Hosting to skim. Organized crime and the reception of asylum seekers in Italy

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Abstract

The paper investigates the link between organized crime and Italy's publicly-funded asylum seekers' reception facilities. We gather detailed municipal-level data on the location of mafia activities and SPRAR-type reception centres, and provide evidence of how the local presence of mafia increases the likelihood of hosting reception facilities. Statistical evidence and in–depth expert interviews suggest that organized crime correlates with less transparent tendering procedures in the set-up of such centres, while hosting activities increase after local governments are infiltrated by mafias. Overall, results underscore the importance of measures aimed at contrasting organised crime, especially at times of 'crises' when public policy is subject to 'states of exception'.

Keywords: organized crime, asylum seekers, reception centres, mafia infiltration, public procurement.

JEL Codes: D73, H57, K42, R23.

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Introduction

In recent years, the world has witnessed an astounding rise in the number of asylum seekers. A growing amount of economic research has assessed the effects of such inflows on receiving countries, exploring their impacts on labour markets, social cohesion, and natives' voting behaviours (inter alia: Dustmann, et. al, 2016; OECD, 2018). This paper offers a complementary perspective, and asks if organized crime exploits the influx of migrants as a 'business opportunity'. More precisely, we focus on Italy, and explore the influence of mafia-type organizations on the geography of SPRAR-type asylum seekers' reception centres (ASRCs) for which detailed municipal-level data is available.

Plausible cases of infiltration by organized crime in the set-up and management of Italian ASRCs have made international headlines (e.g., Financial Times, 2015: The Guardian, 2018; The New York Times, 2017). While judicial investigations are still ongoing, cases reported in the Italian Parliament speak of centres being opened with the involvement of mafia organizations, forcing asylum applicants to live in environments "*uninhabitable and harmful to human rights and dignity*" (Italian Parliament, 2017a p. 74) to allow organized crime to skim the highest margins from the public resources devoted to reception activities. Yet, except for contributions focusing on single case studies (Lunaria, 2015; Martone, 2017; Mete and Sciarrone, 2016), no academic research has systematically explored the local-level link between mafia–like organizations and the reception of asylum seekers.

This paper aims to fill this gap. To do that, we exploit a novel dataset on the detailed location of asylum seekers hosted in SPRAR-type reception centres and on the presence of mafia across Italy's municipalities. We proxy organized crime intensity adopting the novel Index of Mafia Presence developed by Crime & Tech.[1]

We provide evidence of how the municipal presence of mafia is correlated to an increase in the likelihood of hosting a SPRAR centre. To test the robustness of our baseline results, we first adopt a Mahalanobis–distance matching estimator. We then narrow down our geographical focus to Sicily, and explore the origins of the Sicilian mafia. We exploit historical exogenous variation at municipality level to instrument contemporary mafia intensity and confirm our extensive-margin baseline estimates.

To provide evidence on the mechanisms underlying our main findings, we compile a novel dataset on Italy's public procurement contracts awarded for the management of SPRARs. Regression results and in-depth interviews with key informants suggest that the presence of organized crime is correlated to the use of less transparent tendering procedures. While this is not a definitive proof of wrongdoing, a higher-than-average use of direct-award procedures over open-bidding ones is frequently a sign of a deliberate attempt to limit competition and hide irregularities (ANAC, 2016). Furthermore, we adopt a Difference-in-Differences estimator to show that, in regions characterised by strong mafia presence, the link between organized crime and hosting activities becomes significant only after the infiltration of criminal groups into local governments.

Our results speak to three main strands of literature. First, we relate to the literature on the negative effects of 'perverse institutions', such as organised crime, for local and regional policy (Gertler, 2010; Rodríguez-Pose, 2013). Mafia organizations affect a significant proportion of global economic activity, and play a relevant role in shaping the development of many localities and regions around the world. Yet, organized crime has traditionally received limited attention by regional studies scholars, partly because of the difficulties in obtaining timely, reliable, and disaggregated data (Hall, 2010; Hudson, 2014). We aim to contribute to this literature by building on a recent number of empirical studies exploring the spatial

dimension of criminal organizations (cf. Chiodelli, 2018; Ganau and Rodríguez-Pose, 2018). We aim to do so by connecting to the body of work carried out by economists on the effects of criminal organizations. Research in this strand of literature has focused on the distortive impacts of mafia-like organizations on GDP growth (Pinotti, 2015), Foreign Direct Investment inflows (Daniele and Marani, 2011), industrial policies (Barone and Narciso, 2015), local public finance (Di Cataldo and Mastrorocco, 2021); and public procurement practices (Albanese et. al, 2016). Our paper adds to this body of research by suggesting that mafia organizations may have also altered the geography of ASRCs, and exploited the migration crisis in Italy as a new source of illicit profits. Relatedly, our work adds to the qualitative contributions which focus on single case studies of mafia infiltration in the Italian reception system (Martone, 2017; Mete and Sciarrone, 2016) by providing a framework in which those pieces of work can be contextualized. Our findings can contribute to informing our broader knowledge on how criminal organizations around the world may exploit the global peak in asylum seekers' flow for particularistic gains (cf. Gammeltoft-Hansen and Sorensen, 2013).

Second, results contribute to the literature on the geographies of refugees and asylum seekers. The effects of asylum seekers and refugees into hosting societies' labour markets, social cohesion, and natives' voting behaviours have been increasingly analysed by economists and political scientists (inter alia: Dustmann et al., 2016; OECD, 2018). Yet, the attention of regional studies scholars to the phenomenon has been modest. There is of course abundant research on the economic effects of migrants on local and regional development (inter alia: Lissoni, 2018; Parrilli et al., 2017). However, this literature generally tends to explore migration in general, paying less attention to the specific issue of asylum seekers and refugees (in part because of the lack of reliable and disaggregated statistics).

Finally, we relate to the body of work in regional and urban studies that investigates public decision making in 'times of crisis', or following 'special regimes' (Agamben, 2005). For instance, after the significant growth of migrant inflows which followed the Arab uprisings, across many countries hosting activities have been managed under emergency procedures. A 'state of exception' and 'special practices' might have contributed to weakening anti-mafia control procedures (Schultz and Søreide, 2008). Our findings preliminarily support this hypothesis, and suggest that the persistent emergency management of the asylum seekers reception system might have facilitated the episodes of mafia infiltration into hosting activities.

The remainder of the paper is organized as follows. The following section provides background information on reception centres and organized crime in Italy. We then introduce the empirical framework and data sources. The following sections present the results and a list of robustness checks. We then discuss some exploratory evidence on the potential mechanisms driving the results. A final section concludes the paper.

Institutional background

The reception system in Italy

In 2016, a year of high migration inflows to the European Union, approximately 94% of those who reached Europe did it by crossing the Mediterranean Sea. In the same year, Italy received most of the inflows (IOM, 2017). During the years 2013-2016 Italy has indeed been among the top five receiving European countries.[2] In the country, asylum seekers have the right to receive material reception from the moment of their arrival until the decision on their protection status is made (Proietti and Veneri, 2021). To cope with the increase in the number of arrivals (cf. Figure 1), the Italian reception system has consistently increased its capacity,

both in terms of places available and minimum standards of services offered. The regulation has indeed become more and more detailed on issues such as accessibility of reception centres and the minimum services to be provided (Servizio Centrale, 2015).

[Figure 1 about here]

The Italian asylum system was, during the period analysed in this paper (i.e., up to 2016),[3] structured in three phases, each related to different typologies of centres. The first phase involved first rescue, assistance, and identification activities. These were performed in Hotspots and in Centres for First Aid and Assistance (CPSA), which were mainly located in the South and Sicily, where most arrivals occurred. Migrants applying for international protection were then distributed to Regional Hubs and Reception Centres for Asylum Seekers (CARA). Here applicants waited to be offered a place in a centre for the secondary hosting. The secondary hosting is where asylum seekers remained until they receive an answer to their protection request (and for other six months if they obtain a positive answer). The secondary hosting was delivered through ordinary centres called Protection System for Asylum Seekers and Refugees (SPRAR). If there were no available places in Regional Hubs, CARA or SPRAR, asylum seekers were also hosted in Emergency Reception Centres (CAS). This paper focuses on the secondary hosting, which involved the centres in which asylum seekers spent most of the time waiting for an answer to their request of international protection. Among different types of centres delivering the secondary hosting, we focus on the SPRAR system.

The focus on SPRARs may constitute a limitation as, during the peak of the 'migration crisis' these centres would host only a subset of the total number of asylum seekers: in 2016, for example, SPRAR centres hosted only 26.012 beneficiaries, i.e., 21.05% of the total 123.600 asylum applicants.[4] Yet, it is extremely difficult to compile a reliable dataset on the number of people hosted in CAS centres across the years and for the whole of Italy. In absence of data on

'emergency centres' such as CAS, we believe that our analysis can provide an important first step in exploring the links between organised crime and ASRCs.[5]

To set up SPRAR centres, the Ministry of Interior – which was in charge of the overall coordination – periodically issued open calls-for-proposals addressed to local authorities.[6] If interested, the latter were responsible for identifying local NGOs able to provide reception and integration activities. The identification of NGOs was realized in different ways, not always through publicly–advertised calls. Once project proposals (involving a partnership between a local authority and NGOs) were ready, they were submitted for ministerial evaluation.[7]

The amount of asylum seekers hosted in SPRARs was the result of a decisional process involving the local authorities willing to provide the reception, and the central government (Fratesi at al., 2018). The Ministry of Interior usually selected the proposals which offered the highest quality of services at the lowest price, while also actively attempting to distribute asylum seekers homogeneously across the country. During the period of analysis, however, the government was under pressure to find available places and selected most of the municipalities which stepped forward.

Up to 2016, the central government would cover 80% of the reception costs, with the remaining 20% being covered by local administrations, either in cash or in kind (e.g., by providing personnel, real-estate facilities, and services). Since 2016 the share covered by the central government increased to 95%. Municipalities then 'subcontracted' hosting activities to selected NGOs. NGOs were periodically paid by municipalities which, in turn, received resources from the central government. Municipalities hence had economic incentives to participate in the reception system,[8] as centres could be a non-trivial source of income and jobs for the local economy, especially in small municipalities. As an example, during 2014-2016 each SPRAR project involved on average around 22 jobs (Cittalia, 2016).

Organised crime and the reception system

The UN Convention against Transnational Organized Crime defines organized criminal groups as structured organizations of more than two people that are not formed for the immediate commission of a crime. These groups commit crimes aimed at obtaining directly or indirectly financial or other material advantages (Lavorgna and Sergi, 2014). The Italian legislator internalizes such definition, and extends it to identify mafia–type organized criminal groups. According to article 416–bis of the Italian Penal Code, "a criminal organization is of Mafia-type when it is stable and its members use the intimidating power granted by the membership in this association to take advantage of the conditions of subjugation and silence of others (the so called '*omertà*') to commit crimes, or manage or control, either directly or indirectly, economic activities, concessions, authorizations and public contracts".[9]

Recent parliamentary and judicial investigations have uncovered several attempts of mafia infiltration in the management of the asylum reception system.[10] The following excerpt is taken from a report of the Italian Anti-Mafia Investigative Directorate (DIA):

"*The distinctive element of this mafia group is the ability to create stable networks between different actors: criminal groups but also economic and institutional figures through intimidation and corruption. The investigation unveiled how this networked criminal system aimed at obtaining public procurements and the management of services for the community, including the reception of asylum seekers.*" (DIA, 2015a, p.157).

In line with the excerpt, our hypothesis is that, in municipalities where mafia presence is strong, mobsters may have been able to infiltrate municipal councils and influence their decision-making process, shifting upwards a mayor's willingness to apply to host SPRARs, and/or rigging the procurement procedures used by the municipality to select the providers of

ASRC-related services, while also limiting controls or sanctions in the running of the reception activities. The following excerpt comes from an investigation in Sicily: [11]

"Relatives of the public officials that were entitled to control [the reception activity] were hired in the cooperatives and associations managing the reception centres creating a mixture between those who should have been monitored and those monitoring". [In exchange,] *"public officials favoured the procedures for these associations, gave early notice about the possibility of controls and inspections in the centres and avoided to implement sanctions".*

To conclude, there is strong anecdotal evidence of potential links between organized crime and asylum seekers' reception activities. The remainder of the paper will empirically test the statistical strength of such relationship.

Empirical analysis

Methodology

The following section defines the empirical framework and outlines our baseline identification strategy, which is based on a sequential two-steps model. First, equation (1) explores via Probit if a higher presence of mafia correlates with a higher municipal likelihood of being involved in the SPRAR system (extensive margin). Equation (2) then aims to identify via a zero-truncated Poisson estimator the link between organized crime and the number of asylum seekers accommodated in those municipalities involved in SPRAR centres (intensive margin).

$$P_r\,(H)_i = \ \Phi\,(\,\alpha\, + \,\beta m_i + \,\boldsymbol{X'_i}\delta\,) \tag{1}$$

$$AS_i = \alpha + \beta m_i + X'_i \delta + \varepsilon_i \qquad\qquad \text{if } (H)_i = 1 \qquad (2)$$

where P_r is a dummy variable taking the value 1 if municipality i was involved in the SPRAR system $(H)_i$, 0 otherwise. By contrast, AS_i is the number of asylum seekers hosted in each municipality. In our main specifications, we measure our dependent variables in 2016. This is done because we want to analyse a year characterized by a high influx of migrants (cf. Figure 1). Besides, our mafia measure refers to the period 2000-15 and measuring the outcomes in a subsequent year helps mitigating the risks of reverse causality.

m_i is our key variable of interest, and measures the intensity of mafia activities at the municipal level.

X'_i is a vector of controls included to account for heterogeneity across municipalities. We first account for key geographical characteristics. Along with NUTS2 regional fixed-effects (FEs), we include: municipal population, as it is likely to affect the local capacity to host migrants; a dummy variable indicating if the municipality hosts a port, since most asylum seekers reach Italy by boat (cf. IOM, 2018). Socioeconomic disparities may also drive the local propensity to host. We hence include: unemployment share, as opening a reception centre for asylum seekers might create job opportunities in the local labour market; the share of people employed in agriculture, as this sector might both be a possible threat to the integration of asylum seekers offering them the possibility to earn money working in a low-skilled grey market which might exploit their precarious situation or, on the contrary, might guarantee an opportunity to promote sustainable integration forms for refugees and asylum seekers even in rural municipalities (Leogrande, 2016; Perlik and Membretti, 2018); average per-capita income, since economic disparities may influence the local propensity to host; the share of people aged 70 and older, population growth between 2001 and 2011, and the share of people with foreign nationality, because the extent to which local communities are ageing, shrinking,

or already exposed to foreigners might influence the attitude towards asylum seekers (Aldén et.al, 2015; Proietti, 2014). Finally, we control for social capital, since recent research has shown its strong link with reception activities (Fratesi et al., 2018). The variable is proxied by voter turnout in national elections. Equally, we add a categorical variable identifying the political party of the ruling mayor, assuming that left-wing parties may be more prone to host immigrants. ε is the error term.

Data sources

There are inherent difficulties in measuring the presence of organized crime. Early papers have proxied criminal organization penetration at the local level with violent crimes (Pinotti, 2015; Daniele and Marani, 2011). Scholars have further exploited information on mafia type associations identified by Italy's military police (De Feo, De Luca, 2017) or by judiciary investigations (Barone and Narciso, 2015). More recent pieces of work have acknowledged how mafias have evolved from systems primarily based on 'crude' violence to more sophisticated 'extortive' business structures deeply infiltrated into the regular economy. This is particularly true in areas of new expansion beyond their traditional strongholds, e.g., Central and Northern Italy, and Europe.

We combine these previous approaches, and exploit the novel Index of Mafia Presence developed by Crime & Tech, which has the advantage of providing detailed local level information for all of Italy's nearly 8000 municipalities. The index, which ranges from 0 to 100, is constructed considering (cf. Calderoni, 2011; Transcrime, 2013): real estate properties and companies confiscated from organized crime; city councils dissolved for mafia infiltration; mafia murders; 'Article 416–bis' mafia crimes; and, finally, the presence of mafia groups

reported by Italy's Anti-Mafia Investigative Directorate (DIA) and the National Anti-Mafia and Counter-Terrorism Directorate (DNA).

By contrast, the dataset on the geographical distribution of asylum seekers hosted in SPRAR centres was assembled from data released by Cittalia (2009, 2010) and ANCI et al. (2014-2016). We limit the analysis to SPRAR centres opened under the initiative of individual municipalities, excluding centres opened under the leadership of Provinces and inter-municipal cooperation bodies, since it was not possible to univocally attribute them to individual municipalities.[12]

Finally, data on covariates derive from Italy's Ministries of Interior, and of Economy and Finance, OpenRegio, and the Italian Institute for Statistics (ISTAT). Appendix Tables A.1 and A.2 respectively provide a detailed description of the variables used in the analysis, and key summary statistics. Our final sample corresponds to the almost 6.400 municipalities for which we have all the covariates. Figure 2 shows the geographical distribution of the Mafia Index, as well as the municipalities which were involved in the SPRAR system in 2016.

[Figure 2 about here]

Results

Table 1 presents the main results. Models (1) to (4) report the Probit outputs on the link between mafia and the likelihood of hosting SPRARs, while models (5) to (8) report the zero-truncated Poisson results on the intensive margins, i.e., the number of people hosted in municipalities involved in the SPRAR system. All standard errors are robust and clustered at the level of Italy's 110 provinces.

[Table 1 about here]

Columns one and five present the baseline specifications while, in columns two and six, we add our sets of geographical controls. Finally, in columns three and seven we also include political and economic controls (columns four and eight report the covariates without the mafia variable). Our preferred specifications are columns three and seven. As expected, conditioning on covariates reduces the magnitude of the mafia coefficient. Yet, the table provides evidence of a robust and statistically significant cross-sectional link between organized crime intensity and hosting activities. The mafia index is always significant and positive. (Appendix Figure B.1 shows the predicted outcomes from models three and seven calculated for different mafia levels holding other variables constant at their means.)[13]

Robustness analysis

In this section, we test the robustness of our estimates. As a first check, we add municipal debt as an additional control.[14] Municipalities with higher debt, might be less prone to host asylum seekers, as financing constraints may impede them to co-finance reception activities. Yet, the results, reported in Appendix Table A.3, show that municipal debt is never significant, and that the coefficients for mafia remain stable when adding this additional control.

Second, we re-estimate the models of Table 1 replacing our 2016 dependent variables with the number of SPRARs/number of people hosted in 2010,[15] the earliest year for which we managed to find data. The results, reported in Appendix Table A.4, suggest that, controlling for covariates, the mafia index coefficient reduces in magnitude and becomes statistically insignificant, suggesting that before the start of the migration crisis there were no systematic links between mafia presence and hosting activities.[16]

Third, the measure of mafia intensity may suffer from omitted-variable bias, or from measurement errors.[17] To minimise the risks posed by these potential sources of endogeneity, we first adopt a Mahalanobis-distance matching estimator (MDM). Appendix A.5 provides more technical details about the estimator. The results which, for reason of space, are reported in Appendix Table A.6, confirm the main outputs of Table 1. (MDM balancing diagnostics are reported in Appendices A.7 and A.8.)

A potential weakness of MDM estimates is that the matching can only be based on observable covariates. We hence also exploit an alternative approach and instrument current mafia intensity. To do so, we restrict our focus on Sicily, for which we have robust exogenous historical predictors of mafia intensity. Buonanno et al. (2015) and Dimico et al. (2017) respectively show that Sulphur mines and soil suitability for citrus production are significant predictors of the origins of mafia. Following their footpath, we exploit 19th Century data on the presence of Sulphur mines, and on the climate/soil suitability for the cultivation of citrus fruits[18] to instrument contemporary mafia presence. (For reasons of space the detailed explanation of our identification strategy is provided in Appendix A.9.) Table 2 presents the results.

[Table 2 about here]

Columns nine to 11 estimate the extensive margin outputs, while models 12 to 14 estimate the intensive margin outputs.[19] The instruments are weak in columns 12-14, and the intensive margin results should be interpreted with care. Nevertheless, the table confirms how local mafia intensity is a robust predictor of the likelihood of being involved in asylum reception activities. As expected, and in line with the results found by Barone and Narciso (2015) in a similar setting, coefficients from columns nine to 11 show a large upward revision compared to baseline estimates.[20]

Interpreting the results

This section presents further insights on the interpretation of our main results, which may be explained according to two competing stories.

Two competing stories

According to the first scenario, the cross-sectional link between mafia levels and reception centres may be explained not by mafia infiltration into municipalities – as we argue – but by an active policy of the central government to allocate more centres (and send more migrants) in places where mafia is more present.

For example, the central government may intentionally select mafia-ridden municipalities because it may aim to combat criminal organisations by boosting local employment opportunities. Yet, in most cases centres were opened under an extreme urgency to find available places for incoming asylum seekers. The Ministry of Interior did not really select among alternative locations, but allocated centres to most of the municipalities which stepped forward. As the former Secretary General of the Italian Parliament's Commission enquiring about violations in the management of the reception system explains: "*every municipality that participated in the SPRARs' tenders, more or less won it, so everybody tried to engage with this SPRAR.*" (Interviewee n.4)

Furthermore, the presence of mafia has stimulated, especially since the 1990s, the birth and diffusion of non-governmental organisations (NGOs) meant to fight criminal organisations which, in turn, may have become involved in hosting activities. This may be particularly relevant vis-à-vis a policy implemented since 2010 by the national government, according to

which private properties confiscated by the judiciary for mafia-related crimes are reassigned for social purposes. To this aim, we re-estimate our baseline models additionally controlling for the number of NGOs and for properties seized to mafia groups and reallocated to NGOs. We are able to distinguish between seized properties reallocated for any type of purpose and those exclusively reallocated for social purposes such as hosting activities. We aim at understanding if introducing these covariates affects the mafia index coefficient.

[Table 3 about here]

Results shows that this is not the case: the mafia index is hardly influenced by the additional controls, both when replicating the baseline analysis in Table 3, and when replicating the instrumental variable strategy (results reported in Appendix A.11).

Potential mechanisms

In this section we discuss the second, alternative scenario, and provide exploratory evidence on the mechanisms through which mafia organisations may have influenced the reception system.

If the robust cross-sectional link between organised crime and hosting activities is truly explained by criminal influence on local decision making, we would expect such link to primarily strengthen in cases of confirmed mafia infiltrations into local government. To test this hypothesis, we follow the Difference-in-Differences (DiD) approach of Di Cataldo and Mastrorocco (2021). In particular, we exploit variation caused by the judicial enforcement of national Law 164/1991 on the forced dissolution of municipal governments upon evidence of collusion between mafias and local elected officials. We exploit the time-/geographically-heterogeneous effect of the law to detect cases of criminal infiltration, and compare municipalities with/without infiltration before/after such infiltration occurs. We focus on the

four southern regions of Campania, Calabria, Apulia and Sicily, which, during the years 2010-16 covered by the analysis, accounted for 92.4% of all dissolutions (73 out of 79 total cases). Appendix A.12 describes in detail our DiD design and the estimating equation. Table 4 presents the results, and confirms how only after the infiltration municipalities become significantly more likely to be involved in hosting activities, while also experiencing a significant increase in the average number of individuals hosted.

[Table 4 about here]

The pre-treatment parallel-trend assumption is tested via an event-study approach, whose results are reported in Figure 3. The two graphs plot the year dummy variables for the years prior and after the presumed infiltration, that is, the election of a local government which is then dissolved. Prior to election years treated and control units experience very similar trends. By contrast, after the election, infiltrated municipalities start experiencing an increase in the involvement in hosting activities. As expected, the effects are particularly visible in the later years of infiltrated political mandates: time is needed to bid for project and to then set up centres, and any effect on hosting activities attributable to criminal infiltration may require some years to materialise.

[Figure 3 about here]

To further explore the possible link between organised crime and reception activities, we conducted seven in–depth elite interviews with key national stakeholders. These were conducted between March-September 2018 and lasted on average 45 minutes. Three interviewees preferred to remain anonymous. Appendix A.13 provides the list of the experts who accepted to disclose their identity, and whose quotes will be used in the analysis.

Interviewee n.4 highlights how when "*there is an infiltration of criminal organizations in the reception system, [this] is linked to the procurement system.*" This may be done to attract public resources. As anticipated, cases reported in the Italian Parliament speak of centres being opened with the involvement of mafia organizations, forcing asylum applicants to live in environments "*uninhabitable and harmful to human rights and dignity*" (Italian Parliament, 2017a p. 74) to allow organized crime skim the highest margins from the public resources devoted to reception activities, for example by "*overbilling food items while proving poor products*" (DIA, 2018, p. 54).

The OECD indeed identifies public procurements as one of the activities most vulnerable to corruption and criminal infiltration (OECD, 2016). Infiltration may occur at any step of the procurement process: during the pre-tendering phase, during the contractors' selection, and after the award of the contract (Dorn, et. al, 2008; OECD, 2016). To shed light on these issues (and on the first phase in particular), we explore the cross-sectional relationship between local mafia intensity and different types of procurement procedures adopted by local governments to award reception contracts. ANAC, Italy's National Agency against Corruption, underline how a higher-than-average use of direct award procedures over open tenders frequently suggests the deliberate limitation of competition and potential irregularities in public tendering (Prime Ministry and ANAC, 2014). The same agency has further underlined irregularities in the asylum reception system:

"*We highlight several critical issues that have emerged during the institutional activity of supervision of the reception system. For instance, contracts for the reception of asylum seekers have been often granted [...] through procedures characterized by inadequate publicity and failure to comply with the deadlines for the submission of tenders [...]*

Furthermore, it has emerged that tenders didn't respect their obligations in term of transparency." (ANAC, 2017).

As the following excerpt suggests for the case of Sicily:

"*Cosa Nostra [the Sicilian mafia, A./N.] can do that [the infiltration into procurement] with a cooperative managed by its own network of acquaintances. For example, in a small town when there is a tender for SPRAR, they might advise their brother-in-law to participate, as they have good chances of obtaining the procurement because a person – that is the part of the family – is also a counsellor for the municipality.*" (Interviewee n.4).

Another interviewee suggests how:

"*exceptions might have been registered, for example, for the assignments of reception contracts to social cooperatives. [...] We must be very careful to judge this phenomenon, because there are so many forms of cooperation, obviously both virtuous cooperation and non-virtuous cooperation, [yet] these exceptions might have been the key for infiltration [... e.g.] the use of alternative mechanisms to assign public procurement contracts.*" (Interviewee n.1).

In detail, the migration 'crisis' made controls less stringent because of the urgency to find available places. Indeed: "*every municipality that participated in SPRAR tenders, more or less won it, so everybody tried to engage with this SPRAR.*" (Interviewee n.4). As the following excerpt suggests, not all of them were competent and prepared:

"*you can find centres in which there are competent workers involved, these centres might also have some difficulties, but you understand that they know the sector in which they are working. On the contrary, there are providers that improvised their activity, for various reasons, for humanitarian ones but also for third reasons. These centres are the most critical,*

because among them you can find those who need information – and you can help them to improve – but you can also find those who have seen the business." (Interviewee 2).

One of the interviewees further suggests how:

"[the] *SPRAR [system] is characterized by low numbers of people per reception centre, as a consequence these centres might more easily escape the control of anti-Mafia authorities as the centres' managers might be ordinary citizens, or small entrepreneurs, while the speculative presence of organized crime might be just behind them and might guarantee the 'social peace in these contexts', avoiding the presence of migrants to create problems.*" (Interviewee n.1).

Following these insights, we aim to assess the correlation between mafia infiltration and the use of direct-award procurement over the total number of tenders. While this indicator is not a definitive proof of an illegitimate procedure, our hypothesis is that criminal organizations may be able to distort the process towards closed-bidding procedures, where rigging is less noticeable than in open-bidding tenders (ANAC, 2016). We hence exploit a unique dataset on public procurement assembled by Openpolis[21] on information from ANAC. The dataset includes all the contracts issued by Italian municipalities and regarding asylum seekers' reception centres of an amount greater than 40,000 euros.[22]

We estimate the following equation:

$$P_r(TP) = \Phi(\alpha + \beta m_i + X'_i \delta) \tag{3}$$

where $P_r(TP)$ is a dummy variable taking the value 1 if, during the 2012-2016 period,[23] municipality i made a higher-than-average use of direct-award procurement to establish reception initiatives, and 0 otherwise. Alternatively, we also run the analysis considering

tenders awarded via open procedures. (There are nine different types of procedures, so direct awards and open tenders are not mutually exclusive.)

m_i is our measure of mafia activities at the municipal level.

X'_i is a vector of controls, which includes: the population and population density of each municipality, the number of not–for–profit organizations, the political orientation of the mayor and the average amount of resources involved in the procurements in that municipality. The first variables are proxies for municipal size and capacity. These variables are expected to be inversely related with the frequency of direct awards (Glock, and Broens, 2013). The number of NGOs over the total population represents the number of potential competitors in the context of open procedures (Fazekas, et. al, 2016). The money amount involved in the procurement is a relevant predictor of the procedure adopted (ANAC, 2016). The political orientation of the local council has a less straightforward effect. However, the literature has demonstrated that some political party might have a lower incentive to fight mafias than others (De Feo and De Luca, 2017). We also include macro-regional FEs. We estimate regression (3) via robust Probit.

[Table 5 about here]

The outputs, presented in Table 5 provide clear and robust evidence of how mafia presence is positively correlated with a higher use of direct awards and, conversely, negatively linked to the use of open tender procedures. Furthermore, not–for–profit organizations (social cooperatives in particular) can have access to a simplified procurement discipline and can be directly awarded tenders whose amount is below €750,000. If this threshold is overcome, public authorities have the obligation to use open tenders and to give public visibility to the procedures (ANAC, 2017). Interestingly, coefficients are also significant when considering the

subsamples of tenders whose amount is above €750,000, to which open-bidding procedures should be strictly applied (even-numbered columns).

We do not have enough observations to restrict the samples to Sicily and exploit the instrumental variable strategy used earlier. Caution is hence needed in interpreting these results in a causal way. Nevertheless, Table 5 provides at least robust exploratory evidence of how, in municipalities plagued by higher mafia intensity, reception contracts are significantly more likely to be assigned through direct awards, while the opposite is true for open procedures. For example, results from the most stringent samples (columns 18 and 22) respectively suggest how a 1-point increase in the mafia index is correlated to an increase of 2.74% in the odds of using direct-award procedures and a decrease of 1.74% in the odds of adopting open-bidding procedures. (Appendix Figure B.3 plots the predicted outcomes from models 18 and 22 calculated for different mafia levels holding other variables constant at their means.)

Conclusions

The current paper aimed to explore the link between mafia organisations and asylum seekers' reception centres in Italy focusing, in particular, on SPRAR centres for which detailed municipal-level data is available. To minimise issues of endogeneity, we complement the baseline Probit and Poisson estimates with matching and instrumental variable estimators. (Our identification strategies minimise the likely risks of endogeneity, but we encourage future studies to address this potentially relevant issue with further empirical approaches.) Overall, we find that higher local mafia presence is strongly correlated to the municipal likelihood of being involved in hosting at least a centre. Intensive margin results on the link between

organised crime and number of people hosted suggest a similar pattern, but outputs are not always significant.

We then exploit the variation caused by the enforcement of national Law 164/1991 on the forced dissolution of municipal governments upon evidence of mafia infiltration into local government, and compare in a Diff-in-Diffs setting municipalities with/without infiltration before/after such collusion between criminal groups and elected officials occurs. The results highlight statistically-significant patterns of increased extensive and intensive involvement in hosting activities only after infiltration.

Furthermore, we analyse a novel dataset on Italy's public procurement contracts awarded for the management of asylum seekers' centres. Exploratory, cross-sectional evidence suggests that the presence of organized crime is robustly correlated to the use of direct awards over open tender procedures. Such robust correlations are not a definitive proof of illegitimate procedures. Yet, a higher-than-average use of direct awards might suggest attempts to limit competition and hide irregularities. These findings are confirmed by in-depth, elite interviews with key informants.

Our findings contribute to the growing literature interested in understanding the geographies of organized crime (Hall, 2010; Hudson, 2014) and its socioeconomic effects (Chiodelli, 2018; Ganau and Rodríguez-Pose, 2018). The results provide a few potential areas for future work, which may explore the institutional conditions and micro-mechanisms which allow criminal infiltration to happen. This could be achieved through the selection of qualitative, more in-depth methods. Alternatively, future research could investigate the links between mafias and other types of reception centres, or between organised crime and immigration beyond Italy e.g., in contexts such as Mexico and the US.

Overall, the results have direct implications for the current policy debate on how to combat mafia organizations. In Italy, public authorities are on the one hand increasingly aware of the risk of infiltration by organized crime into the reception system and are trying to limit it.[24] On the other hand, however, the former Italian government and Minister of Interior introduced in 2018 legislative changes directed towards increasing the threshold under which it is possible to directly award public contracts, by waiving measures from the public procurement code.[25] This was done against the negative opinion expressed by many experts involved in combatting organised crime.[26] While our analysis on public tenders is exploratory and future work should validate it with more advanced causal inference tools, our results preliminarily suggest that such policy change may be significantly detrimental to combatting potential mafia infiltrations into the current reception system. More broadly, our findings underscore the importance of maintaining an active public policy stance to fight organised crime. While this paper relates to the case of Italy, its implications are potentially broader, as mafia organizations have reached a global scale and affect a significant proportion of the world economic activity.

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[1] www.crimetec.it.

[2] https://ec.europa.eu/eurostat/web/asylum-and-managed-migration/data/database, accessed in June 2020.

[3] The Italian Ministry of Interior's Decree dated 10 August 2016 introduced some relevant changes in the procurement strategy.

[4] https://www.sprar.it/pubblicazioni/atlante-sprar-2016, accessed on 3/12/2019. In absence of any other viable solution, we aim to provide novel insights and set the stage for future research on other types of reception centre systems.

[5] It is important to stress that SPRAR and CAS centres operate in very different ways. For instance, while the availability to host a SPRAR comes bottom-up from municipalities, the location of CAS centres is decided in a more top-down fashion by the central government and its decentred provincial branches. Besides, while SPRARs can only be run by NGOs, CAS can also see the involvement of for-profit counterparts. Hence, possible cases of mafia infiltration into the CAS system would plausibly follow significantly different channels than those explored in this paper. For example, the criminal infiltration may occur not at the municipal level, as we claim here, but during the procurement procedures issued by Provinces.

[6] Cittalia, cooperates with ANCI, in the management of Servizio Centrale for the improvement of the information system concerning the SPRAR system especially in the period 2014-2016.

[7] Municipalities could also select - or replace - NGOs after projects had been allocated by the Ministry.

[8] Municipalities joining the SPRAR system are also potentially exempted from hosting other types of ASRCs which central government Prefects may otherwise impose upon them.

[9] http://www.camera.it/_bicamerali/leg15/commbicantimafia/files/pdf/Art_416bis.pdf, accessed on 18 December 2018. While historically rooted in the South – notably in the regions of Sicily, Calabria, Campania, and Puglia – after the second world war mafias have significantly spread to other parts of Italy and Europe.

[10] It is important to stress that these investigations involved CAS rather than SPRAR centres. These cases are mentioned by: the minute of the Parliamentary Commission on mafia and other criminal organizations (Italian Parliament, 2017b); the reports of the Parliamentary Commission on asylum seekers' reception, identification and expulsion system (Italian Parliament, 2017a and 2016); the 2015 report by Cittalia (ANCI, et al., 2015); the Minute of the parliamentary hearing of the president of the National Authority Against Corruption (ANAC, 2017 and Italian Parliament, 2015) and many DIA reports (e.g. DIA, 2015a and b).

[11] OCC n. 8847/17 RGNR e 2288/18 RG GIP (DIA, 2018, p. 110).

[12] In so doing, we are able to retain 88.4% of SPRAR projects (source: Cittalia, 2016).

[13] Results also suggest that the propensity to host asylum seekers is positively linked to population size and to the presence of non-native residents, while municipalities experiencing demographic shrinking also tend to host more frequently. This is coherent with a situation where the municipalities most prone to host are either big and diverse cities, which have higher capacity, or shrinking places that need to mitigate depopulation, ageing and the decline in working age population (Perlik & Membretti, 2018). Similarly, compared to right-wing administrations (the reference category) which are historically less positive about immigration, left-wing ones tend to be more involved in providing shelter. The latter variables are insignificant in the Poisson results which, nevertheless, provide robust evidence of a link between mafia intensity and the number of asylum seekers hosted.

[14] The variable is only available for a subset of municipalities, and this is the reason why we exclude it from the main analysis.

[15] Precisely, the data refers to the period 2009/10, as we are unable to distinguish between the two years.

[16] As a matter of fact, before 2014 the influx of asylum seekers reaching Italy was very modest, while reception centres were much less geographically spread than today.

[17] Underreporting may for example be significantly higher in mafia-ridden municipalities. Similarly, while we hypothesise that mafia presence in municipality i affects local likelihood of hosting ASRCs in the same municipality, it is also plausible that criminal groups may infiltrate adjacent municipalities where their presence is not measured. While in the first case the direction of the bias is unclear, potential measurement errors would imply that our estimates are downward biased.

[18] FAO-GAEZ dataset, http://www.fao.org/nr/gaez/en/, accessed in September 2020.

[19] The lower part of Table 2 reports the Kleibergen-Paap F-statistic, as well as the Hansen J-test of overidentifying restrictions. The J test does not reject the validity of the excluded instruments. The robust Kleibergen-Paap F-tests for models nine to 11 suggest that the excluded instruments are satisfactorily significant, while models 12 to 14 are weakly identified. Even in models nine to 11, however, first stage F-

tests are rather low. As a robustness check, we replicate the outputs of Table 2 adopting alternative IV estimators less sensitive to weak instruments. Results are reported in Appendix A.10.

[20] It is important to stress that results from Table 2 reports *local* ATE (LATE) effects for Sicily, one of Italy's regions most plagued my mafia. Hence, while their internal validity is stronger compared to outputs in Table 1, like any LATE their external validity vis-à-vis the rest of the country may be more limited.

[21] https://www.openpolis.it.

[22] The dataset includes all the contracts of an amount of resources greater than €40,000 because for smaller amounts, the legislation always allows public administrations to directly award contracts both if the contractors is profit or not-for-profit. Excluding tenders of less than €40,000 should not reasonably induce biases. The cost of the reception service is 35 euros per person per day, with contracts lasting a minimum of 730 days (until 2016, SPRAR tenders were in fact pluriannual), that is, at least €25.550 per person. It is not reasonable to think that municipalities organize SPRAR tenders to host less than 2 people – whose amount would already be €51,000, that is, above the €40,000 threshold.

[23] We extend our time span as, otherwise, there would be insufficient observations to run the statistical analysis.

[24] Examples of risk reduction initiatives are the publication by ANAC of guidelines for the tendering of reception centres. Similarly, procurement tenders are increasingly divided in contract lots, where activities are divided per typologies and each is assigned through a specific tender. Another initiative promoted by the Ministry of Interior (through the project MIRECO) is the realization of guidelines for the monitoring and accreditation of the whole first and second reception systems, taking also into account feedbacks by migrants hosted.

[25] Budget Law (Legge di Bilancio) 2019, Article 1, comma 912.

[26] These include ANAC and members of the Italian Parliamentary Commission on mafia and other criminal organizations.

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Disclosure statement

No potential conflict of interest was reported by the authors.

Consent to publish identifiable information

All interviewees cited in the analysis provided informed written consent to be included in the manuscript with their identifying details.

Data availability statement

The data that support the findings of this study are partly available on request, and partly subject to commercial third-party restrictions. In particular, data on asylum seekers' reception centres, on mafia infiltrations, and on all controls are available from the corresponding author upon request. By contrast, data on the Index of Mafia Presence is subject to commercial restrictions by Crime & Tech. The authors are available to share regression codes and to arrange a zoom call to replicate results in real time.

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Tables

Table 1. Mafia intensity and the likelihood of hosting SPRAR centres (models 1 to 4) or the number of asylum seekers hosted in municipalities involved in reception activities (models 5 to 8): Robust Probit and zero-truncated Poisson estimates.

Dep. var.:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		Likelihood of hosting SPRARs				Nr. of people hosted		
		Probit				Zero-truncated Poisson		
Mafia	0.0257***	0.0079**	0.0091**		0.0171**	0.0084***	0.0067**	
	(0.0026)	(0.0033)	(0.0037)		(0.0080)	(0.0028)	(0.0032)	
Ports		-0.5842	-0.5565	-0.5918		0.1166	-0.1001	-0.0940
		(0.7790)	(0.7760)	(0.7694)		(0.1575)	(0.1677)	(0.1726)
Population		0.0307***	0.0265***	0.0280***		0.0017***	0.0015***	0.0016***
		(0.0023)	(0.0024)	(0.0024)		(0.0001)	(0.0001)	(0.0001)
Ruggedness		-0.0097	-0.0267	-0.0296		-0.0933*	-0.0265	-0.0323
		(0.0433)	(0.0501)	(0.0511)		(0.0536)	(0.0581)	(0.0585)
Unemployment			0.3592	0.4401			0.6007	0.8169
			(0.9807)	(1.0065)			(0.8484)	(0.8449)
Avg. income			0.0191	0.0225			0.0140	0.0207
			(0.0141)	(0.0138)			(0.0271)	(0.0252)
Foreigners			1.5502	1.4585			3.8360**	3.9888***
			(1.0181)	(0.9539)			(1.4910)	(1.4599)
Pop. growth			-0.8200*	-0.8214**			-0.4774	-0.5518
			(0.4305)	(0.4181)			(0.7390)	(0.7417)
Over 70			1.1768	0.3686			1.0144	0.2840
			(1.2225)	(1.1022)			(1.1121)	(1.0618)
Agric. empl.			-0.2119	-0.2111			-0.4902	-0.4176
			(0.4058)	(0.4050)			(0.6898)	(0.6392)
Voter turnout			0.8371	0.5766			0.0837	-0.1034
			(0.7195)	(0.7233)			(0.9142)	(0.9275)
Left-wing coal.			0.3623***	0.3680***			0.0561	0.0664
			(0.1304)	(0.1301)			(0.1140)	(0.1178)
Other coalition			-0.0021	-0.0152			-0.2838**	-0.2877**
			(0.1162)	(0.1152)			(0.1276)	(0.1275)
Observations	6,378	6,378	6,378	6,378	403	403	403	403
Reg FEs	no	yes	yes	yes	no	yes	yes	yes

NOTES: Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Constant and fixed-effects not reported. Errors are clustered at provincial level.

Table 2. Mafia intensity and the likelihood of hosting SPRARs (models 9 to 11) or the number of asylum seekers hosted in municipalities involved in reception activities (models 12 to 14): Robust IV Probit and IV Poisson estimates from Sicily.

Dep. var.:	(9)	(10)	(11)	(12)	(13)	(14)
	Likelihood of hosting SPRARs			Nr. of people hosted		
	IV Probit			IV Poisson		
Mafia	0.0975***	0.0961***	0.0973***	0.0264	0.0431	0.0165
	(0.0155)	(0.0261)	(0.0172)	(0.0265)	(0.0496)	(0.0281)
First-stage						
Citrus	0.2162*	0.2616**		0.4815*	0.4777*	
	(0.1173)	(0.1208)		(0.2558)	(0.2725)	
Sulphur caves	5.2845***		5.7415***	6.1289**		6.0960**
	(1.5216)		(1.4987)	(2.3393)		(2.3515)
Observations	221	221	221	53	53	53
Controls	yes	yes	yes	yes	yes	yes
Instruments	both	citrus	Sulphur	both	citrus	Sulphur
1-stage K-P F	9.326	4.520	14.677	5.730	0.059	6.721
Hansen J P-val	0.795	-	-	0.539	-	-

NOTES: Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Constant and controls not reported. Controls include: ruggedness index, population, unemployment, average income, foreigners, population growth, over 70, agricultural employment, voter turnout, left-wing and other coalition dummies (we do not include the port dummy as it perfectly predicts PR=1 in 4 observations and hence make them drop). Models 9-11 are estimated via ML (with Stata's *ivprobit* command), while models 12-14 with a control-function estimator (with Stata's *ivpoisson cfunction* command). The instrumental variable approach focuses exclusively on Sicily, for which we have historical information to construct the instruments (the excluded instruments are citrus suitability and sulphur caves). The number of observations hence respectively drops to 221 in columns 9-11 (these are the Sicilian municipalities for which we have all variables), and to 53 in columns 12-14.

Table 3. Mafia intensity and the municipal likelihood of hosting SPRARs (columns 15 to 17) or the number of asylum seekers hosted (columns 18 to 20): Robust Probit and Zero-truncated Poisson estimates controlling for NGOs and for confiscated and reallocated real estate properties.

	(15)	(16)	(17)	(18)	(19)	(20)
Dep. var.:	Likelihood of hosting SPRARs			Nr. of people hosted		
	Probit			Truncated-Poisson		
Mafia	0.0091**	0.0099***	0.0096**	0.0067**	0.0066**	0.0066**
	(0.0037)	(0.0037)	(0.0038)	(0.0032)	(0.0031)	(0.0031)
NGOs per capita		0.0234	0.0238		0.0356**	0.0357**
		(0.0195)	(0.0196)		(0.0175)	(0.0176)
Reallocated properties (all)		-0.0113***			-0.0004**	
		(0.0014)			(0.0002)	
Reall. prop. (for soc. purposes only)			-0.0071			-0.0024*
			(0.0054)			(0.0012)
Observations	6,360	6,360	6,360	402	402	402
Controls	yes	yes	yes	yes	yes	yes
Reg FEs	yes	yes	yes	yes	yes	yes

NOTES: Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Constant controls and fixed-effects not reported. Controls include all the covariates from Table 1, that is: regional FEs, port dummies, ruggedness index, population, unemployment, average income, foreigners, population growth, over 70, agricultural employment, voter turnout, left-wing and other coalition dummies. Errors are clustered at provincial level. Columns 15 and 18 respectively report the results of models 3 and 7 from Table 1 while, in the other columns, we control for the number of real estate properties confiscated by the state to the mafias and reallocated to public or civil society organizations for any type of social purpose (models 16 and 19) or reallocated for social purposes (models 17 and 20). NGOs per capita is not available for the whole sample of municipalities included in the main analysis. The number of observations hence drops from 6,378 to 6,360 in columns (15) to (17), and from 403 to 402 in columns (18) to (20).

Table 4. Municipal councils' dissolution for mafia infiltration and the likelihood of hosting SPRARs (columns 21 to 23) or the number of asylum seekers hosted (columns 24 to 26): robust Diff-in-Diffs results for the regions of Campania, Calabria, Apulia and Sicily.

Dep. var.:	(21)	(22)	(23)	(24)	(25)	(26)
	Likelihood of hosting SPRARs			Nr. of people hosted		
Infiltrated elect. mand.	0.085**	0.089**	0.089**	3.014**	3.178**	3.265**
	(0.042)	(0.042)	(0.042)	(1.434)	(1.423)	(1.392)
Groups	1,247	1,247	1,247	1,247	1,247	1,247
Observations	7,482	7,482	7,482	7,482	7,482	7,482
Controls	no	no	yes	no	no	yes
Municipal FEs	no	yes	yes	no	yes	yes

NOTES: Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Constant controls and fixed-effects not reported. All models are estimated via a two-way fixed-effect estimator. Time-varying controls include: population, unemployment, average income, foreigners, population growth, over 70, agricultural employment, voter turnout, left-wing and other coalition dummies. The analysis covers the four southern Italian regions of Campania, Calabria, Apulia and Sicily which, combined, account for 92.4% of all dissolutions over 2010-16. We have data for 1,247 individual municipalities, each observed 6 times (in 2010, and then between the years 2012-16). Errors are clustered at the municipal level.

Table 5. Municipal probability of using direct awards/open procurement procedures more than the national average: Robust Probit estimates distinguishing between different types of tenders.

	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)
	Direct award				Open tender			
	Any object		Mentioning "SPRAR"		Any object		Mentioning "SPRAR"	
	All	> €750K	All	> €750K	All	> €750K	All	> €750K
Mafia	0.0181**	0.0199*	0.0165**	0.0270**	-0.0083	-0.0034	-0.0236***	-0.0175*
	(0.0073)	(0.0115)	(0.0083)	(0.0136)	(0.0056)	(0.0081)	(0.0079)	(0.0100)
Observations	298	126	163	104	298	126	163	104
Controls	yes	yes	yes	yes	yes	yes	yes	yes
Region FEs	yes	yes	yes	yes	yes	yes	yes	yes

NOTES: Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Constant controls and fixed-effects not reported. Controls include: population, population density, number of NGOs, political orientation of the mayor, average amount of resources involved in the procurements in that municipality. The table reports results for two main different samples. The first one (columns 27, 28 and 31, 32) includes all the procurement contracts issued by municipalities on any type of asylum seeker reception activities. The second one (columns 29, 30 and 33, 34) only includes the contracts specifically mentioning the word "SPRAR" in the object of the procedure. While the first sample may overestimate the number of contracts related to SPRARs – e.g., also including agreements linked to emergency centres –, the second sample provides an underestimation. For instance, all the procurement procedures concerning the reception of unaccompanied minors do not mention the word SPRAR in the object, even when those persons are hosted in such centres. Within each of the two samples, we also distinguish between two sub-samples: all procurement procedures (odd numbered columns) or only those whose money amount exceeds the €750K threshold (even numbered columns).

Figures

Figure 1. Number of asylum applicants in European countries on average and in Italy.
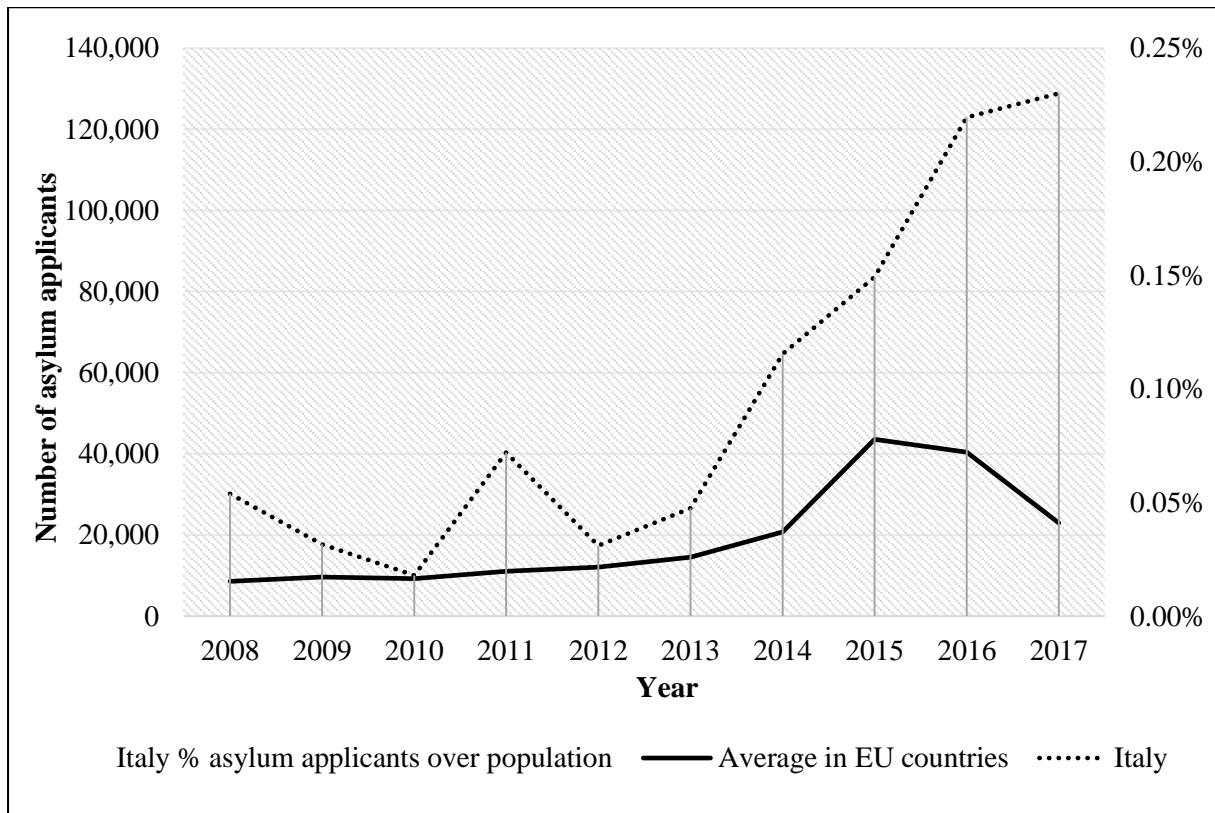
SOURCE: Authors' elaborations on Eurostat data.

Figure 2. Index of Mafia Presence across Italian municipalities (left), and municipalities involved in SPRAR reception centres (right).
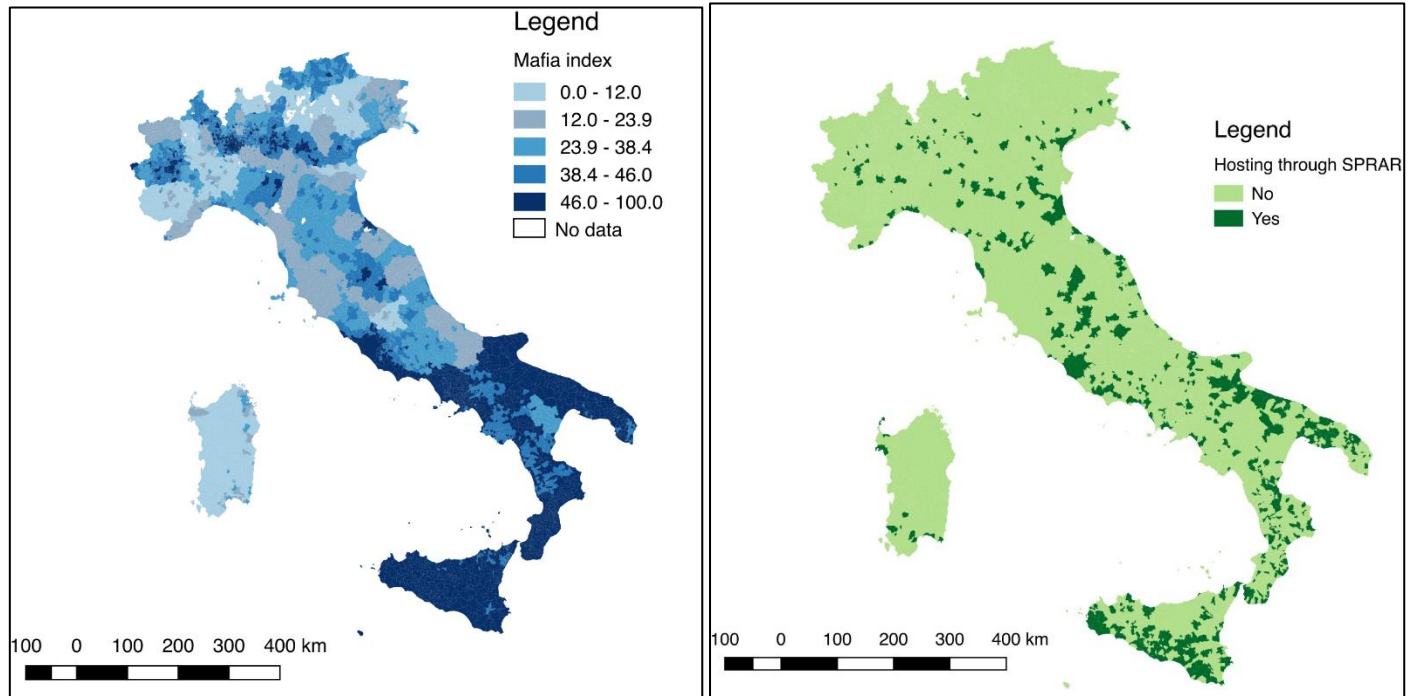
SOURCE: Authors' elaborations on Crime & Tech data (left), and Cittalia (right).

Figure 3. Event study plots (dynamic panel estimates) of the extensive and intensive Diff-in-Diffs results.
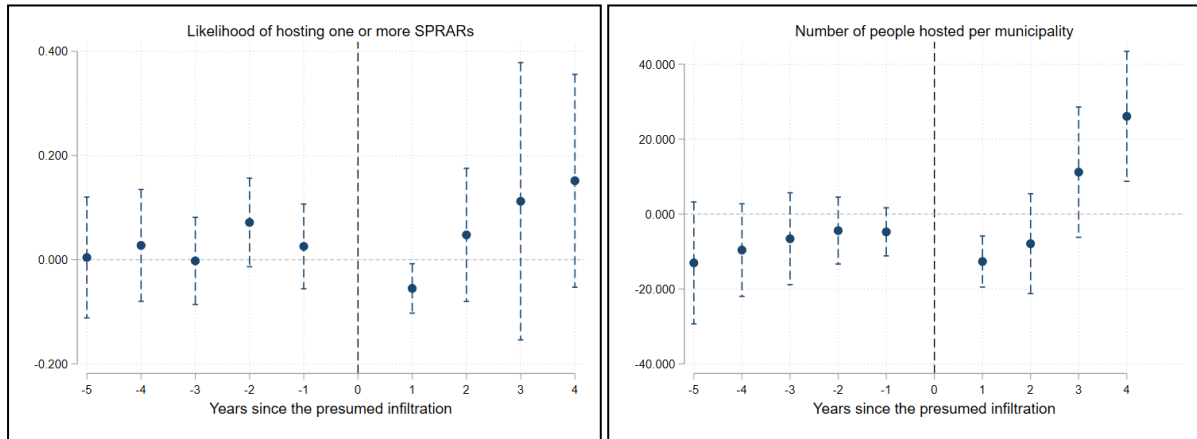
NOTES: The graph plots year dummy variables from a two-way fixed effect model for the years prior and after the election of the infiltrated government (the reference category, marked by a dashed vertical line). All years after the dissolution of the infiltrated governments are excluded (hence coefficients for the years *after* the infiltration refer to the infiltrated mandate, that is, the years between the election when the infiltration allegedly occurred and the judicial dissolution). Estimates include year and municipality fixed-effects, as well as all the time-varying sociodemographic controls included in Table 4. Standard errors are clustered at the municipal level.

Appendix A: Tables

Appendix A.1. Variables' description and sources.

Variable	Unit of measure	Source
Mafia Index	Index ranging 0-100	Crime & Tech
Hosting dummy	Dummy variable (0,1)	Cittalia
Hosted persons	Absolute number of asylum seekers	Cittalia
Ports used to welcome asylum seekers	Dummy variable (0,1)	Cittalia
Population	Total municipal population (in 1000s)	ISTAT
Ruggedness	Categorical variable (3 classes)	ISTAT
Unemployment rate	Rate (0-1)	ISTAT
Average income	Per-capita average income (in 1000s)	Italy's Ministry of Economy and Finance
Rate of foreign population	Rate (0-1)	ISTAT
Aged people (Rate of people over 70)	Rate (0-1)	ISTAT
Population growth (Variation in population 2001-2011 period)	% change rate	ISTAT
Rate of people in agricultural employment	Rate (0-1)	ISTAT
Political coalition of the mayor	Categorical variable (3 classes)	Italy's Ministry of Interior
Voter turnout in elections	Rate (0-1)	Italy's Ministry of Interior
Municipal debt	Ln per capita € municipal debt	OpenPolis
Not-for-profit organisations	Ln NGOs per 10.000 inhabitants	ISTAT
Confiscated properties belonging to individuals convicted for mafia related crimes and re-allocated	Absolute number	Italy's National Agency for the Administration and Destination of Properties Confiscated to Organised Crime
Citrus soil suitability	Average land suitability for citrus (% of municipal land)	FAO-GAEZ
Sulphur mines in the 19th Century	Dummy variable (0,1)	Buonanno et al. (2015)
Public tenders on reception centres	Absolute number	Openpolis, on information from Italy's National Agency Against Corruption (ANAC)
Centrality Index	Categorical variable (6 classes)	ISTAT
Illiteracy	%	ISTAT
University graduates	%	ISTAT
Manufacturing employment	%	ISTAT

Appendix A.2. Descriptive statistics.

Variable	Nr of obs.	Mean	SD	Min	Max
All Italy (main analysis)					
Mafia Index	6,378	30.700	18.666	0.000	94.540
Hosting dummy	6,378	0.063	0.243	0.000	1.000
Hosted persons	6,378	3.094	38.775	0.000	2,836
Port dummy	6,378	0.002	0.040	0.000	1.000
Ruggedness	6,378	1.882	0.951	1.000	3.000
Population	6,378	7.816	44.274	0.034	2,617.175
Unemployment	6,378	0.100	0.060	0.000	0.422
Average income	6,378	19.222	3.873	6.059	57.331
Foreigners	6,378	0.061	0.043	0.000	0.367
Voter turnout	6,378	0.752	0.076	0.207	1.000
Population growth	6,378	0.037	0.126	-0.410	2.241
Over 70	6,378	0.166	0.049	0.032	0.512
Agric. employment	6,378	0.089	0.085	0.003	0.724
Left-wing coalition	6,378	0.098	0.297	0.000	1.000
Other coalition	6,378	0.790	0.407	0.000	1.000
Municipal debt	6,187	-1.295	6.677	-9.210	9.810
NGOs	6,360	3.410	2.004	-9.210	7.341
Reallocated properties (all)	6,378	0.888	18.333	0.000	1,385.000
Reallocated prop. (for social purposes)	6,378	0.613	5.886	0.000	329.000
All Italy (analysis on public tenders)					
Direct-award	298	0.148	0.355	0.000	1.000
Open-bidding	298	0.419	0.494	0.000	1.000
Average tender size (Ln)	298	12.670	0.952	10.597	15.068
Direct-award ("Sprar" subsample)	163	0.419	0.494	0.000	1.000
Open-bidding ("Sprar" subsample)	163	0.178	0.384	0.000	1.000
Sicily (2SLS analysis)					
Mafia Index	221	59.106	9.921	43.300	85.550
Hosting dummy	221	0.240	0.428	0.000	1.000
Hosted persons	221	13.814	32.823	0.000	190.000
Port dummy	221	0.018	0.134	0.000	1.000
Ruggedness	221	1.769	0.840	1.000	3.000
Population	221	14.968	49.416	0.228	657.561
Unemployment	221	0.200	0.047	0.072	0.313
Average income	221	15.331	2.517	9.808	27.897
Foreigners	221	0.021	0.020	0.000	0.199
Voter turnout	221	0.663	0.052	0.501	0.783
Population growth	221	-0.017	0.103	-0.213	0.487
Over 70	221	0.161	0.042	0.055	0.275
Agric. employment	221	0.168	0.107	0.013	0.546
Left-wing coalition	221	0.086	0.281	0.000	1.000
Other coalition	221	0.742	0.438	0.000	1.000
Municipal debt	194	3.219	5.205	-9.210	8.089
NGOs	221	3.177	1.267	-9.210	4.708
Reallocated properties (all)	221	10.538	94.366	0.000	1,385.00
Reallocated prop. (for social purposes)	221	4.837	23.668	0.000	329.000
Citrus soil suitability	221	15.279	7.832	0.000	48.000

Sulphur mines	221	0.140	0.348	0.000	1.000
Centrality index	221	4.235	1.099	1.000	6.000
Illiteracy %	221	2.372	1.046	0.592	5.388
University graduates %	221	6.928	2.717	2.532	21.464
Manufacturing employment %	221	18.273	5.729	2.817	41.445

Southern regions of Campania, Calabria, Apulia, and Sicily (Diff-in-Diffs analysis)

Mafia Index	1,247	54.995	10.808	39.960	94.540
Hosting dummy	1,247	0.165	0.372	0.000	1.000
Hosted persons	1,247	6.801	20.156	0.000	190.000
Port dummy	1,247	0.008	0.089	0.000	1.000
Ruggedness	1,247	1.854	0.896	1.000	3.000
Population	1,247	10.371	37.739	0.172	962.003
Unemployment	1,247	0.183	0.056	0.014	0.422
Average income	1,247	14.982	2.588	8.125	27.897
Foreigners	1,247	0.024	0.018	0.000	0.199
Voter turnout	1,247	0.678	0.068	0.376	0.878
Population growth	1,247	-0.016	0.102	-0.410	0.893
Over 70	1,247	0.155	0.046	0.047	0.368
Agric. employment	1,247	0.160	0.111	0.013	0.724
Left-wing coalition	1,247	0.101	0.302	0	1
Other coalition	1,247	0.782	0.413	0	1

Appendix A.3. Mafia intensity and the likelihood of hosting SPRAR centres (models 1 to 4) or the number of asylum seekers hosted in municipalities involved in reception activities (models 5 to 8): replication of Table 1 including municipal debt as an additional control.

Dep. var.:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Likelihood of hosting SPRARs				Nr. of people hosted			
	Probit				Zero-truncated Poisson			
Mafia	0.0254***	0.0084***	0.0097***		0.0175**	0.0083***	0.0064**	
	(0.0026)	(0.0033)	(0.0037)		(0.0082)	(0.0029)	(0.0032)	
Municipal debt			0.0068	0.0058			0.0098	0.0103
			(0.0050)	(0.0050)			(0.0079)	(0.0081)
Observations	6,187	6,187	6,187	6,187	387	387	387	387
Reg FEs	no	yes	yes	yes	no	yes	yes	yes
Geog ctrls	no	yes	yes	yes	no	yes	yes	yes
Pol-econ ctrls	no	no	yes	yes	no	no	yes	yes

NOTES: Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Constant and fixed-effects not reported. Errors are clustered at provincial level. Geographical controls include port dummies, population, and ruggedness index, while Pol-econ controls include all the other controls included in Table 1, namely unemployment, average income, foreigners, population growth, over 70, agricultural employment, voter turnout, left-wing and other coalition dummies. Municipal debt is not available for the whole sample of municipalities included in the main analysis and, hence, in comparison to Table 1 the number of observations drops from 6,378 to 6,187 in columns (1) to (4), and from 403 to 387 in columns (5) to (8).

Appendix A.4. Mafia intensity and the likelihood of hosting SPRAR centres (models 1 to 3) or the number of asylum seekers hosted in municipalities involved in reception activities (models 4 to 6) during the years 2009-10 instead of 2016.

Dep. var.:	(1)	(2)	(3)	(4)	(5)	(6)
	Likelihood of hosting SPRARs			Nr. of people hosted		
	Probit			Zero-truncated Poisson		
Mafia	0.0178***	0.0074	0.0062	0.0073**	0.0051	0.0040
	(0.0028)	(0.0045)	(0.0048)	(0.0036)	(0.0033)	(0.0041)
Observations	6,201	6,201	6,201	95	95	95
Reg FE		Yes	Yes		Yes	Yes
Geog ctrls		Yes	Yes		Yes	Yes
Pol-econ ctrls			Yes			Yes

NOTES: Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Constant and fixed-effects not reported. Errors are clustered at Nuts3 level. In 2009 the region of Sardinia did not host any centre. In comparison to Table 1 the number of observations hence drop by 177 municipalities, from 6,378 to 6,201. Relatedly, in 2009-10 only 95 municipalities were involved in SPRAR activities, hence the number of observations in columns (4) to (6) drops from 403 to 95. Geographical controls include port dummies, population, and ruggedness index, while Pol-econ controls include all the other controls included in Table 1, namely unemployment, average income, foreigners, population growth, over 70, agricultural employment, voter turnout, left-wing and other coalition dummies.

Appendix A.5. Matching estimator

Matching estimators evaluate the causal effect of a variable by comparing 'treated' units with 'control' ones, which are similar in most characteristics but have not received any sort of 'treatment'. One of the advantages of matching is that it does not require specifying the functional form of the outcome, and is hence less susceptible to misspecification bias. Besides, matching estimators create well-matched samples of the original treated and control groups, reducing possible biases due to covariate heterogeneity (Imai, King, Stuart, 2008).

For each treated observation, nearest-neighbour matching estimators calculate a 'missing potential outcome' by using an average of the outcomes of similar untreated units. The treatment effect is then computed as the average of the difference between the observed and the imputed potential outcomes for each unit. Mahalanobis-distance matching (MDM), in particular, implies a match of observations based on Euclidian distance adjusted for covariance in the data. To identify 'treated' municipalities, we calculate a 'treatment' dummy equal to 1 for municipalities whose mafia index is above/below the 0.5 and 0.75 national quartiles.

In the literature it is common to use statistical significance testing for balance diagnostics and compare the mean of covariates between treated and untreated matched samples. Relying on significance testing to detect imbalance may however produce misleading results (ibid.). Hence, while in Appendix A.7 we provide, as a reference, descriptive statistics about means/variances, in Appendix A.8 we provide outputs about standardised differences/variance ratio. Perfectly balanced samples have standardized differences of 0 and variance ratio of 1. Standardised differences below 0.1 are commonly assumed to indicate negligible differences in mean (ibid.). Appendix A.8 suggests that the matching procedure has significantly reduced imbalance between treated and control units (although differences in municipal population reduce but remain still high).

Appendix A.6. Mafia intensity and the number of asylum seekers hosted at municipal level (expressed in Ln): robust Mahalanobis-distance matching estimates for municipalities with a mafia level above/below the national median (columns 1 and 3), and 7.5 (columns 2 and 4) or 3rd quartile.

Dep. var.: Treated if mafia index above:	(1) Likelihood of hosting 2nd quart.	(2) 3rd quart.	(3) Nr. people hosted 2nd quart.	(4) 3rd quart.
Mafia	0.0650***	0.1048***	0.8259***	1.3286***
	(0.0110)	(0.0154)	(0.1430)	(0.1966)
Observations	6,378	6,378	6,378	6,378
Obs. treated	3231	1565	3231	1565
Obs. control	3147	4813	3147	4813

NOTES: Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. The table shows the robust MDM results for the extensive (columns one and two) and intensive margins (models three and four). For each set of results, we provide outputs calculating the treatment dummy in two different ways. In models one and three, we considered as 'treated' those municipalities whose Mafia Index is above the national median value. In models two and four, by contrast, we apply a more stringent approach, and consider as 'treated' those municipalities whose Mafia Index is above the 3rd national quartile.

Overall, the MDM results confirm the baseline estimates. The outputs overall suggest, as we would expect, that the link between organized crime and reception activities strengthens when restringing the 'treated' status to municipalities with higher Mafia Index levels. In Appendices A.7 and A.8 we respectively provide a comparison in means/variances and standardised differences/variance ratio. Perfectly balanced samples have standardized differences of 0 and variance ratio of 1. Standardised differences below 0.1 are commonly assumed to indicate negligible differences in mean. Appendix A.8 shows how the covariates of the matched samples are significantly more balanced than the raw data, and confirm our baseline estimates. Besides, while care is needed for the 0.75 quartile sample (for which some of the covariates are not well balanced), the outputs suggest, as we would expect, that the link between organized crime and reception activities strengthens at higher levels of mafia intensity.

Appendix A.7. Descriptive means and variances for MDM covariates between treated and control municipalities in the analysis of Appendix A.6.

	Means		Variances	
Above/below 0.5	Control	Treated	Control	Treated
Ruggedness	1.900	1.865	0.937	0.871
Port dummy	0.000	0.003	0.000	0.003
Population	4.319	11.219	98.289	3750.857
Unemployment	0.078	0.121	0.002	0.005
Average income	19.886	18.578	10.787	18.268
Foreigners	0.069	0.054	0.002	0.002
Voter turnout	0.762	0.742	0.004	0.007
Population growth	0.035	0.039	0.016	0.015
Left-wing coalition	0.088	0.114	0.080	0.101
Other coalition	0.818	0.747	0.149	0.189
Over 70	0.178	0.154	0.003	0.002
Agric. employment	0.083	0.095	0.005	0.009
Above/below 0.75	Control	Treated	Control	Treated
Ruggedness	1.924	1.755	0.938	0.780
Port dummy	0.000	0.006	0.000	0.006
Population	5.203	15.842	265.844	7089.456
Unemployment	0.081	0.158	0.002	0.005
Average income	20.019	16.769	11.860	16.682
Foreigners	0.068	0.040	0.002	0.001
Voter turnout	0.767	0.707	0.005	0.007
Population growth	0.043	0.019	0.016	0.014
Left-wing coalition	0.088	0.141	0.081	0.121
Other coalition	0.808	0.703	0.155	0.209
Over 70	0.172	0.148	0.002	0.002
Agric. employment	0.076	0.131	0.005	0.012

NOTES: The upper part of the table reports outputs for Appendix A.6's columns (1) and (3), while the lower part reports outputs for columns (2) and (4).

Appendix A.8. MDM balancing tests for covariates between treated and control municipalities in the analysis of Appendix A.6.

	Standardised differences		Variance ratio	
Above/below 0.5	Control	Treated	Control	Treated
Ruggedness	-0.037	-0.020	0.930	0.936
Port dummy	0.067	0.000	9.707	1.000
Population	0.157	0.085	38.162	12.241
Unemployment	0.763	0.148	2.560	1.156
Average income	-0.343	-0.101	1.694	1.278
Foreigners	-0.354	0.007	0.955	1.035
Voter turnout	-0.275	-0.080	1.606	1.237
Population growth	0.025	-0.007	0.923	1.180
Left-wing coalition	0.087	-0.005	1.260	0.988
Other coalition	-0.173	-0.001	1.270	1.002
Over 70	-0.520	-0.100	0.715	1.165
Agric. employment	0.142	0.116	1.740	1.443
Above/below 0.75	Control	Treated	Control	Treated
Ruggedness	-0.183	-0.058	0.832	0.897
Port dummy	0.108	0.000	30.558	1.000
Population	0.175	0.085	26.668	5.591
Unemployment	1.348	0.174	2.362	1.079
Average income	-0.860	-0.120	1.407	1.166
Foreigners	-0.719	0.004	0.703	0.998
Voter turnout	-0.805	-0.125	1.446	1.065
Population growth	-0.192	0.035	0.883	1.070
Left-wing coalition	0.165	-0.009	1.500	0.981
Other coalition	-0.247	0.000	1.348	1.000
Over 70	-0.522	-0.160	0.670	1.169
Agric. employment	0.600	0.125	2.552	1.202

NOTES: The upper part of the table reports outputs for Appendix A.6's columns (1) and (3), while the lower part reports outputs for columns (2) and (4).

Appendix A.9. Instrumental variable strategy.

Since the seminal work of Gambetta (1993), numerous scholars have demonstrated how the mafia emerged in the 1870s as an industry producing, promoting, and selling private protection following the juncture of two key critical factors (Bandiera, 2003; Buonanno et al., 2015; Dimico et al., 2017). First, the abolition of feudalism through the land reforms of 1812 triggered a power struggle between old feudal barons, new landlords, and the ruling monarchy, which resulted in a vacuum of power and extremely low levels of law enforcement. In the Sicilian countryside, many guards, and former soldiers and convicts previously employed by the feudal lords and trained in the use of violence exploited this situation as a 'business opportunity'.

Second, in a general climate characterized by the absence of public law-enforcement institutions, two external demand shocks rapidly changed the economy of the island. During the early decades of the 19th Century, Sicily benefitted from an international demand shock for lemons and oranges, which soared in the early 1800s following the discovery on the effects of citruses to cure scurvy. As early as 1875 the 'Damiani-Jacini Inquiry', nationally mandated by the new-born Parliament of Italy, united into a single kingdom in 1861, underlined how "where property is divided, where there is plenty of work for everyone, and the orange trees enrich landowners and growers alike – these are the typical sites of mafia presence" (Gambetta, 1993).

The same period witnessed an exponential rise in the international demand for Sulphur, which represented a key input for the growing heavy-industrial productions. Sicily, where the mineral was abundant, soon became the world's largest producer. In 1893, for example, the island accounted for almost 83% of the global production (Buonanno et al., 2015). The Sulphur mine sector was particularly conducive to violence. Piecework miners had to protect their

extraction from other workers whilst, once extracted, Sulphur minerals had to be escorted towards the main island ports (ibid.). As a matter of fact, it was in the mining environment of rural inner Sicily where the first mafia organization – the 'Brotherhood of Favara' – was discovered and prosecuted by the Italian judicial system in 1883. By the mid-1800s, Sulphur and citrus fruits were by far the two Sicilian top export products. Very high profits, combined with a weak rule of law, extreme poverty, and low interpersonal trust (Gambetta, 2000), made Sulphur and citrus productions ideal targets for predation. Producers hence resorted to hiring the infant mafia organizations to obtain private protection and intermediation services with retailers and exporters in the main harbours. Following these insights, we use count data on Sulphur mines in 1886 and data on the suitability to grow citruses to predict contemporary mafia presence.

It is important to stress that both the Sulphur and citrus industries have almost disappeared since then. Conditioning on the full host of socioeconomic covariates, it is hence unlikely that they may influence asylum reception if not through organized crime.

Overall, in step one (extensive margin) of our two-step sequential approach described in the paper's Methodology section, we adopt Stata's *IV Probit* estimator. Formally, the model is as follows:

$$y_{1i}^* = y_{2i}\beta + x_{1i}\gamma + u_i \tag{A.1}$$

$$y_{2i} = \prod_1 x_{1i} + \prod_2 z_i + v_i \tag{A.2}$$

Where y_{2i} is our vector of endogenous variables, x_{1i} is a vector of exogenous variables, z_i is a vector of additional instruments. β and γ are vectors of structural parameters and $\prod 1$ and $\prod 2$ are matrices of reduced-form parameters, all estimated through Maximum Likelihood (MLE). Besides

$$y_{1i} = \begin{cases} 0 & y_{1i}^* < 0 \\ 1 & y_{1i}^* \geq 0 \end{cases} \tag{A.3}$$

Then, in step two (intensive margin) we adopt Stata's *IV Poisson* estimator featuring a control-function approach as suggested by Wooldridge (2010). Formally, the model is as follows:

$$y_i = \exp(x_i'\beta_1 + y_{2i}'\beta_2 + v_i'\rho + c_i) \tag{A.4}$$

$$y_{2i} = z_i'B + v_i \tag{A.5}$$

Where, as before, y_{2i} is our vector of endogenous variables, x_{1i} is a vector of exogenous variables, z_i is a vector of additional instruments, and the term $v_i'\rho$ in equation (A.4) controls for the endogeneity of y_{2i}. Empirically, the parameters β_1, β_2, ρ and B are estimated by GMM.

Appendix A.10. Mafia intensity and the municipal likelihood of hosting SPRARs (columns 1 to 3) or the number of asylum seekers hosted (columns 4 to 6) across Sicilian municipalities: results adopting alternative *IV Probit* and *IV Poisson* estimators.

Dep. var.:	(1)	(2)	(3)	(4)	(5)
	Likelihood of hosting SPRARs IV Probit			Nr. of people hosted IV Poisson	
	MLE	Newey's twostep	MLE	One-step GMM	Two-step GMM
Mafia	0.1046***	0.1721**	0.1153***	0.0239	0.0234
	(0.0141)	(0.0686)	(0.0142)	(0.0275)	(0.0256)
First-stage					
Citrus	0.1868**	0.1868**	0.2139*	0.3266	0.3266
	(0.0872)	(0.0872)	(0.1165)	(0.2400)	(0.2400)
Sulphur caves	5.0851***	5.0851***	4.7695***	4.9238*	4.9238*
	(1.5274)	(1.5274)	(1.6326)	(2.5403)	(2.5403)
Observations	221	221	221	53	53
Controls	yes	yes	yes	yes	yes
Extra controls	-	-	yes	-	-
Instruments	both	both	both	both	both
First-stage K-P F	9.900	9.900	7.302	3.086	3.086
Hansen J P-value	0.717	0.717	0.600	0.543	0.543
CLR		12.30***			
K-J P-value		0.000			
AR		12.33***			

NOTES: Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Constant and controls not reported. Controls include: ruggedness index, population, unemployment, average income, foreigners, population growth, over 70, agricultural employment, voter turnout, left-wing and other coalition dummies (we do not include the port dummy as it perfectly predicts PR=1 in 4 observations and hence makes them drop). The extra controls included in model (3) are: an index of municipal centrality, illiteracy rates, share of university graduates, and share of workers in manufacturing. The excluded instruments are citrus suitability and Sulphur caves.

In the table above we replicate the outputs of Table 2 adopting alternative specifications of the IV Probit and IV Poisson estimators. Model two is estimated via Newey (1987)'s minimum chi-squared (two-step) estimator, rather than Maximum-Likelihood as in model one. For model two, the lower part of the table reports a set of weak-instrument-robust-inference tests. These tests are robust to weak instruments, in the sense that perfect identification of the coefficients is not assumed. The CLR statist rejects the null hypothesis that the mafia

coefficient may be zero, while the AR and K-J statistics jointly reject both the null hypothesis (i.e., coefficients being zero) and the endogeneity of the instruments.

One assumption behind our IV strategy is that the historical determinants of the rise of mafia are uncorrelated with unobservable characteristics that may influence predisposition to hosting. What makes the instruments relevant, i.e., mafia persistence, may challenge the exclusion restriction if long-term mafia presence affected factors such as municipality development patterns and political culture, in turn linked to predisposition to hosting. This assumption is ultimately untestable. Nevertheless, we can provide indirect evidence by showing, in column three, that our results are not affected when including additional socioeconomic controls potentially linked to both historical mafia presence and attitudes towards reception. In particular, we add the following regressors to the other covariates already included in all specifications: an index of municipal centrality, illiteracy rates, share of university graduates, and share of workers in manufacturing.

Tests not presented but available on request further show that results from models one and three are equally robust when adopting a Limited-Information-Maximum-Likelihood estimator (LIML), which is less affected by weak instruments than MLE.

Finally, in columns five we estimate the control-function approach of model four adopting, instead of one-step GMM, a two-step GMM procedure.

Appendix A.11. Mafia intensity and the municipal likelihood of hosting ASRCs (columns 1 to 3) or the number of asylum seekers hosted (columns 4 to 6): Robust *IV Probit* and *IV Poisson* estimates for Sicily additionally controlling for NGOs and for confiscated and reallocated real estate properties.

Dep. var.:	(1)	(2)	(3)	(4)	(5)	(6)
	Likelihood of hosting SPRARs			Nr. of people hosted		
	Control-function Probit			Control-function Poisson		
Mafia	0.0975***	0.0987***	0.0978***	0.0264	0.0188	0.0222
	(0.0155)	(0.0160)	(0.0157)	(0.0265)	(0.0228)	(0.0233)
NGOs per capita		-0.0406	-0.0412		0.6700*	0.6443*
		(0.0412)	(0.0417)		(0.3619)	(0.3777)
Reallocated properties (all)		-0.0043			-0.0027	
		(0.0083)			(0.0026)	
Realloc. prop. (for soc. purp. only)			-0.0049			-0.0093
			(0.0076)			(0.0059)
First-stage						
Citrus	0.2162*	0.2140*	0.2142*	0.4815*	0.4619*	0.5040*
	(0.1173)	(0.1176)	(0.1168)	(0.2558)	(0.2538)	(0.2540)
Sulphur caves	5.2845***	5.0893***	5.1848***	6.1289**	7.2268***	6.8379***
	(1.5216)	(1.5268)	(1.5189)	(2.3393)	(2.4663)	(2.4498)
Observations	221	221	221	53	53	53
Controls	yes	yes	yes	yes	yes	yes
Instruments:	both	both	both	both	both	both
First-stage K-P F	8.991	7.846	8.365	5.428	6.151	6.018
Hansen J P-value	0.625	0.584	0.673	0.528	0.636	0.509

NOTES: Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Constant and controls not reported. Controls include: ruggedness index, population, unemployment, average income, foreigners, population growth, over 70, agricultural employment, voter turnout, left-wing and other coalition dummies (we do not include the port dummy as it perfectly predicts PR=1 in 4 observations and hence makes them drop). Columns 1 and 4 respectively report the results of models 11 and 14 from Table 2, while in the other columns we control for the number of real estate properties confiscated by the state to the mafias and reallocated to public or civil society organizations for any type of social purpose (models 2 and 5) or reallocated for social purposes (models 3 and 6). In all regressions the excluded instruments are citrus suitability and Sulphur caves.

Appendix A.12. Difference-in-Differences strategy.

The Difference-in-Differences estimator exploits variation caused by the judicial enforcement of national Law 164/1991 on the forced dissolution of municipal governments upon evidence of collusion between mafias and local elected officials. Formally, the estimating equation is the following two-way fixed effect linear model:

$$Y_{i,t}^{j} = \alpha + \beta \text{Infilt}_{i,t} + X'_{i,t}\delta + \gamma_i + \tau_t + \varepsilon_{i,t} \qquad (A.6)$$

where: $Y_{i,t}^{j}$ is a vector of our two main variables of interest j, namely a dummy $= 1$ if, at time t, municipality i host at least a reception centre, or the overall number of people hosted in SPRARs in that municipality. $\text{Infilt}_{i,t}$ is our main variable of interest, and represents a dummy equal to one if the local government is infiltrated, during year t by criminal groups and zero otherwise (note that the main effects for dummies 'D=1 if treated' and 'D=1 if post-treatment' are subsumed by the municipality and year FEs). The coefficient of interest is β, aimed at capturing the effect of the infiltration at time t on the municipal involvement in SPRAR activities. $X'_{i,t}$ is a vector of time-varying controls. γ_i are municipal fixed-effects, included to control for time-invariant unobservables potentially correlated to mafia infiltration, and τ_t are year fixed-effects, included to account for cross-sectional common shocks. $\varepsilon_{i,t}$ is the error term. Results are clustered at municipal level.

Following the approach adopted by Di Cataldo and Mastrorocco (2021), we define as treatment the phase during which criminal members were presumably colluded with the local government, that is, the period occurring between the moment when the local government was dissolved and the previous local ballot when the incumbent administration was elected. In other words, we assume that the criminal infiltration into local government occurred in the last local election prior to the dissolution. (This is a simplification, as infiltration may in theory happen

before the last election preceding a dissolution. If this was the case, however, it would represent a downward bias on our estimate.) We exclude from the treatment period the calendar year in which the municipal council is dissolved. We do so because dissolutions can occur in any of the 12 months, and we would otherwise have to arbitrarily assume whether decisions during that entire year were made under mafia influence or not. For example, if a municipal government is dissolved over the course of 2015, and the previous local election occurred in 2012, we will consider as infiltrated the years 2012-14.

Because of the staggered way in which the treatment occurs, at each point in time *t,* our control group is composed of municipalities that were never dissolved as well as of municipalities which will be infiltrated later in time but which, by time *t*, have not been plausibly infiltrated yet. In other words, for municipalities that are dissolved over the course of our panel, we only consider the years *before* the infiltrated election, excluding instead any years after the infiltration or the dissolution. In so doing, we follow recent insights on staggered Difference-in-Differences research designs (cf. Goodman-Bacon, 2018).

Finally, in the event-study approach, used to test for pre-treatment parallel trends in Figure 3, we expand equation A.6 above to the following dynamic treatment effect specification:

$$Y_{i,t}^{j} = \alpha + \sum_{t \neq 0} \beta_t \, \text{Infilt}_{i,t} + X'_{i,t}\delta + \gamma_i + \tau_t + \varepsilon_{i,m} \qquad (A.7)$$

Where the effect of $\text{Infilt}_{i,t}$ is expanded to separately estimate yearly coefficients β_t for five years before/ four years after the infiltration ($t = 0$).

**Appendix A.13.** List of interviewees cited in the analysis.

1. **Experts**	2. **Organization, Role**
1. Cantone, Raffaele	3. President of the National Authority Against Corruption (ANAC).
2. Frigeri, Daniele	4. Head of CESPI (Centro Studi Politica Internazionale) and participant in the project MIRECO.[#]
3. Gelli, Federico	5. Former Member of Parliament, and former president of the Italian Parliamentary Commission on the reception system.
4. Palazzotto, Erasmo	6. Member of Parliament, former Secretary General of the Italian Parliamentary Commission on the reception system.

NOTE1: # The project named MIRECO was launched in 2017 by the Ministry of the Interior. The project is expected to realize guidelines for the monitoring and accreditation of the whole first and second reception systems in Italy.

NOTE2: Interviews were realised in Italian, therefore the extracts that are mentioned in the paper are the result of a translation in English.

Appendix B: Figures

Appendix B.1. Mafia intensity and the likelihood of hosting reception centres (left), or the number of people hosted by municipalities involved in reception activities (right): predicted probabilities based on the results of Table 1.
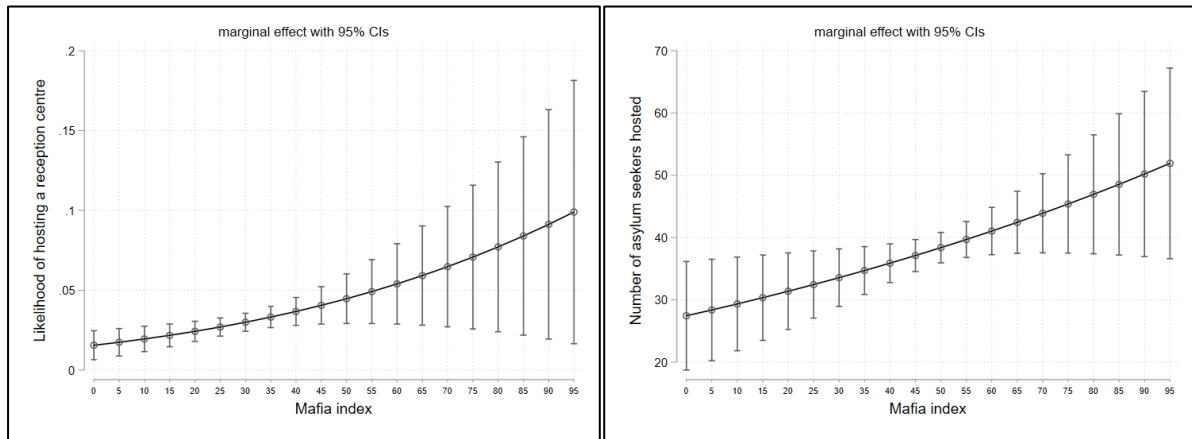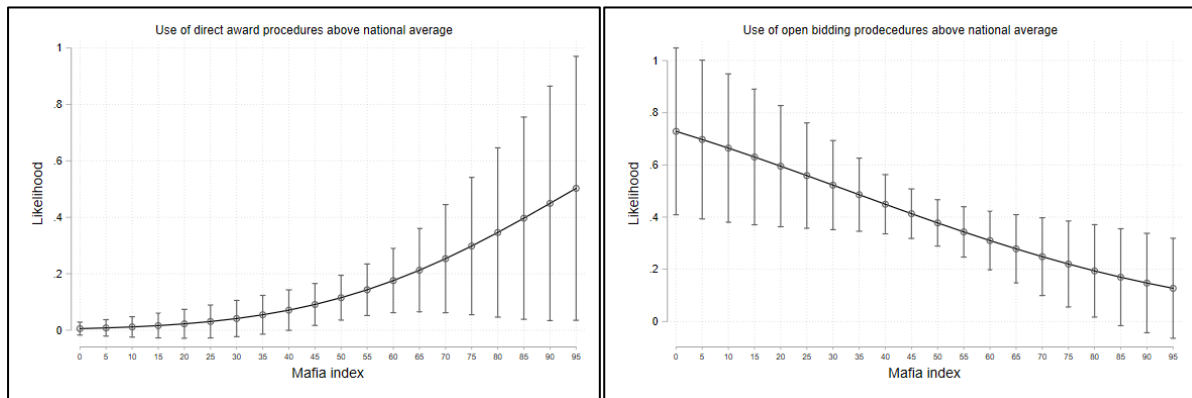

NOTES: Predicted probabilities are fitted, respectively, on the results of models 3 and 7 of Table 1, holding covariates constant at their means.

Appendix B.2. Index of Mafia Presence across Sicilian municipalities (top), municipalities involved in the SPRAR system (middle), and historical instruments: citrus soil suitability and Sulphur caves (bottom).
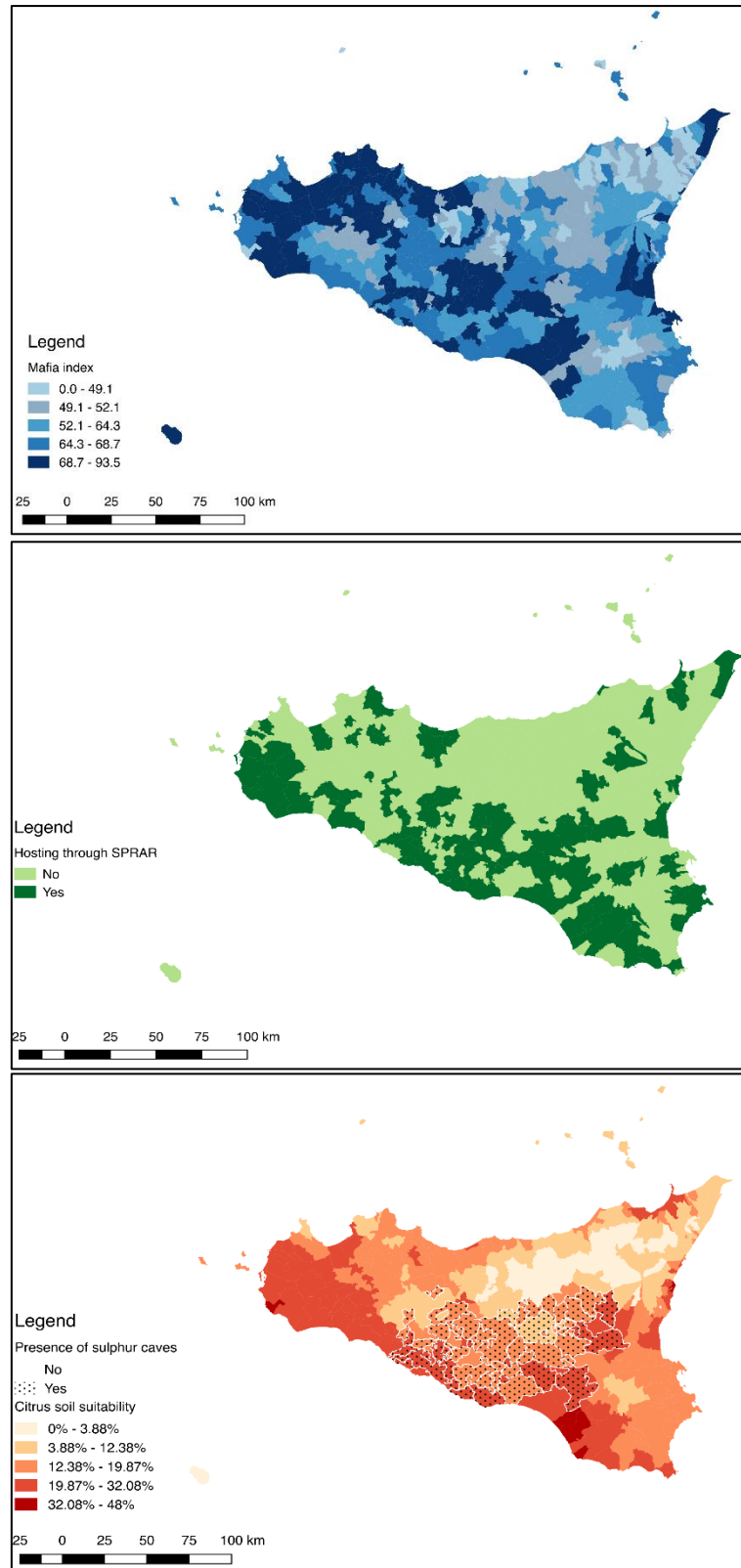
SOURCE: Authors' elaboration.

Appendix B.3. Mafia intensity and the likelihood of using direct-award (left) or open-bidding(right) procedures more than the national average.

NOTES: Predicted probabilities for tenders above €750.000, respectively based on models 30 and 34 from Table 5, holding other covariates constant at their means.

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