0.091
	(623.8)	(1,004)	(1,512)		
Population	7089	62149	47751	0.282	-0.037
	(38030)	(366805)	(139280)		
Other covariates					
City Surface	9.973	9.913	9.597	-0.018	-0.014
	(13.441)	(16.645)	(16.049)		
Share males	97.147	96.981	95.426	-0.238	-0.243
	(6.398)	(5.430)	(3.369)		
Elderly dependence	35.933	33.382	28.087	-0.544	-0.367
	(12.300)	(12.304)	(7.513)		
Young dependence	20.374	21.273	22.499	0.394	0.201
	(3.899)	(4.809)	(3.730)		
Index old people	195.352	174.140	132.959	-0.406	-0.368
	(141.794)	(95.043)	(59.051)		
Share divorced	4.669	3.044	2.832	-0.776	-0.103
	(2.027)	(1.668)	(1.221)		
Foreign pop minors	210.580	184.350	194.798	-0.159	0.109
	(81.522)	(77.505)	(56.915)		
Foreign italian couples	25.308	19.591	12.323	-0.755	-0.407
	(15.265)	(16.003)	(7.948)		
Foreign employment	556.489	538.618	549.891	-0.043	0.069
	(108.161)	(122.112)	(107.622)		

Ratio foreign employed	833.100	733.244	697.427	-0.496	-0.149
	(228.557)	(188.175)	(150.360)		
Ratio foreign unemp	732.187	1,324.199	1,374.661	0.562	0.035
	(599.829)	(1,055.893)	(973.356)		
Foreign commuting	161.369	162.897	153.122	-0.081	-0.087
	(83.542)	(95.786)	(57.507)		
Foreign in education	356.537	347.947	282.594	-0.309	-0.242
	(208.191)	(243.243)	(118.130)		
Ratio foreign in educ	1,353.60	1,781.72	2,128.42	0.464	0.171
	(1,011.2)	(1,530.2)	(1,328.6)		
Family size	2.361	2.504	2.666	0.791	0.376
	(0.269)	(0.329)	(0.276)		
Young living alone	7.331	6.165	4.984	-0.429	-0.250
	(4.477)	(3.516)	(3.151)		
Single parent family	0.985	0.867	0.856	-0.152	-0.016
	(0.794)	(0.565)	(0.308)		
Couples without kids	3.055	2.592	2.858	-0.110	0.161
	(1.535)	(1.362)	(0.938)		
Old living alone	29.537	28.288	26.675	-0.340	-0.240
	(7.538)	(5.579)	(3.774)		
Property houses	76.884	73.763	71.583	-0.564	-0.203
	(6.683)	(8.487)	(6.618)		
Urban housing	28.988	28.320	23.136	-0.256	-0.259
	(20.199)	(16.886)	(10.756)		
Sparse housing	35.825	36.392	37.933	0.058	0.043
	(25.590)	(25.205)	(25.459)		
Age houses	29.233	29.673	28.627	-0.094	-0.149
	(4.622)	(5.412)	(4.457)		
Services in house	99.134	98.738	98.357	-0.195	-0.121
	(3.005)	(1.758)	(2.614)		
Houses in good state	82.797	79.049	76.297	-0.459	-0.187
	(11.121)	(11.831)	(8.775)		
Urbanistic expansion	8.468	7.725	7.284	-0.133	-0.053
	(6.571)	(5.751)	(6.005)		
Inhabitants per room	54.803	60.545	65.213	0.910	0.341
	(7.322)	(10.507)	(8.794)		
Gender differences	102.381	99.638	103.165	0.051	0.220
in education	(13.466)	(14.112)	(7.619)		
Adults studying	4.549	5.104	5.513	0.485	0.200
	(1.454)	(1.542)	(1.351)		
Early exit educ system	16.603	20.708	20.825	0.346	0.009
	(9.974)	(10.927)	(7.054)		
Diploma or bachelor	49.280	43.414	45.235	-0.303	0.122
	(9.057)	(11.347)	(9.779)		
Adults with diploma	18.625	17.397	17.759	-0.087	0.037

or bachelor	(7.540)	(7.452)	(6.547)		
Education 15-19 y.o.	98.224	97.212	97.320	-0.291	0.037
	(2.490)	(2.222)	(1.861)		
Education, middle school	37.863	39.133	35.438	-0.276	-0.380
	(6.996)	(8.138)	(5.331)		
Not in empl nor educ	19.814	27.372	30.324	0.882	0.224
	(8.539)	(10.219)	(8.310)		
Active/inactive empl	62.935	53.187	48.372	-0.435	-0.176
	(31.587)	(24.923)	(11.186)		
Unemployed male	8.292	14.760	14.855	0.849	0.010
	(5.720)	(7.948)	(5.204)		
Unemployed female	12.889	22.194	24.035	0.949	0.124
	(8.234)	(12.227)	(8.380)		
Unemployed young	29.154	40.387	45.417	0.863	0.241
	(15.436)	(17.841)	(10.811)		
Employed Male	55.119	49.850	49.715	-0.585	-0.014
	(7.714)	(8.683)	(5.074)		
Employed Female	35.583	28.059	26.309	-0.876	-0.161
	(8.768)	(9.135)	(5.939)		
Employed	45.137	38.705	37.641	-0.793	-0.109
	(7.955)	(8.357)	(5.099)		
Employed in industry	31.306	22.997	22.232	-0.727	-0.073
	(10.805)	(8.506)	(6.243)		
Employed in services	40.773	39.509	42.519	0.130	0.210
	(8.820)	(10.171)	(10.134)		
Employed in commerce	18.774	16.480	16.639	-0.373	0.033
	(5.137)	(4.078)	(2.534)		
Employed high skill	25.829	24.635	29.266	0.322	0.377
	(6.551)	(8.918)	(8.443)		
Employed med skill	27.073	25.832	21.422	-0.613	-0.375
	(7.755)	(10.635)	(4.985)		
Share pop commuting	59.780	52.659	52.058	-0.756	-0.058
	(8.531)	(8.608)	(5.626)		
Improper housing	0.170	0.168	0.172	0.003	0.011
conditions	(0.668)	(0.255)	(0.211)		
Family economic issues	2.001	4.168	4.345	0.713	0.039
	(1.881)	(3.637)	(2.695)		
Overcrowded houses	1.010	1.727	1.973	0.462	0.098
	(1.019)	(1.701)	(1.820)		
Observations	136,595	816	833		

Figure 49: Parallel trends test on firms seized to mafias

Figure 50: Firms seized to mafias

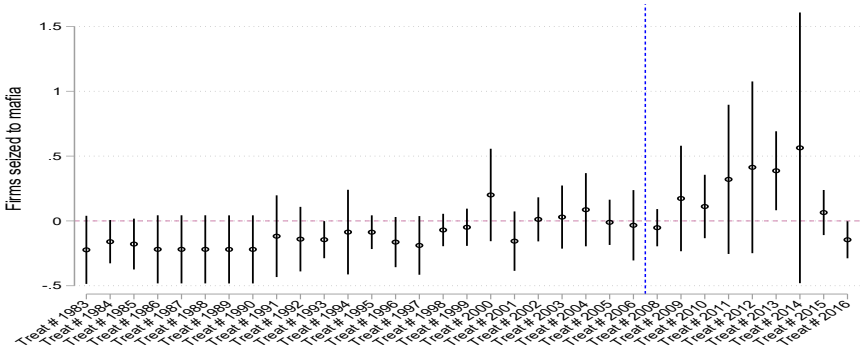
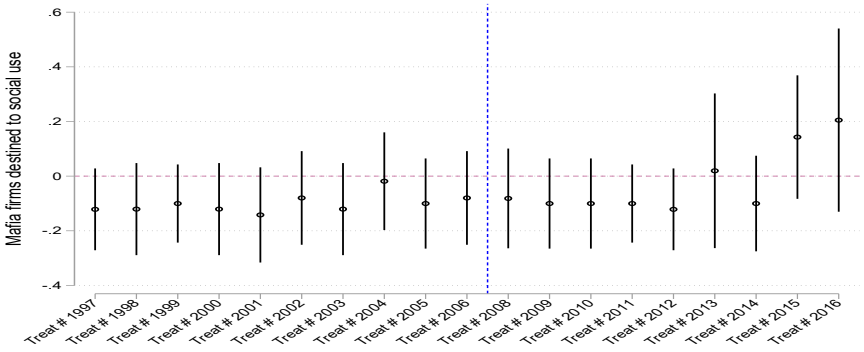


Figure 51: Mafia firms destined for social use



Note: Parallel trends for firms seized to mafias and destined for social use. Coefficients from the interaction of treatment indicator (equal to 1 in treated cities) and year dummies. The blue vertical line indicates the reference category (year 2007). In the first year of treatment, only 10 cities are reached by the intervention, while by 2013 they are 40. Regressions include city and year FE and standard errors are clustered at the city level.

Figure 52: Parallel trends test on matched sample

Figure 53: News per capita

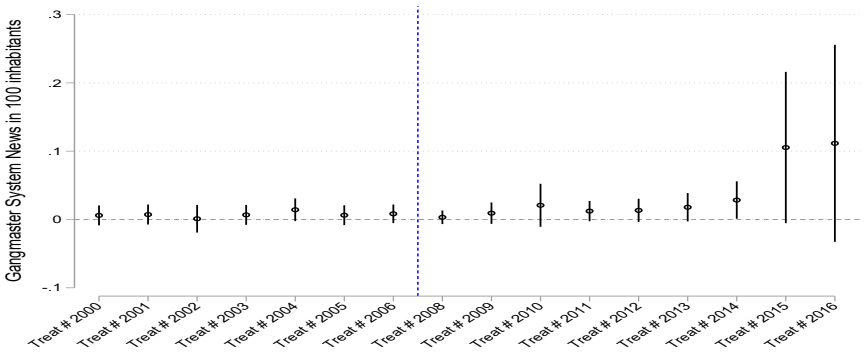


Figure 54: Properties seized to mafias

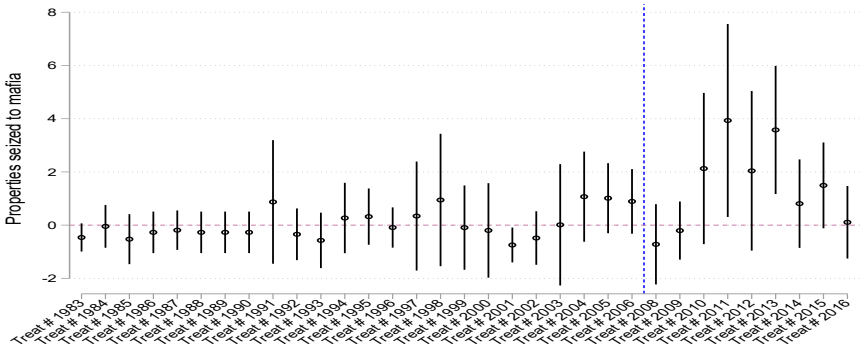
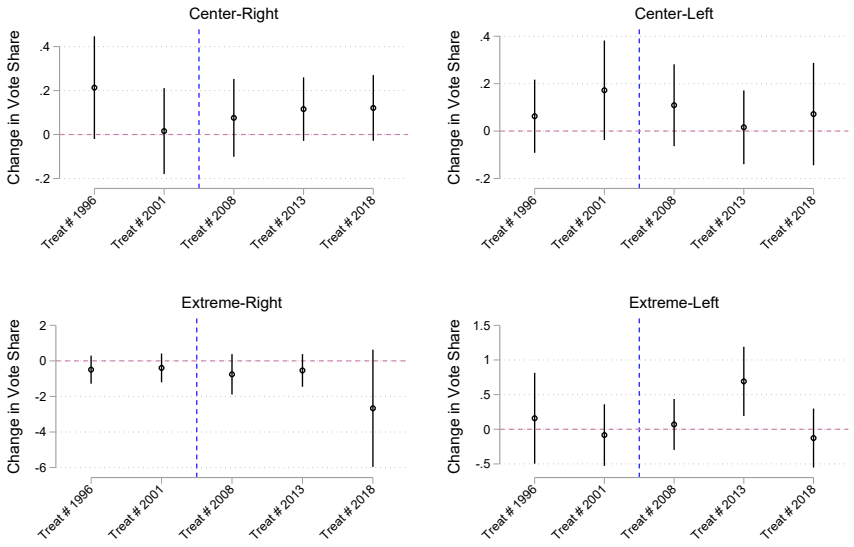


Figure 55: Mafia properties destined for social use

Note: Parallel trends repeated for the sample matched using nearest neighborhood matching. Coefficients from the interaction of treatment indicator (equal to 1 in treated cities) and year dummies. The blue vertical line indicates the reference category (year 2007). In the first year of treatment, only 10 cities are reached by the intervention, while by 2013 they are 40. Regressions include city and year FE and standard errors are clustered at the city level.

Figure 56: Parallel trends test on matched sample



Note: Parallel trends repeated for the sample matched using nearest neighborhood matching. Coefficients from the interaction of treatment indicator (equal to 1 in treated cities) and election-year dummies. The blue vertical line indicates the reference category (election year 2006). In the first year of treatment, only 10 cities are reached by the intervention, while by 2013 they are 40. Regressions include city and year FE and standard errors are clustered at the city level.

B.3. Robustness

Table 38: Treatment effect on news related to gangmaster system, by newspaper (DiD)

	(1) Full Corriere	(2) Matched Corriere	(3) Full Repubblica	(4) Matched Repubblica
Treated	0.0187**	0.0107**	0.0221*	0.0172**
	(0.00946)	(0.00445)	(0.0120)	(0.00783)
Observations	137,275	1,649	137,275	1,649
R-squared	0.080	0.124	0.162	0.174
City and Year FE	Yes	Yes	Yes	Yes
Mean DV	0.0001	0.0002	0.0020	0.0030

Note: The table reports results from a DiD capturing the change in news about gangmaster system in cities treated with the union intervention, before and after the intervention took place. The DV is the population share of news from Corriere (Col 1-2) and Repubblica (Col 3-4) in 1000 inhabitants. City and year FE are included and standard errors are clustered at the city level.

Table 39: Treatment effect on news related to gangmaster system, total news (DiD)

	(1) Full	(2) Matched	(3) Staggered	(4) Stacked
treated	0.729***	0.507*	0.187	0.631***
	(0.261)	(0.260)	(0.196)	(0.215)
Observations	137,428	1,649	833	153,596
R-squared	0.295	0.358	0.362	0.332
City and Year FE	Yes	Yes	Yes	Yes
Mean DV	0.0138	0.160	0.419	0.0138

Note: The table reports results from a DiD capturing the change in news about gangmaster system in cities treated with the union intervention, before and after the intervention took place. The DV is the total number of news in a city-year. City and year FE are included and standard errors are clustered at the city level.

Table 40: Treatment effect on firms seized to mafias (DiD)

	(1) Full	(2) Matched	(3) Staggered	(4) Stacked
Treated	0.250**	0.0777	-0.665	0.124**
	(0.112)	(0.103)	(0.620)	(0.0567)
Observations	274,890	3,298	1,666	291,060
R-squared	0.328	0.363	0.393	0.310
City Year FE	Yes	Yes	Yes	Yes
Mean DV	0.0180	0.0343	0.259	0.0170

Note: The table reports results from a DiD capturing the change in firms seized to mafias in cities treated with the union intervention, before and after the intervention took place. City and year FE are included and standard errors are clustered at the city level.

Table 41: Treatment effect mafia properties destined for agricultural cooperatives and social purposes (DiD)

	(1) Agriculture Full	(2) Agriculture Matched	(3) Agriculture Staggered	(4) Agriculture Stacked	(5) Social use Full	(6) Social use Matched	(7) Social use Staggered	(8) Social use Stacked
Treated	0.385*	0.260	0.126*	0.389*	0.915*	0.746	0.315	0.906*
	(0.223)	(0.204)	(0.0689)	(0.199)	(0.530)	(0.460)	(0.210)	(0.480)
Observ	274,890	3,264	1,666	291,060	274,890	3,264	1,666	291,060
R-squared	0.056	0.064	0.060	0.055	0.100	0.110	0.120	0.096
City FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mean DV	0.0078	0.0544	0.102	0.0089	0.0191	0.0707	0.254	0.0219

Note: The table reports results from a DiD capturing the change in seized properties that were destined for agricultural cooperatives and for social purposes in cities treated with the union intervention, before and after the intervention took place. City and year FE are included and standard errors are clustered at the city level.

Table 42: Treatment effect on parties' vote share (DiD)

	Full	Matched	Staggered	Stacked
	(1)	(2)	(3)	(4)
	Center-Right	Center-Right	Center-Right	Center-Right
Treated	0.0116	0.00615	-0.0129	0.00580
	(0.0114)	(0.0118)	(0.0121)	(0.0111)
Mean DV	0.325	0.366	0.379	0.325
	(5)	(6)	(7)	(8)
	Far-Right	Far-Right	Far-Right	Far-Right
Treated	-0.00791*	-0.00194	0.0116	0.0187***
	(0.00435)	(0.00704)	(0.0101)	(0.00692)
Mean DV	0.125	0.0609	0.0385	0.125
	(9)	(10)	(11)	(12)
	Center-Left	Center-Left	Center-Left	Center-Left
Treated	-0.0310***	-0.0124	-0.0232*	-0.0201***
	(0.00796)	(0.0106)	(0.0132)	(0.00779)
Mean DV	0.314	0.300	0.295	0.314
	(13)	(14)	(15)	(16)
	Far-Left	Far-Left	Far-Left	Far-Left
Treated	0.0106***	0.00520	0.0107**	0.0130***
	(0.00356)	(0.00526)	(0.00477)	(0.00359)
Mean DV	0.0619	0.0649	0.0670	0.0619
Observations	46,867	540	283	46,819
City FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes

Note: The table reports results from a DiD capturing treatment effect on parties vote share in cities treated with the union intervention, before and after the intervention took place. City and year FE are included and standard errors are clustered at the city level. All data on national elections since 1994 are included.

Table 43: Treatment effect on change in parties' vote share, treatment close to elections (DiD)

	Full	Matched	Staggered	Stacked
	(1)	(2)	(3)	(4)
	Center-Right	Center-Right	Center-Right	Center-Right
Treated	-0.0428	-0.0405	.	-0.0626***
	(0.0277)	(0.0448)	.	(0.0224)
Mean DV	-0.0207	0.0123	.	-0.0206
	(5)	(6)	(7)	(8)
	Far-Right	Far-Right	Far-Right	Far-Right
Treated	-0.600**	-0.322	.	-0.0958
	(0.265)	(0.559)	.	(0.324)
Mean DV	0.958	1.289	.	0.957
	(9)	(10)	(11)	(12)
	Center-Left	Center-Left	Center-Left	Center-Left
Treated	-0.109***	-0.118**	.	-0.0775***
	(0.0262)	(0.0487)	.	(0.0295)
Mean DV	-0.0786	-0.113	.	-0.0784
	(13)	(14)	(15)	(16)
	Far-Left	Far-Left	Far-Left	Far-Left
Treated	0.410**	0.635**	.	0.616***
	(0.180)	(0.282)	.	(0.166)
Mean DV	0.116	0.359	.	0.116
Observations	47,178	284	144	47,130
City FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes

Note: The table reports results from a DiD capturing treatment effect on change in parties' vote share in cities treated with the union intervention, before and after the intervention took place. In this test, I only considered as treated cities in which the intervention happened less than one year before elections and set the other treated observations as missing. Due to lack of observations, the staggered design cannot be estimated with this specification. City and year FE are included and standard errors are clustered at the city level. All data on national elections since 1994 are included.

B.3.1. Results for Lega Nord

As mentioned in the text, considering the Lega as separate from other far-right parties is conceptually suboptimal, as both the Lega and all other parties in the far-right group have an agenda explicitly against immigration. For this reason, in the main specification I present aggregated results for all far-right parties and I only display results for the most famous anti-immigrant party alone in Appendix. For this outcome, the parallel trends assumption does not hold: coefficients before treatment are already on an increasing trajectory, both if we consider the full sample and the matched sample (Figure 57). Treated cities were already experience a growth in vote share for this far-right party. In absence of parallel trends, the specification using a staggered design (Column 3) is fundamental to establish whether the effects observed are credible, but this specification displays insignificant coefficients and of opposite sign with respect to the other columns (Table 44). In conclusion, it seems that treated cities were already voting for the Lega Nord at higher rates and that after the intervention they continued to do so, but not at differentially higher rates.

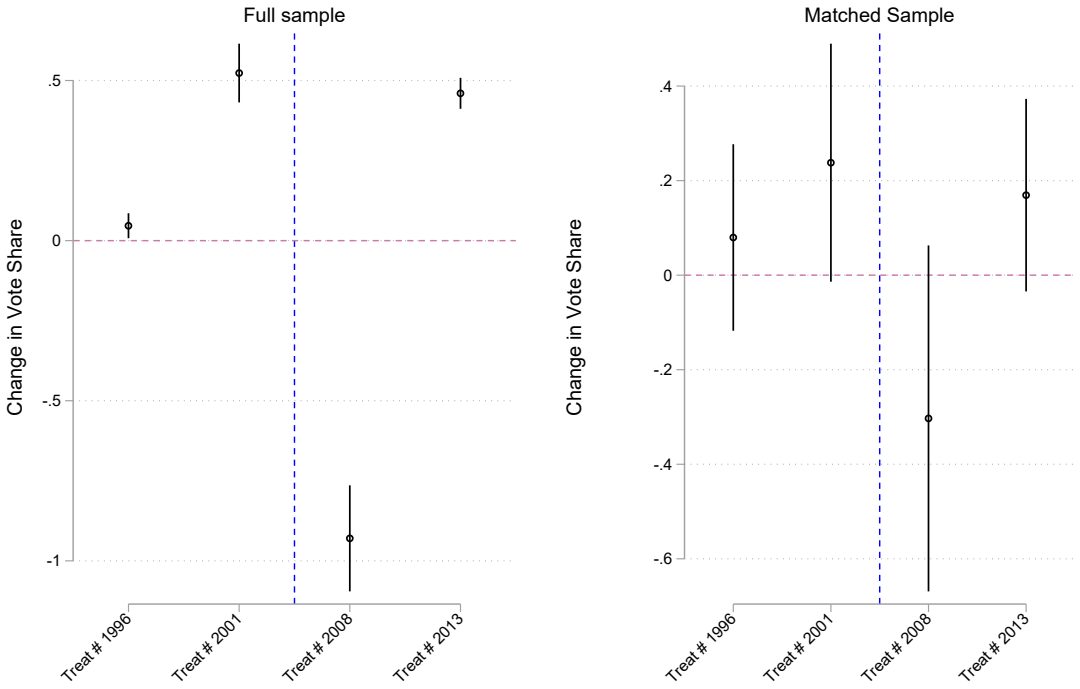
B.4. Survey experiment

This section describes the design of a survey experiment to test the determinants of change in vote share in treated cities. The hypothesis is that learning about the exploitation of migrants fostered sentiments of sympathy and acceptance of integration towards them, with an impact on voting for parties that support this policy.

Experimental design

The survey experiment is conducted on a sample of 2,000 Google Survey respondents living in zip codes that were not treated by the union intervention but in which, according to the report by the Placido Rizzotto Observatory, there is severe exploitation of migrants. The treatment is intended to generate exogenous variation in respondents' learning of the condition of enslavement migrants are exposed to in their city. Treated individuals will be given precise information on migrants' living conditions and situation of exploitation and

Figure 57: Parallel Trends test, Lega Nord



Note: Parallel trends test for the change in Lega Nord vote share. The figure displays coefficients from the interaction of treatment indicator (equal to 1 in treated cities) and election-year dummies. The blue vertical line indicates the reference category (election year 2006). In the first year of treatment, only 10 cities are reached by the intervention, while by 2013 they are 40. Regressions include city and year FE and standard errors are clustered at the city level.

Table 44: Treatment effect on change in vote share for the Lega Nord (DiD)

	(1) Full Lega Nord	(2) Matched Lega Nord	(3) Staggered Lega Nord	(4) Stacked Lega Nord
Treated	34.95***	22.07***	-2.296	15.12*
	(6.267)	(6.956)	(5.700)	(7.976)
Observations	47,835	564	288	47,787
R-squared	0.302	0.511	0.618	0.298
City Year FE	Yes	Yes	Yes	Yes
Mean DV	3.864	6.379	15	3.864

Note: The table reports results from a DiD estimating the change in vote share for the Lega Nord in cities treated with the union intervention, before and after the intervention took place. City and year FE are included and standard errors are clustered at the city level.

will be informed about the information dissemination campaign which, in other cities, led to increasing reporting of gangmasters. Individuals in the control group, instead, will learn about the numbers of migrants' presence and integration in the legal labor force in their city. Treating subjects with information about migrants' enslavement will enable me to estimate the impact of learning about exploitation on policy preferences for migrants' integration and party vote. I compare this treatment to a control in which citizens learn basic statistics about immigration in their city, a treatment which is not expected to shift citizens' view on immigration. Respondents are randomized into two groups and are assigned equal (50%) probability to be treated.

Primary Outcomes:

I will measure the following primary outcomes: respondents' support (i) for migrants' integration policies; (ii) for politicians supporting policies favoring migrants' integration; (iii) for current political parties.

Secondary Outcomes: I will measure the following secondary and intermediate outcomes: (i) respondents' view of immigration (from positive to negative) and main motive for it; (ii) respondents' vote in past elections; (iii) respondents' belief in the position of the party they voted for with respect to immigration and whether it mattered for their vote.

APPENDIX - Appendix to Fighting Organized Crime by Targeting their Revenue

C.1. Descriptive Statistics

Table 45: Descriptive statistics

	N	Mean	Std. Dev.	Min	Max
Number of subsidies for bin (binned database)	1608	5.985	6.56	0	96
Amount of subsidies		116,001	51,998	50,000	250,000
Just Below 150k, dummy		0.018	0.133	0.000	1.000
Mafia presence		0.648	0.478	0	1
Mafia, restrictive		0.454	0.498	0	1
Delay, months		-1.960	10.366	-72.36	71.79
Private cofinancing		0.678	0.467	0.000	1.000
Construction, transport		0.280	0.449	0.000	1.000
Research, education		0.395	0.489	0.000	1.000
Company Life		16.821	13.445	0.000	127
Created 2 years before call		0.084	0.278	0.000	1.000
BoD from mafia area		0.555	0.497	0.000	1.000
Bank Debt, winsorized		599.2	894.3	0.000	2,743
Total Debt, winsorized		3,284	3,802	157	11,675
Cash Ratio		0.006	0.031	-0.000	0.873
Total Cash		22.49	491	-7.510	35,823
Return on Assets		2.155	14.88	-884.8	162.2
Observations	9,624				

Figure 58: Distribution of subsidies by sector and awarding institutions

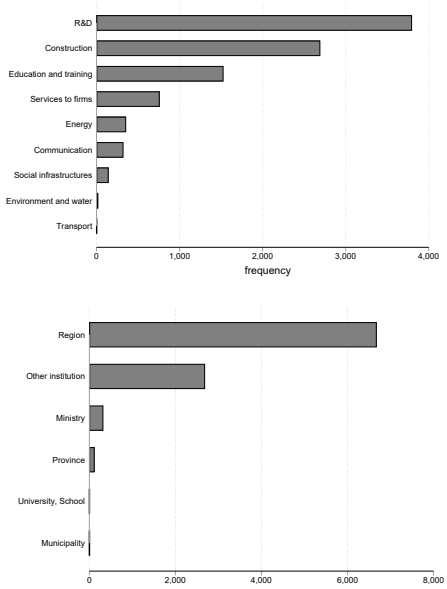
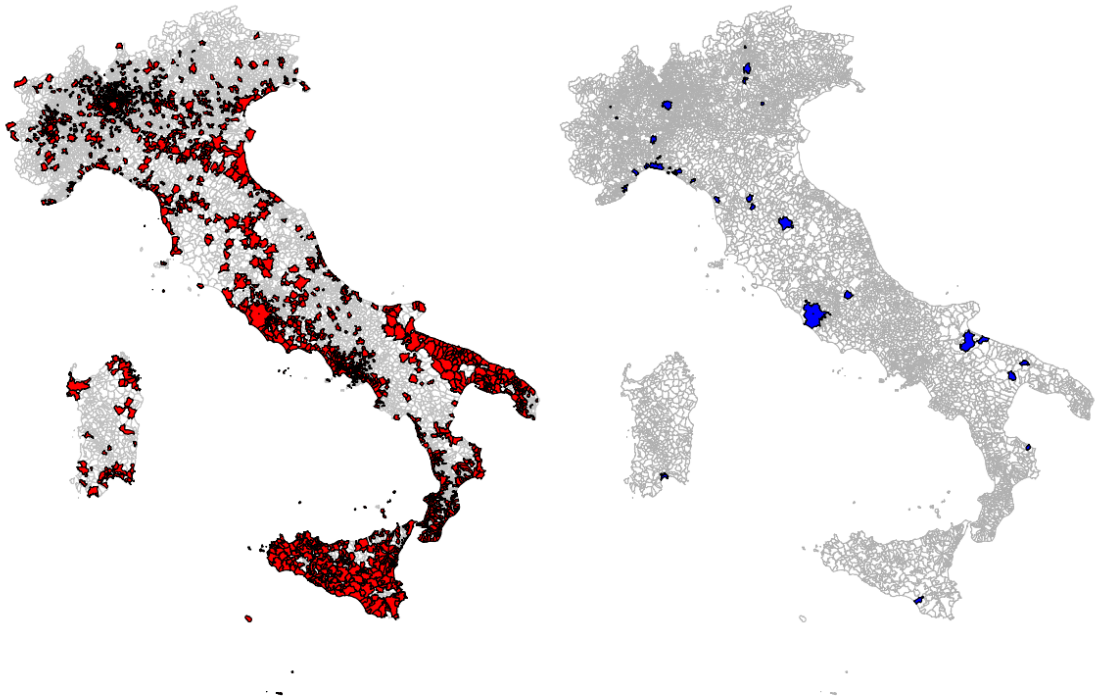


Table 46: Number of subsidies per year in full and matched database

	Full database		Matched database	
Year	N subs	%	N subs	%
2007	671	3.05	.	.
2008	1,723	7.83	750	7.79
2009	3,055	13.88	1,354	14.07
2010	3,796	17.25	1,675	17.4
2011	3,190	14.49	1,418	14.73
2012	2,978	13.53	1,327	13.79
2013	2,918	13.26	1,218	12.66
2014	2,340	10.63	1,184	12.3
2015	1,341	6.09	698	7.25

Figure 59: Presence of mafias (as defined in Section 4.5) and sorting at the threshold



Panel (a): Mafia presence by city

Panel (b): Presence of firms sorting below 150,000 after 2013

Table 47: Effect of institutional corruption and bureaucratic inefficiency

	(1) Corruption	(2) Inefficiency
Just Below	0.0177	0.0295
	(0.0447)	(0.487)
Antimafia Law	0.0621*	0.894*
	(0.0240)	(0.320)
Just Below x Antimafia Law	-0.00321	-0.301
	(0.0627)	(0.585)
Observations	9,624	8,954
R-squared	0.287	0.465
Province Year FE	Yes	Yes

C.2. Sorting at the threshold: robustness tests

We start by discussing in detail the consequences of having subsidies awarded rather than requested in Section C.2.1. We then present robustness and placebo checks on the main analysis.

C.2.1. Is sorting driven by a higher volume of requests?

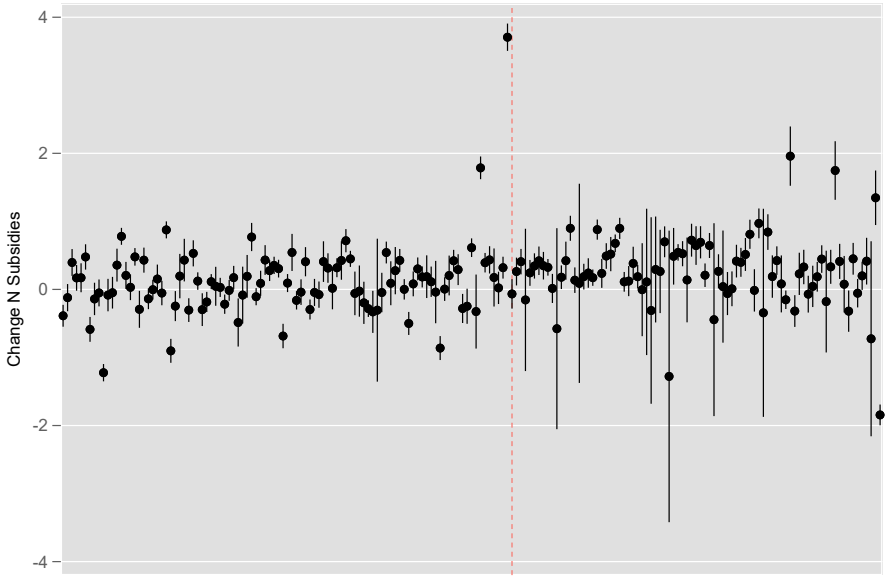
As described in the Data section, we can only observe subsidies awarded and not subsidies requested. This means that the jump we observe at the threshold could be driven by either (i) firms requesting more subsidies for this amount, as we suggest, or (ii) local governments awarding subsidies at a higher rate only in this bin and only after 2013. While it seems difficult to imagine a story supporting this time sensitive and bin-specific variation in local government behavior, it is indeed possible that the awarding rate changed as a result of a change in the type of firms populating this bin after 2013. If the 150,000-euro bin is comprised of a different type of firm (mafia-related) after 2013, then the probability that these firms are awarded a subsidy might change as a result of their different characteristics. Mafia-related firms might be more likely to win subsidies than the average firm (for example, because they corrupt the awarding committee); in this case, part of the jump we observe would be driven by more subsidies being awarded for this amount. Alternatively, mafia-

related firms might be *less* likely to win subsidies because they perform worse on average (we show results in line with this idea in Section 4.6.3). If this was the case, we might be observing a smaller jump than the increase in requests due to a negative awarding rate. In either of these scenarios, in order for a change in local government behavior that is bin and time specific to take place, we need to assume that there was a change in the type of firms applying for funds only at this bin and only after 2013. In other words, even if the jump could be partially driven by a change in the awarding rate, it must be initially driven by an increase in requests for subsidies from a different type of company.

C.2.2. Robustness tests

We start by testing a more demanding specification including region times year fixed effects in Figure 60. Second, we define Post as the period after 2014 (instead of 2013) to account for a potential delay in the time in which the law becomes effective (Figure 64, Panel a). Third, we vary the size of bin from 1,000 to 2,000, 500 and 100 Euro to address the possibility that the way subsidies are binned drives the spike we observe (Figure 64, Panels b-d). We then consider results changing the reference category, removing year fixed effects and dropping 2013 (Figure 65).

Figure 60: Change in subsidies by bin after 2013 Law, Region x Year FE



Note: The figure reproduces the main DID specification described in Equation 2.1 including region times year fixed effects. The coefficient of interest is at the 150,000-euro threshold (vertical line). The reference category is 151,000 euros. Robust standard errors are clustered at the bin level.

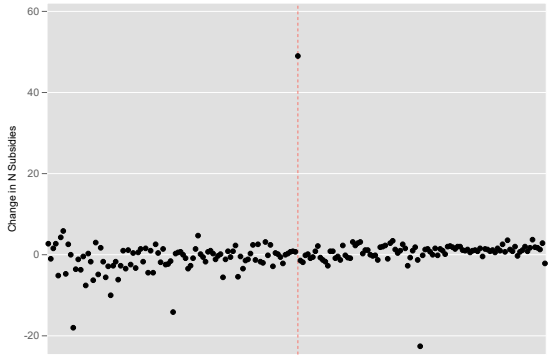


Figure 61: (a) Post = After 2014

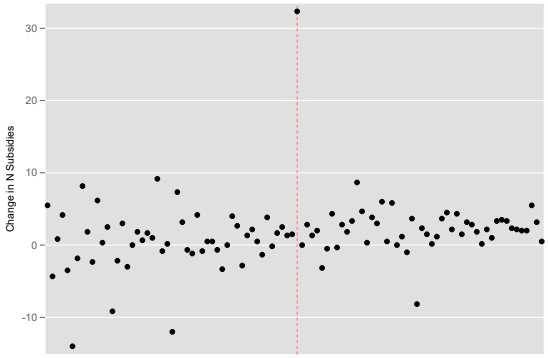


Figure 62: (b) Bin 2000 euro size

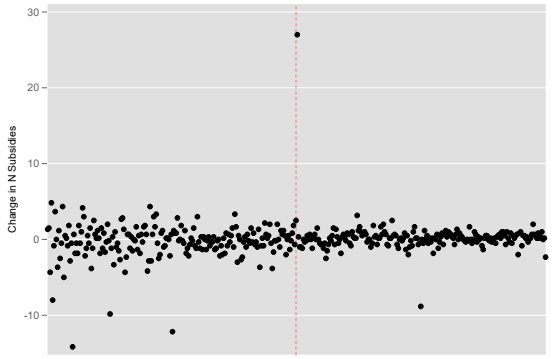


Figure 63: (c) Bin 500 euro

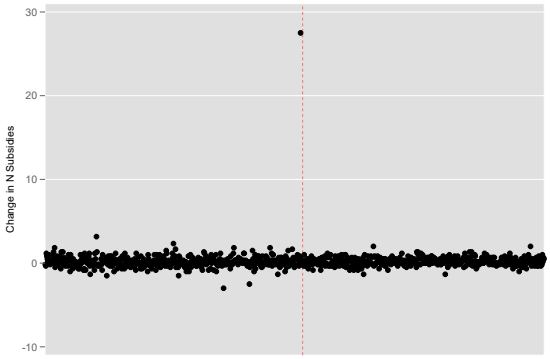
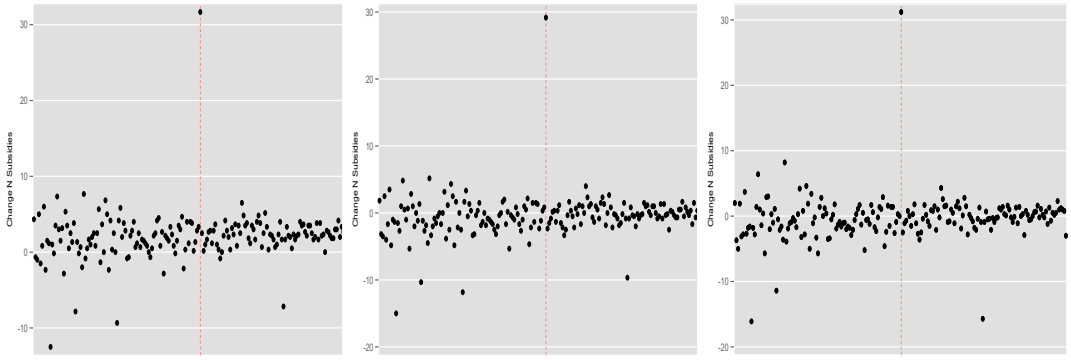


Figure 64: (d) Bin 100 euro

Figure 65: (left) Change reference category (center) Remove years fixed effects (right) Drop 2013



C.2.3. Placebo tests

In cities dissolved for mafia infiltration in the last 5 years, companies have to be screened for mafia infiltration for any subsidy requested, independently of the amount. Given the lack of incentives for requesting less than 150,000 euros, we should see no sorting at the threshold. This is indeed what we find: while observations are considerably less than in the full sample, we observe no jump in subsidies around the discontinuity (Figure 66, Panel a). The second placebo test we perform is on agricultural funds, which, as discussed in Section 4.5, are subject to lower incentives for sorting. In line with the expectations, we see no substantial sorting at the 150,000-euro threshold and only a small increase at the 147,000–148,000 euros bin. This increase suggests some strategic sorting even in this setting.

Figure 66: (left) City dissolved due to mafia (right) Agricultural funds

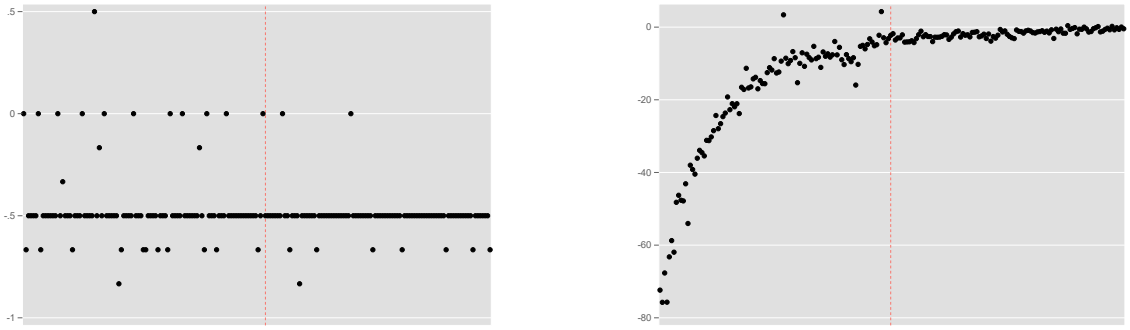
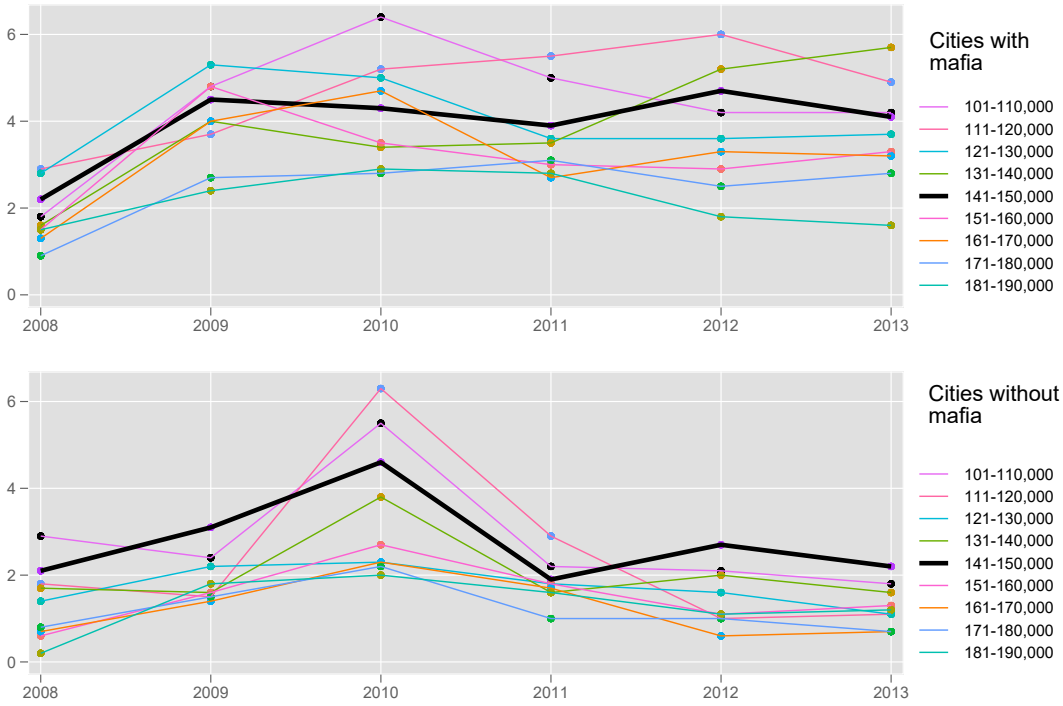


Figure 67: Parallel trends by cities with (top) or without (bottom panel) mafia presence



C.3. Bunching with a kink

An alternative specification to test for the presence of sorting is to estimate the amount of bunching at the threshold. Our case is a kink, as defined by Kleven and Waseem (2013), a discontinuity in the choice sets of business owners caused by the threshold which creates an incentive for firms to move from the region above the cutoff to the region below. We group subsidies into 100 euro bins and calculate the counterfactual distribution of subsidies as the probability density function of our observed distribution, *excluding* the area where we observe the kink – 149,900–150,000 euros. In particular, grouping subsidies into bins of 100 euros (indexed by j), we fit a flexible polynomial of the observed distribution, excluding the affected range:

$$N_j = \sum_{i=0}^{p} \beta_j^0 {Bin_j}^i + \epsilon_j \tag{C.1}$$

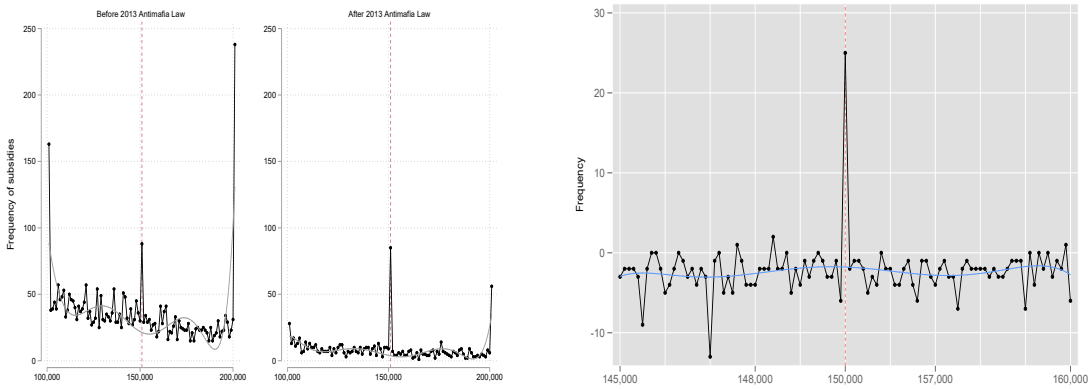
where Bin_j is each bin in the distribution; N_j is the number of subsidies awarded in each bin j; p is the order of polynomial and β_j is the estimate of the counterfactual distribution. Estimating the amount of bunching corresponds to estimating the following polynomial:

$$N_j = \sum_{i=0}^{p} \beta_j^0 {Bin_j}^i + \sum_{i \in [z_-^0, z_+^0]} \gamma_j^0 1\{Amount = j\} + \epsilon_{ij} \tag{C.2}$$

where β_j is the counterfactual distribution estimated above and γ_i is the effect of the threshold on the number of subsidies in the affected range $[z_-^0, z_+^0]$. This procedure, however, overestimates the amount of bunching because it does not account for the additional subsidies awarded at 150,000 euros due to the fact that this is a round number. We therefore consider the amount of bunching to be the difference between the probability density function of the distribution before and after the 2013 law enforcement, estimated above, and the observed distribution. We display our findings in Figure 68 below (left panel). Our estimated coefficient for bunching is 56 before 2013 and 79 after the strengthening of the

2013 law. We also estimate the amount of bunching on the difference between the number of subsidies awarded after and before the new law (right panel). In line with our main results, the amount of bunching at the threshold is significantly higher in the period after the strengthening of the 2013 Antimafia Law.

Figure 68: Bunching



Note: The figures show the distribution of subsidies around the 150,000 discontinuity, overlayed with the counterfactual distribution (blue line) estimated as in Equation C.2 and using a seventh-degree polynomial. In the panel above, the DV is the number of subsidies in each 100-euro bins, in the panel below, the difference from before/after 2013. The independent variable is each bin in the distribution. We calculate standard errors using a parametric bootstrap procedure.

C.4. Full sample from OpenCoesione

In this section we replicate all the tests from Section 4.5 using the full sample of companies from OpenCoesione.

Figure 69: Full sample OpenCoesione, main (left) Only 2015 treated (right).

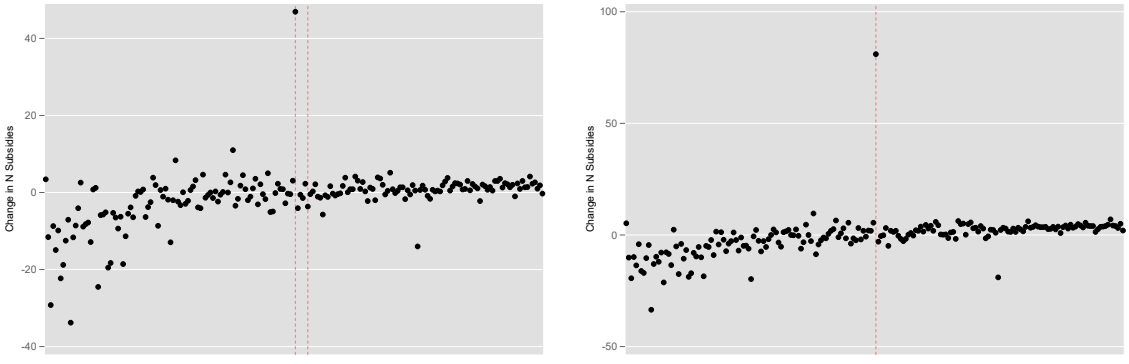


Figure 70: Full sample OpenCoesione, bin size 2,000 (left) and 500 euros (center); placebo for dissolved city councils (right).

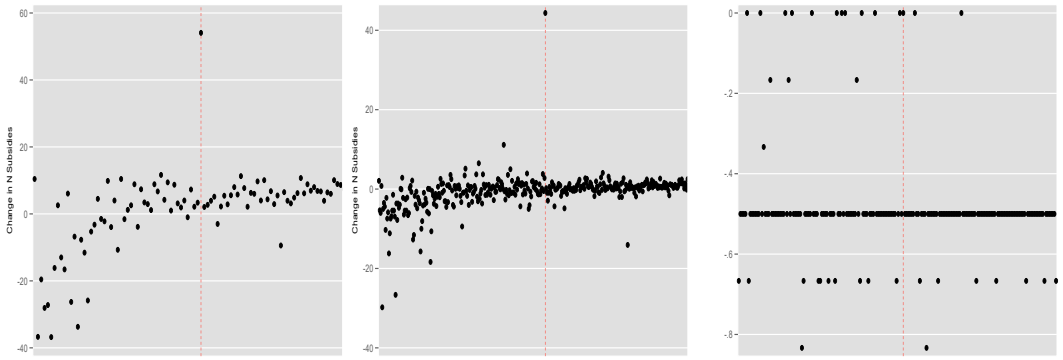
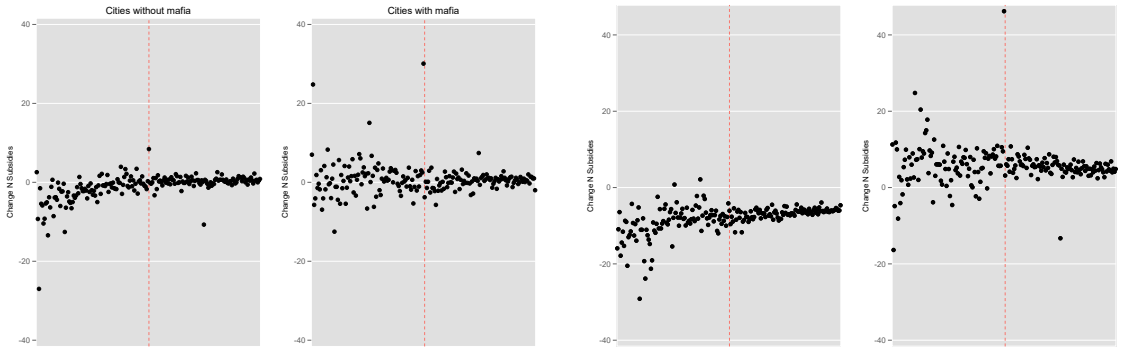


Figure 71: Full sample OpenCoesione, cities without and with mafia (left) and 'Ndrangheta (right).



C.5. Firms characteristics, robustness tests

We present results from robustness tests on our analysis on firms' characteristics. First, we consider the results on balance-sheet outcomes. A recent empirical literature has started investigating the effects of the presence of mafias on the characteristics of firms, providing descriptive evidence on balance sheet outcomes after mafia penetration or in mafia-affected areas. As mentioned in Section 4.6, a consistent finding is on bank debt: firms affected by mafias display lower levels of bank debts, in line with a money laundering explanation in which 'fake debts' used to launder dirty money are more difficult to set up with banks (Transcrime, 2013; Furciniti and Frustagli, 2013). Consistently with this evidence, in our data, firms sorting after 2013 display 514,000 euros lower bank debts and 1,789,000 lower

total debts than other firms (Table 48, Column 1). The literature provides contrasting conclusions about cash and cash ratio (Bianchi et al., 2017; Transcrime, 2013) and return on assets (Bianchi et al., 2017; Mirenda et al., 2017). We find a weakly positive effect on cash ratio, and a null impact on cash and return on assets (Table 48).[1] However, due to the contrasting conclusions provided by this literature, on cash ratio, cash and ROA, we consider these results to be inconclusive.

In Table 49 we present the same analysis on the main firms characteristics repeated comparing the sample just below the threshold to the sample just above it, in the group 150,000–160,000 euros. The group applying for little more than 150,000 euros is made of firms deliberately accepting to undergo the the Antimafia investigation, even when they could avoid it with very limited losses in terms of foregone profits. Therefore, they constitute an ideal control group of firms with no mafia connections. Due to the much smaller sample size (we pass from 9,657 to 500 firms), we have insignificant findings if we consider a specification with the full set of firm–type, city, year and year of activity fixed effects (odd columns in Table 49). However, if we remove fixed effects, we obtain significant and much stronger results (even columns).

[1] We also test the effect on other types of debts, and find inconclusive evidence. Results are available upon request. Note also that the number of observations changes across columns due to missing data in the dependent variables.

Table 48: Subsidies by bin after 2013 – Balance sheet outcomes

	(1) Bank Debt winsorized	(2) Tot Debt winsorized	(3) Cash Ratio	(4) Cash	(5) ROA
Just Below	394.3*	1,405*	-0.00211	-2.579	-2.139
	(121.4)	(469.5)	(0.00173)	(6.640)	(1.169)
Antimafia Law	-58.44	-37.39	0.00197	10.41	0.887
	(50.78)	(195.1)	(0.00270)	(14.09)	(0.724)
JustBelow×Law	-514.3*	-1,789*	0.0185	104.0	-2.254
	(158.5)	(607.1)	(0.0109)	(140.8)	(3.229)
Observations	6,382	6,554	4,683	4,683	6,571
R-squared	0.335	0.428	0.075	0.010	0.053
City FE	Yes	Yes	Yes	Yes	Yes
Institution Type FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Years of Activity	Yes	Yes	Yes	Yes	Yes

Note: The table shows results from estimating Equation 2.4 using different financial outcomes of the companies we study as dependent variables. $BankDebt$ and $TotalDebt$ are continuous variables winsorized at the top 0.1 percentile. $CashRatio$ is the fraction of $Cash$ (a count variable in Column 4) and $TotalAssets$. ROA is the return on asset.

Table 49: Subsidies by bin after 2013 - Just below compared to just above (Robustness)

	(1) Delay	(2) Delay	(3) Prv	(4) Prv	(5) M.Sec	(6) M.Sec	(7) No M.Sec	(8) No M.Sec	(9) 21 year	(10) 2 year	(11) BoD M.	(12) BoD M.
Just Below	-0.0636	-4.312*	0.0691	0.205*	0.0427	-0.0752	-0.137^{+}	0.0702	-0.0148	0.0217	-0.0714	-0.216*
	(0.0656)	(1.477)	(0.0542)	(0.0489)	(0.0656)	(0.0501)	(0.0717)	(0.0614)	(0.0388)	(0.0383)	(0.143)	(0.0926)
Antimafia Law	0.209	-2.444*	-0.160	0.0912	0.198	-0.0138	-0.199	0.122^{+}	0.0298	0.0354	0.421	-0.0191
	(0.199)	(1.151)	(0.176)	(0.0670)	(0.171)	(0.0649)	(0.160)	(0.0736)	(0.133)	(0.0484)	(0.324)	(0.0982)
JustBelow×Law	0.0275	6.606*	-0.177	-0.615*	0.121	0.574*	0.0248	-0.446*	-0.0812	-0.0784	0.141	0.445*
	(0.124)	(1.719)	(0.121)	(0.0927)	(0.128)	(0.0905)	(0.129)	(0.100)	(0.0799)	(0.0654)	(0.197)	(0.139)
Observations	500	490	500	500	499	500	500	500	500	500	237	237
R-squared	0.373	0.025	0.616	0.109	0.533	0.163	0.519	0.054	0.409	0.003	0.548	0.070
City FE	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Institution Type FE	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Year FE	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Years of Activity	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No

Note: The table shows results from estimating Equation 2.4 comparing companies just below with companies just above the 150,000-euro discontinuity. The dummy *JustBelow* in this specification takes value 1 for observations in the range 149-150,000 Euros, value 0 for observations 150,001-160,000 Euros and is set as missing otherwise. *Delay* is a variable equal to the number of months of delay in project completion. *Prv* is a dummy equal to 1 when the company found a private source to co-finance the project. *M.Sec* and *NoM.Sec* are dummies equal to 1 when the company operates in a sector typically infiltrated (or not) by mafias, as defined in Section 4.6. Finally, 2*year* is a dummy equal to 1 if the company was formed less than 2 year ago and *BoDM.* a dummy equal to 1 if the board of director is from a mafia-affected province.

C.6. Circumventing the threshold: figureheads and other strategies

Sorting below the threshold might not be the only game in town. A first alternative way to circumvent the screening process could be to apply for more than one subsidy under 150,000 euros within the same call. However, we do not find any increase in the number of firms receiving more than one subsidy within the same call for values below 150,000 after 2013. The few companies who do apply for multiple subsidies are well–known public firms created by regional governments specifically to attract investments, such as European Funds. It seems therefore possible that, while repackaging might be attempted and firms might be requesting more than one subsidy for less than 150,000 euros, the probability of actually winning more than one subsidy for the same company might be small, excluding large public companies.

A second possibility is that criminal organizations file multiple applications below the threshold using different front firms. Detecting this strategy is more difficult, as we cannot establish which of the firms applying for funds is linked to mafias. As an indirect test of this hypothesis, we check whether the number of companies applying for funds below 150,000 Euros increases more in mafia affected cities after 2013 as criminals might have created new ad-hoc companies to apply for multiple small funds after the Antimafia Information Law is reinforced. However, this does not seem to be the case. The number of new firms is larger before 2013 in mafia affected areas: before 2013, 89 newly created firms apply for funds below the threshold in mafia-affected cities versus 50 in cities without mafia. After 2013, this number is 18 in mafia affected cities and 22 in areas without mafia.[2]

A third strategy is to circumvent police controls by registering the company to trusted figureheads, people who have never been convicted of mafia-related or any other crimes. This allows criminal organizations to conduct legal businesses and access calls for subsidies, and even obtain the Antimafia certificate for funds above the 150,000-euro threshold (Fiandaca, 2007; Savona and Berlusconi, 2015; Savona et al., 2016).

[2] As a complementary test, we also look at whether the same owner creates multiple firms to claim several smaller subsidies below the 150,000 threshold after 2013: we do not find any evidence on this channel.

While figureheads are clearly convenient to use, a trustworthy individual with a clean criminal record who is willing to undergo the risk of being imprisoned for mafia ties might be a rather scarce resource. This is especially true if, as established by the new Antimafia Law, family members undergo the same screening as business owners. The limited availability of this resource allows us to formulate some suggestive hypotheses on the characteristics of the owners in charge of companies circumventing the Antimafia Law through a figurehead.

First, as figureheads are hard to find, we expect that the same resource will be used multiple times, i.e. the same person will be appointed in several positions of the firm. Second, we exploit a demographic feature that is apparently common among figureheads: as explained by a 'Ndràngheta member in a phone-tapped conversation, the figurehead "must be someone in his 60s or 70s"[3]. Older people tend to be employed as figureheads because they are less likely to be screened by the police, they have proven loyalty over time, they are unlikely to be used for other criminal tasks and, if charged, they are more likely to face house arrest rather than jail.

Our data on business owners allows us to run tests to check whether, after the 2013 law change, there is an increase in 'fishy' business owners among firms applying for subsidies *above* the 150,000-euro threshold. In particular, based on the assumption that it would not be worth it to use a figurehead to apply for just over 150,000 euros, we use 160,000 euros as a discontinuity for this test.[4] In Table 50 we test the triple-interaction coefficient *Antimafia Law x Mafia x Above*, which captures the behavior of firms obtaining subsidies above 160,000 euros after 2013 in cities with mafias.

We find that firms in mafia-affected areas applying for more than 160,000 euros after 2013 are more likely to have a higher level of power concentration, i.e. the same person is appointed to many positions of the company board (Column 1). We also show that firms'

[3] http://www.affaritaliani.it/milano/tangenti-21-persone-arrestate in-quattro-regioni-anche-un-ex-magistrato-541211.html?refresh_ce

[4] The results do not depend on this specific choice, and are similar when exploiting other cutoffs above 150,000 euros or when using a continuous variable.

ownership is more likely to be registered to people aged 65 or over (Columns 2–3) only when focusing on old individuals born in regions traditionally affected by mafias (i.e. Sicily, Calabria and Campania) (Column 3). We interpret this set of findings as preliminary evidence that, in areas with a higher mafia presence, criminal organizations might resort to trustworthy figureheads to circumvent the Antimafia certificate and still apply for funds above the 150,000-euro threshold.

C.7. Evidence of subsidies displacement

One last piece of evidence in line with our story comes from observing where the increase in subsidies for 150,000 Euros is coming from in terms of the pre-2013 distribution. If sorting is caused by avoiding the Antimafia Information threshold, we should observe a missing mass in subsidies *above* the threshold after 2013. This trend is difficult to see in Figure 19, where we consider the change in subsidies at each value in the distribution. In this context, in fact, we do not expect to observe a missing mass only right above the threshold, we should rather see an overall decrease in subsidies for value more than 150,000 Euros, as they are all affected by the policy. Since we are not interested in the behavior of any particular bin, but rather we want to capture the overall effect for any value above the threshold and after 2013, we simply consider the effect of the triple interaction *Above* x $AntimafiaLaw$ x $Mafia$ on subsidies released, where *Above* is a dummy equal to 1 for any subsidy above 150,000 euros.

Table 52 reports this specification. Column 1 shows that there is not any lower or higher number of subsidies released above 150,000 after the law strengthening. However, when we consider the triple interaction in Column 2, we find that in mafia areas, this is the case. The negative coefficient of the triple interaction indicates that for each bin above 150,000 euros there are 0.5 less subsidies awarded after 2013 from firms located in areas with mafia presence, a coefficient which is barely insignificant (pvalue=0.12). This analysis is consistent with the hypothesis that the increase in subsidies below 150,000 euros comes from a reduction in funding for larger amounts. In other words, mafia-related companies

Table 50: Characteristics of business owners (alleged figureheads)

	(1) Board Concentration	(2) Age 65+	(3) 65+ from Mafia Region
Antimafia Law	-0.0365	-0.0399	0.0229*
	(0.0198)	(0.0282)	(0.00988)
Mafia	0.0522*	-0.0537*	0.0174*
	(0.0107)	(0.0140)	(0.00371)
Law×Mafia	-0.0980*	-0.0333	-0.0134
	(0.0170)	(0.0228)	(0.00738)
Above	-0.0347*	0.0737*	0.0275*
	(0.0148)	(0.0200)	(0.00546)
Law×Above	0.0331	-0.0697	-0.0251
	(0.0314)	(0.0390)	(0.0151)
Mafia×Above	-0.0486*	-0.0573*	-0.0324*
	(0.0181)	(0.0238)	(0.00674)
Law×Mafia×Above	0.123*	0.0781	0.0396*
	(0.0385)	(0.0484)	(0.0192)
Observations	12,029	12,029	12,029
R-squared	0.423	0.145	0.059
City FE	Yes	Yes	Yes
Institution Type FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
N Projects	Yes	Yes	Yes

Note: The table shows results from a triple-diff estimation of the effects of the $AntimafiaLaw$ (dummy=1 post 2013) in $Mafia$-affected cities (dummy=1) for companies applying *Above* the Antimafia threshold (dummy=1 for funding above 160,000 euros). The dependent variable in Column 1 is the share of positions held by the same person; in Column 2, the dependent variable is a dummy equal to 1 when the owner is more than 65 years old and in Column 3 when the owner is older than 65 and from Sicily, Calabria or Campania, i.e. highly mafia-affected areas.

Table 51: Descriptive statistics, figureheads analysis (database at the firms owner level)

	N	Mean	Std. Dev.	Min	Max
Mafia presence, dummy		0.657	0.475	0.000	1.000
Board composed of same person		0.456	0.368	0.001	1.000
Company owner 65+ years old		0.218	0.413	0.000	1.000
Company owner 65+ years old–mafia area		0.163	0.126	0.000	1.000
Observations	12,073				

have lost potential income in terms of missed subsidies for larger amounts due to the barrier represented by the antimafia screening.

C.8. Optimal threshold choice

The selection of a threshold above which screening for mafia–connection is performed imposes a trade–off for any government willing to fight public fund misappropriation. On the one hand, governments gain from reducing profits made by criminal organizations – both by reducing looting of public resources and by avoiding reinforcing criminal organizations, making it attractive to reduce the threshold to zero. On the other hand, screening imposes costs on the government and lowering the threshold increases the number of subsidies requiring police attention. A natural policy question arising from this trade–off is what would be the optimal threshold to minimize mafia gains and screening costs. In this section, we run a back of the envelope exercise based on estimates from our study and on approximate costs that the Italian government faces to screen more subsidies.

For the purpose of this simulation, we will assume the utility of the State to depend positively on mafia losses and negatively on screening costs ($U_{state} = ((1 - \pi_{mafia}) - costscreening)$). A government might deem it optimal to incur in an economic loss from over screening if they think that misappropriation has larger negative effects than the simple welfare loss caused by the misappropriation of public funds. However, for the purpose of this exercise, we simply consider the net gains and losses from reducing subsidies misappropriation and screening costs.

For each hypothetical threshold value, we calculate the net gains of the state as the difference

Table 52: Evidence of displacement: Change in subsidies above the threshold after 2013 Law

	(1) N subsidies	(2) N subsidies
Above	-6.006*	-2.188*
	(0.633)	(0.244)
Antimafia Law	-0.527	-0.128
	(0.531)	(0.186)
Above×Law	0.540	0.518*
	(0.451)	(0.175)
Mafia		2.711*
		(0.212)
Law×Mafia		-0.271
		(0.299)
Above×Law×Mafia		-0.496
		(0.322)
Observations	1,608	3,216
Number of bins	201	402
Year FE	Yes	Yes

Note: The table displays regression coefficients from a DID model. Differently from Equation 2.1, our main independent variable, *Above*, is a dummy equals to 1 for subsidies above 150,000 euros. The dependent variable is the number of subsidies in each bin from 50,000 to 250,000 euros. $AntimafiaLaw$ is a dummy equal to 1 after 2013, when the new law is strengthening. $Mafia$ is a dummy equal to 1 in cities with a history of mafia presence.

between yearly mafia losses and yearly estimated costs from screening, as summarized in Table 53. For a given threshold (θ), screening costs are equal to the number of subsidies below θ times the cost to screen each subsidy. Calderoni (2012) undertook an exploratory study on this topic, interviewing two large *Prefetture*, one in the North (Milan) and one in the South (Catania). Based on this work, on average one official is in charge of releasing 327 Antimafia Information per year.[5] Based both on Calderoni (2012) and on the law establishing the wage of police officers in Italy[6], the yearly cost of hiring an additional official in charge of the Antimafia Certificate is 30,000 Euros per year. The cost of screening one subsidy is thus estimated at 92 Euros.

We estimate mafia gains as the summation of the gains from sorting at the threshold plus the gains from applying below the threshold. Both these quantities require some assumptions. First, we assume the number of subsidies at θ to be the same that we observe at 150,000 Euros for every bin and multiply this number for the threshold to obtain the gains at θ. Second, we need to make an assumption on the share of subsidies connected to mafia below θ. Based on the 3.8% increase in subsidies at 150,000 after 2013, we assume that this share cannot be larger than 3.8% and we set it at 1%.[7] Mafia gains below the threshold are calculated as the number of subsidies in our sample per year below every θ times this share. Total mafia losses simply correspond to the total mafia gains when there is no screening (i.e. when θ=250,000) minus total mafia gains.[8] Finally, we estimate state gains as the difference between mafia losses and the cost of screening. Using data from our sample, estimated screening costs and assumptions on the mafia-related subsidies, the net utility for the state becomes close to negative when the threshold is set at 4,000 euros. This

[5] According to Calderoni (2012), in Catania the yearly number of Information released is 1,354 per 6 officials, i.e. 225 per person per year. In Milan, the yearly number of Information is 3,858 per 9 people, or 428 Information per official per year. Our benchmark is thus the average of these two.

[6] Wages are established every three years, as regulated by D.L. 1980, n. 312.

[7] We chose a low-bound to account for the possibility that a share of mafia-related companies stop sorting once the threshold is lowered and start using a different strategy to avoid the screening, for example hiring figureheads.

[8] The number of firms sorting below the threshold might be increasing for lower thresholds, as more and more mafia-connected firms get screened. The inclusion of this dynamic would require additional assumptions without substantially affecting our findings.

back of the envelope calculation suggests that reducing the threshold could be optimal even for subsidies of small amounts, close to 4,000 euros. This result crucially depends on the number of subsidies, as a much higher number would change our findings.

Table 53: Simulation for optimal threshold selection

A Thres-hold (θ)	B Unit cost screening	C N subs screened	D Tot screen cost (B*C)	E Mafia subs at θ x year	F Mafia gain at θ (A*E)	G Avg amount below θ	H Mafia-subs below θ	I Mafia gains below θ (G*H)	J Tot Mafia Gains (F+I)	K Tot Mafia Loss (J_{250k}−J)	L State Net Gain (K-D)
250,000	92	0	0.0	23	5,750,000	15,636	333.98	5,222,111	10,972,111	0	0
150,000	92	552	50,642	23	3,450,000	12,729	328.46	4,180,967	7,630,967	3,341,143	3,290,501
100,000	92	1,237	113,486	23	2,300,000	10,335	321.61	3,323,839	5,623,839	5,348,271	5,234,785
50,000	92	2,672	245,137	23	1,150,000	7,502	307.26	2,305,065	3,455,064	7,517,046	7,271,909
25,000	92	4,756	436,330	23	575,000	5,360	286.42	1,535,211	2,110,211	5,520,756	5,084,425
10,000	92	8,756	803,302	23	230,000	3,503	246.42	863,209	1,093,209	4,530,630	3,727,327
5,000	92	13,520	1,240,367	23	115,000	2,654	198.78	525,773	640,773	2,814,291	1,573,924
4,000	92	18,408	1,688,807	23	92,000	2,000	149.90	299,800	391,800	1,718,411	29,603

Note: Column A: Threshold (θ) of the Antimafia Law; Column B: Unit cost of subsidies screening; Column C: Number of subsidies screened at θ; Column D: Total screening cost (B*C); Column E: Number of mafia subsidies right below θ; Column F: Mafia gains from sorting right below θ (A*E); Column G: Average value of subsidies below θ; Column H: Number of mafia subsidies below θ, i.e. 1% of the total number of subsidies below θ; Column I: Mafia gains in the area below θ, H*G; Column J: Total mafia gains (F+I); Column K: Total mafia loss, i.e. the difference in gains between two consecutive thresholds; Column L: State net gain, i.e. mafia total loss (K) - screening costs (D).

BIBLIOGRAPHY

A. Abadie. Semiparametric instrumental variable estimation of treatment response models. *Journal of econometrics*, 113(2):231–263, 2003.

D. Acemoglu, J. A. Robinson, and R. J. Santos. The monopoly of violence: Evidence from colombia. *Journal of the European Economic Association*, 11(suppl_1):5–44, 2013.

D. Acemoglu, G. De Feo, and G. D. De Luca. Weak States: Causes and Consequences of the Sicilian Mafia. *The Review of Economic Studies*, 87(2):537–581, 02 2019. ISSN 0034-6527.

R. Adão, M. Kolesár, and E. Morales. Shift-share designs: Theory and inference. *The Quarterly Journal of Economics*, 134(4):1949–2010, 2019.

A. Alesina, S. Piccolo, and P. Pinotti. Organized crime, violence, and politics. 2016.

A. Alesina, A. Miano, and S. Stantcheva. Immigration and redistribution. Technical report, National Bureau of Economic Research 24733, 2018.

U. Ascoli. *Movimenti migratori in Italia*, volume 96. Il mulino, 1979.

J. Ashworth and B. Heyndels. Reference point effects in local taxation: It all depends on how you look at it. In *Proceedings. Annual Conference on Taxation and Minutes of the Annual Meeting of the National Tax Association*, volume 92, pages 335–341. JSTOR, 1999.

O. Bandiera. Land reform, the market for protection, and the origins of the sicilian mafia: theory and evidence. *Journal of Law, Economics, and Organization*, 19(1):218–244, 2003.

K. Bansak, J. Hainmueller, and D. Hangartner. How economic, humanitarian, and religious concerns shape european attitudes toward asylum seekers. *Science*, 354(6309):217–222, 2016.

K. Bansak, J. Ferwerda, J. Hainmueller, A. Dillon, D. Hangartner, D. Lawrence, and J. Weinstein. Improving refugee integration through data-driven algorithmic assignment. *Science*, 359(6373):325–329, 2018.

S. O. Becker, P. H. Egger, and M. Von Ehrlich. Absorptive capacity and the growth and investment effects of regional transfers: A regression discontinuity design with heterogeneous treatment effects. *American Economic Journal: Economic Policy*, 5(4):29–77, 2013.

B. Bell, F. Fasani, and S. Machin. Crime and immigration: Evidence from large immigrant waves. *Review of Economics and statistics*, 21(3):1278–1290, 2013.

E. Berman, J. N. Shapiro, and J. H. Felter. Can hearts and minds be bought? the economics of counterinsurgency in iraq. *Journal of Political Economy*, 119(4):766–819, 2011.

E. Berwick and F. Christia. State capacity redux: Integrating classical and experimental contributions to an enduring debate. *Annual Review of Political Science*, 21:71–91, 2018.

M. Bianchi, P. Buonanno, and P. Pinotti. Do immigrants cause crime? *Journal of the European Economic Association*, 10(6):1318–1347, 2012.

P. A. Bianchi, A. Marra, D. Masciandaro, and N. Pecchiari. Is it worth having the sopranos on board? corporate governance pollution and organized crime: The case of italy. 2017. URL https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3031747.

C. Blair, G. Grossman, and J. Weinstein. Forced displacement and asylum policy in the developing world. 2020. URL https://cpb-us-w2.wpmucdn.com/web.sas.upenn.edu/dist/7/228/files/2020/01/Forced-Displacement-and-Asylum-Policy-in-the-Developing-World.pdf.

C. Blattman and J. Annan. Can employment reduce lawlessness and rebellion? a field experiment with high-risk men in a fragile state. *American Political Science Review*, 110 (1):1–17, 2016.

C. Blattman, D. P. Green, D. Ortega, and S. Tobón. Place based interventions at scale: The direct and spillover effects of policing and city services on crime. Technical report, National Bureau of Economic Research, 2018. URL https://www.nber.org/papers/w23941.pdf.

C. Bliss and R. D. Tella. Does competition kill corruption? *Journal of political economy*, 105(5):1001–1023, 1997.

K. Borusyak, P. Hull, and X. Jaravel. Quasi-experimental shift-share research designs. Technical report, National Bureau of Economic Research, 2019.

E. Bueno de Mesquita. Rebel tactics. *Journal of Political Economy*, 121(2):323–357, 2013.

P. Buonanno and M. Pazzona. Migrating mafias. *Regional Science and Urban Economics*, 44:75–81, 2014.

P. Buonanno, R. Durante, G. Prarolo, and P. Vanin. Poor institutions, rich mines: Resource curse in the origins of the sicilian mafia. *The Economic Journal*, 125(586):F175–F202, 2015.

P. Buonanno, G. Prarolo, and P. Vanin. Organized crime and electoral outcomes. evidence from sicily at the turn of the xxi century. *European Journal of Political Economy*, 41: 61–74, 2016.

G. Calderón, G. Robles, A. Díaz-Cayeros, and B. Magaloni. The beheading of criminal organizations and the dynamics of violence in mexico. *Journal of Conflict Resolution*, 59 (8):1455–1485, 2015.

F. Calderoni. Where is the mafia in italy? measuring the presence of the mafia across italian provinces. *Global Crime*, 12(1):41–69, 2011.

F. Calderoni. Valutazione del rischio di infiltrazione mafiosa negli appalti pubblici. *Paper session presented at the meeting "Convegno di studio Appalti pubblici e mafia, Grosseto"*, 2012.

F. Calderoni, G. Berlusconi, L. Garofalo, L. Giommoni, and F. Sarno. The italian mafias in the world: A systematic assessment of the mobility of criminal groups. *European Journal of Criminology*, 13(4):413–433, 2016.

S. Caneppele, M. Riccardi, and P. Standridge. Green energy and black economy: mafia investments in the wind power sector in italy. *Crime, Law and Social Change*, 59(3): 319–339, 2013.

M. Caparini. Human trafficking and organized crime. *Trafficking in Human Beings: Learning from Asian and European Experiences (Singapore: Konrad Adenauer Stiftung, East Asian Institute, European Policy Centre, EU Centre in Singapore, 2014)*, 2014.

D. Card. Immigrant inflows, native outflows, and the local labor market impacts of higher immigration. *Journal of Labor Economics*, 19(1):22–64, 2001.

D. Card and G. Peri. Immigration economics by george j. borjas: a review essay. *Journal of Economic Literature*, 54(4):1333–49, 2016.

J. C. Castillo and D. Kronick. The logic of violence in turf war. *American Political Science Review (forthcoming)*, 2020.

M. D. Cattaneo, M. Jansson, and X. Ma. Manipulation testing based on density discontinuity. *The Stata Journal*, 18(1):234–261, 2018.

A. Cisterna. L'agenzia nazionale per i patrimoni di mafia. *Amministrazione e destinazione dei beni confiscati dopo l'entrata in vigore dei regolamenti*, 2012.

D. Cressey. *Theft of the nation: The structure and operations of organized crime in America.* Routledge, 2017.

B. Crost and J. H. Felter. Export crops and civil conflict. *Journal of the European Economic Association*, 2016.

A. Cutrera. *La Mafia ei mafiosi: origini e manifestazioni.* A. Reber, 1900.

R. M. Dancygier. *Immigration and conflict in Europe.* Cambridge University Press, 2010.

G. Daniele and G. Dipoppa. Mafia, elections and violence against politicians. *Journal of Public Economics*, 154:10–33, 2017.

G. Daniele, S. Galletta, and B. Geys. Abandon ship? party brands and politicians' responses to a political scandal. 2018.

G. Daniele, S. Galletta, and B. Geys. Abandon ship? party brands and politicians' responses to a political scandal. *Journal of Public Economics*, 184:104172, 2020.

G. De Feo and G. D. De Luca. Mafia in the ballot box. *American Economic Journal: Economic Policy*, 9(3):134–67, 2017.

M. Deshpande and Y. Li. Who is screened out? application costs and the targeting of disability programs. *American Economic Journal: Economic Policy*, 11(4):213–48, 2019.

M. Di Cataldo and N. Mastrorocco. Organised crime, captured politicians and the allocation of public resources. *Captured Politicians and the Allocation of Public Resources (January 3, 2019)*, 2019.

J. Dickie. Cosa nostra: A history of the sicilian mafia. 2004.

A. Dimico, A. Isopi, and O. Olsson. Origins of the sicilian mafia: The market for lemons. *The Journal of Economic History*, 77(4):1083–1115, 2017.

G. Dipoppa. How criminal organizations expand to strong states: Migrants' exploitation and vote buying in northern italy. *Working Paper*, 2020.

O. Dube and S. Naidu. Bases, bullets, and ballots: The effect of us military aid on political conflict in colombia. *The Journal of Politics*, 77(1):249–267, 2015.

M. Dugato, F. Calderoni, and G. M. Campedelli. Measuring organised crime presence at the municipal level. *Social Indicators Research*, pages 1–25, 2019.

A. Durán-Martínez. *The politics of drug violence: Criminals, cops and politicians in Colombia and Mexico*. Oxford University Press, 2017.

C. Dustmann, K. Vasiljeva, and A. Piil Damm. Refugee migration and electoral outcomes. *The Review of Economic Studies*, 86(5):2035–2091, 2019.

B. European Anti-Fraud Office. Seventeenth report of the european anti-fraud office. 2017. URL https://op.europa.eu/en/publication-detail/-/publication/edca0837-57bf-11e7-a5ca-01aa75ed71a1/language-en/format-PDF.

E. Fantò. *L'impresa a partecipazione mafiosa: economia legale ed economia criminale*, volume 5. edizioni Dedalo, 1999.

J. D. Fearon and D. D. Laitin. Ethnicity, insurgency, and civil war. *American political science review*, 97(1):75–90, 2003.

L. Fergusson, P. Querubin, N. A. Ruiz, and J. F. Vargas. The real winner's curse. *American Journal of Political Science (forthcoming)*, 2020.

G. Fiandaca. *Women and the mafia: Female roles in organized crime structures*, volume 5. Springer Science & Business Media, 2007.

M. G. Findley, D. L. Nielson, and J. Sharman. Causes of noncompliance with international law: A field experiment on anonymous incorporation. *American Journal of Political Science*, 59(1):146–161, 2015.

G. Fofi. *L'immigrazione meridionale a Torino*, volume 117. Feltrinelli, 1964.

G. Furciniti and D. Frustagli. *Le Indagini Economico Patrimoniali nel Contrasto alla Criminalita Organizzata*. Giuffre Editore, 2013.

S. Gagliarducci and T. Nannicini. Do better paid politicians perform better? disentangling incentives from selection. *Journal of the European Economic Association*, 11(2):369–398, 2013.

M. Gamalerio. Not welcome anymore: the effect of electoral incentives on the reception of refugees. 2018.

D. Gambetta. *The Sicilian Mafia: the business of private protection*. Harvard University Press, 1996.

D. Gambetta and P. Reuter. Conspiracy among the many: the mafia in legitimate industries. In *The economic dimensions of crime*, pages 99–120. Springer, 1995.

A. Getmanski, G. Grossman, and A. L. Wright. Border walls and smuggling spillovers. *Quarterly Journal of Political Science*, 2019.

P. Goldsmith-Pinkham, I. Sorkin, and H. Swift. Bartik instruments: What, when, why, and how. Technical report, National Bureau of Economic Research, 2018.

J. A. Goldstone, R. H. Bates, D. L. Epstein, T. R. Gurr, M. B. Lustik, M. G. Marshall, J. Ulfelder, and M. Woodward. A global model for forecasting political instability. *American Journal of Political Science*, 54(1):190–208, 2010.

A. Goodman-Bacon. Difference-in-differences with variation in treatment timing. Technical report, National Bureau of Economic Research, 2018.

R. T. Guerette and K. J. Bowers. Assessing the extent of crime displacement and diffusion of benefits: A review of situational crime prevention evaluations. *Criminology*, 47(4): 1331–1368, 2009.

J. Hainmueller and D. Hangartner. Does direct democracy hurt immigrant minorities? evidence from naturalization decisions in switzerland. *American Journal of Political Science*, 63(3):530–547, 2019.

J. Hainmueller, D. Hangartner, and D. Lawrence. When lives are put on hold: Lengthy

asylum processes decrease employment among refugees. *Science advances*, 2(8):e1600432, 2016.

J. Hainmueller, J. Mummolo, and Y. Xu. How much should we trust estimates from multiplicative interaction models? simple tools to improve empirical practice. *Political Analysis*, 27(2):163–192, 2019.

D. Hangartner, E. Dinas, M. Marbach, K. Matakos, and D. Xefteris. Does exposure to the refugee crisis make natives more hostile? *American Political Science Review*, 113(2): 442–455, 2019.

H. Hegre, T. Ellingsen, S. Gates, and N. Gleditsch. Toward a democratic civil peace? democracy, political change, and civil war, 1816–1992. *American Political Science Review*, 95(1):33-48, 2001.

F. D. Hidalgo and B. Lessing. Endogenous state weakness in violent democracies: paramilitaries at the polls. 2015. URL https://drive.google.com/file/d/1g3-S2zKglk5TxqXw2HE6MO_uIRP8WJ_O/view.

P. B. Hill et al. *The Japanese mafia: Yakuza, law, and the state*. Oxford University Press on Demand, 2003.

A. C. Holland, M. Peters, and T. Sánchez. The dignity of humanitarian migrants: Explaining migrants' destination preferences. 2020.

D. A. Jaeger, J. Ruist, and J. Stuhler. Shift-share instruments and the impact of immigration. Technical report, National Bureau of Economic Research, 2018.

S. D. Johnson, R. T. Guerette, and K. Bowers. Crime displacement: what we know, what we don't know, and what it means for crime reduction. *Journal of Experimental Criminology*, 10(4):549–571, 2014.

D. Kronick. Prosperity and violence in illegal markets. *Journal of Conflict Resolution (forthcoming)*, 2020.

A. M. Lavezzi. Economic structure and vulnerability to organised crime: Evidence from sicily. *Global crime*, 9(3):198–220, 2008.

M. Le Moglie and G. Sorrenti. 'mafia inc.': When godfathers become entrepreneurs. *Mimeo*, 2017. URL https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2958737.

B. Lessing. Counterproductive punishment: How prison gangs undermine state authority. *Rationality and Society*, 29(3):257–297, 2017a.

B. Lessing. *Making Peace in Drug Wars: Crackdowns and Cartels in Latin America*. Cambridge University Press, 2017b.

N. Limodio. Terrorism financing, recruitment and attacks: Evidence from a natural experiment. *Chicago Booth Research Paper*, (32), 2019. URL https://pdfs.semanticscholar.org/5e80/d7e66db06da59f7e5282719d376e0d774e0f.pdf.

J. Lonsky. Gulags, crime, and elite violence: Origins and consequences of the russian mafia. *Working Paper*, 2020.

S. Lupo. *Andreotti, la mafia, la storia d'Italia*, volume 28. Donzelli Editore, 1996.

S. Lupo. *History of the Mafia*. Columbia University Press, 2009.

M. Marbach. The electoral consequences of restricting labor market access for refugees: Evidence from germany. *Working paper*, 2020.

G. Mastrobuoni, F. Fasani, and E. G. Owens. *Does Immigration Increase Crime?* Cambridge University Press, 2019.

L. A. McCarthy. Human trafficking and the new slavery. 2014.

L. Mirenda, S. Mocetti, and L. Rizzica. The real effects of'ndrangheta: firm-level evidence, 2017. URL http://doc989.consiglioveneto.it/oscc/resources/en_Tema_1235_bi.pdf.

J. C. Morse. Blacklists, market enforcement, and the global regime to combat terrorist financing. *International Organization*, 73(3):511–545, 2019.

K. Munshi. Networks in the modern economy: Mexican migrants in the us labor market. *The Quarterly Journal of Economics*, 118(2):549–599, 2003.

M. Pineau and M. Waters. *The integration of immigrants into American society*. National Academies Press, 2016.

P. Pinotti. Clicking on heaven's door: The effect of immigrant legalization on crime. *American Economic Review*, 107(1):138–68, 2017.

P. Pinotti and P. Stanig. Snowing the mafia: A natural experiment. 2016.

K. Polanyi. *The great transformation*. Gollancz, 1945.

M. Prem, A. Rivera, D. Romero, and J. Vargas. Civilian selective targeting: The unintended consequences of partial peace. *Available at SSRN*, 3203065, 2019.

R. D. Putnam, R. Leonardi, and R. Y. Nanetti. *Making democracy work: Civic traditions in modern Italy*. Princeton university press, 1994.

L. W. Reid, H. E. Weiss, R. M. Adelman, and C. Jaret. The immigration–crime relationship: Evidence across us metropolitan areas. *Social science research*, 34(4):757–780, 2005.

N. Sambanis, P. Collier, L. Elliott, H. Hegre, A. Hoeffler, and M. Reynal-Querol. Breaking the conflict trap: Civil war and development policy, 2003.

R. Sánchez De La Sierra. On the origins of the state: Stationary bandits and taxation in eastern congo. *Journal of Political Economy*, 128(1):000–000, 2020.

E. U. Savona and G. Berlusconi. Organized crime infiltration of legitimate businesses in europe: A pilot project in five european countries. *Final Report of Project ARIEL–Assessing the Risk of the Infiltration of Organized Crime in EU MSs Legitimate Economies: a Pilot Project in*, 5, 2015.

E. U. Savona, M. Riccardi, and G. Berlusconi. *Organised crime in European businesses*. Routledge, 2016.

A. Scognamiglio. When the mafia comes to town. *European Journal of Political Economy*, 55:573–590, 2018.

S. Skaperdas. The political economy of organized crime: providing protection when the state does not. *Economics of Governance*, 2(3):173–202, 2001.

D. Skarbek. Governance and prison gangs. *American Political Science Review*, 105(4): 702–716, 2011.

T. Skocpol. *States and Social Revolutions*. Cambridge University Press, 1979.

A. Smith and F. Varese. Payment, protection and punishment: The role of information and reputation in the mafia. *Rationality and Society*, 13(3):349–393, 2001.

P. M. Sniderman, L. Hagendoorn, and A. Hagendoorn. *When ways of life collide: Multiculturalism and its discontents in the Netherlands*. Princeton University Press, 2007.

P. Staniland. Militias, ideology, and the state. *Journal of Conflict Resolution*, 59(5):770–793, 2015.

G. J. Stigler. Economic competition and political competition. *Public Choice*, pages 91–106, 1972.

M. M. Sviatschi. Making a gangster: Exporting us criminal capital to el salvador. 2018.

M. Tabellini. Gifts of the immigrants, woes of the natives: Lessons from the age of mass migration. *The Review of Economic Studies*, 87(1):454–486, 2020a.

M. Tabellini. forthcoming."gifts of the immigrants, woes of the natives: Lessons from the age of mass migration.". *Review of Economic Studies*, 2020b.

M. D. Toft. Territory and war. *Journal of Peace Research*, 51(2):185–198, 2014.

Transcrime. Progetto pon sicurezza 2007–2013: Gli investimenti delle mafie. rapporto linea 1, 2013.

Transcrime. Modelling and mapping the risk of serious and organised crime infiltration in legitimate businesses across european territories and sectors. 2018.

G. Trejo and S. Ley. High-profile criminal violence: why drug cartels murder government officials and party candidates in mexico. *British Journal of Political Science*, pages 1–27, 2017.

G. Van der Schrier, K. Briffa, P. Jones, and T. Osborn. Summer moisture variability across europe. *Journal of Climate*, 19(12):2818–2834, 2006.

F. Varese. How mafias migrate: the case of thendrangheta in northern italy. *Law & Society Review*, 40(2):411–444, 2006.

F. Varese. *Mafias on the move: How organized crime conquers new territories*. Princeton University Press, 2011.

P. Wang. *The Chinese mafia: Organized crime, corruption, and extra-legal protection*. Oxford University Press Oxford, 2017.

J. M. Weinstein. *Inside rebellion: The politics of insurgent violence*. Cambridge University Press, 2006.

D. Weisburd and C. Telep. Spatial displacement and diffusion of crime control benefits revisited: New evidence on why crime doesn't just move around the corner. In *The reasoning criminologist*, pages 142–159. Taylor and Francis, 2013.