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The Departed: Origins and Persistence of Organized Crime in the United States

Massimo Anelli, Paolo Pinotti, Zachary Porreca
Bocconi University

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Abstract

This paper provides evidence of the institutional continuity between the "old world" Sicilian mafia and the mafia in America. We examine the migration to the United States of mafiosi expelled from Sicily in the 1920s following Fascist repression lead by Cesare Mori, the so-called "Iron Prefect". Using historical US administrative records and FBI reports from decades later, we provide evidence that expelled mafiosi settled in pre-existing Sicilian immigrant enclaves, contributing to the rise of the American La Cosa Nostra (LCN). Our analysis reveals that a significant share of future mafia leaders in the US originated from neighborhoods that had hosted immigrant communities originating in the 32 Sicilian municipalities targeted by anti-mafia Fascist raids decades earlier. Future mafia activity is also disproportionately concentrated in these same neighborhoods. We then explore the socio-economic impact of organized crime on these communities. In the short term, we observe increased violence in adjacent neighborhoods, heightened incarceration rates, and redlining practices that restricted access to the formal financial sector. However, in the long run, these same neighborhoods exhibited higher levels of education, employment, and social mobility, challenging prevailing narratives about the purely detrimental effects of organized crime. Our findings contribute to debates on the persistence of criminal organizations and their broader economic and social consequences.

1 Introduction

Organized crime groups are among the most enduring organizations in human history. The origins of groups such as the Mafia, Camorra and 'Ndrangheta, some of the oldest and most notorious criminal organizations worldwide, can be traced back to the formation of the Italian state in the mid-19th century (Gambetta, 1992). This historical link has led many to argue that organized crime is deeply rooted in local culture (e.g., Schneider and Schneider, 1994), which exhibits significant persistence over time (Guiso et al., 2016). A key implication of this "cultural hypothesis" is that organized crime would struggle to successfully transplant itself into different cultural contexts.

From the mid-20th century onward, however, Italian criminal organizations expanded their influence beyond their traditional strongholds in Sicily, Campania, and Calabria, extending their reach into other Southern Italian regions and eventually into the wealthier Northern regions.On the other hand, evidence on the transplantation of criminal organizations to entirely different countries remains limited. Studies by Sviatschi (2022) and Melnikov et al. (2024) examine the deportation of thousands of U.S.-based immigrants with criminal backgrounds—including members of the MS-13 gang—back to Central America, where their presence led to increases in homicides, gang activity, and reduced employment opportunities. However, these gang members returned to countries sharing their cultural and linguistic backgrounds, making their cases somewhat unique.

In this paper, we focus on the forced migration of Sicilian Mafia bosses in the 1920s from one of Europe's poorest and most insular regions to the United States—a country vastly different from Sicily in terms of social norms, language, and formal institutions, and at the time, one of the richest nations in the world. Specifically, we trace the origins of the Italian-American Mafia, commonly known as La Cosa Nostra (LCN), to the arrival of hundreds of prominent Sicilian Mafia members fleeing repression by the Fascist regime.

In an effort to eliminate a powerful rival to his regime in Sicily, Mussolini entrusted Prefect Cesare Mori with leading an extensive military campaign against the Mafia. On January 1, 1926, Mori laid siege to the town of Gangi, a known hub for criminal groups and bandits. Over the following months, he raided another 31 Mafia strongholds, arresting or killing numerous members and forcing many others to flee Sicily and join previous waves of Italian migrants in the United States. Despite the restrictive quotas imposed by the 1924 Immigration Act, the President's Commission on Organized Crime (1984) estimates that at least 500 members of the Sicilian Mafia found safe haven—and indeed, new criminal opportunities—in the United States. Although the sources and methods behind these estimates are unclear, notable Mafia clans, such as the Gambinos, Buonannos, and Corleones, are cited in other sources (see, e.g., Lupo, 2008).

The migration literature consistently shows that new arrivals tend to settle in enclaves of previous migrants from their home country, often from the same villages or towns (see, e.g., Card 2001, and Munshi, 2003). Using detailed information from full-count Census data, maps of enumeration districts, and Social Security mortality files, we divide eleven of the largest U.S. cities into over 8000 time-invariant hexagons of approximately 1.67 square kilometers each. Within these hexagons, we identify nearly 500 that in 1920 hosted Sicilian migrants from the 32 towns raided by Mori (henceforth referred to as "Mori neighborhoods"). Using additional digitized FBI data on Italian-American Mafia activity in 1959, we then compare the spatial distribution of Mori neighborhoods with the 1920 geocoded residences of men who would later become Mafia bosses in 1959, as well as the geocoded locations of their criminal activities.

Our findings reveal that 75% of Mafia bosses in 1959 had resided in "Mori neighborhoods" (representing only 1.7% of all hexagons) back in 1920. This overlap rises to 88% when the analysis is limited to New York, Chicago, and Philadelphia—the cities with the largest Mafia presence. Drawing 1,000 random samples of placebo hexagons, we find that the probability of achieving the same matching rates is effectively zero. Notably, this p-value remains zero even when sampling placebo hexagons exclusively within those hosting Sicilian immigrants from towns not raided by Mori. Although the share of Mafia activities located in Mori

neighborhoods is somewhat lower, it remains significant—accounting for approximately one-third of all Mafia activities in 1959, with a p-value of 0.

These results confirm that Mafia associates fleeing Sicily provided a critical source of "criminal capital," which proved fundamental to the rise of the Italian-American Mafia in the following decades. We then examine the socio-economic consequences of Mafia presence, uncovering contrasting patterns in the short and long term.

Beginning with short-term effects, we find that by the late 1930s, Mori neighborhoods were significantly more likely than other neighborhoods to be "redlined" by the Home Owner's Loan Corporation, the federal agency responsible for assessing credit and investment risk in urban neighborhoods. While it is not particularly surprising that areas with higher immigrant populations were subject to redlining, Mori neighborhoods were 40% more likely to be redlined even when compared to other neighborhoods with Sicilian migrants. This differential can be attributed to the greater presence of criminal groups in Mori neighborhoods, which was explicitly noted in some assessments as a reason for lower ratings.

A substantial body of literature documents the negative long-term effects of redlining on various socioeconomic dimensions, including lower rates of home ownership, lower housing values, lower rent levels, and higher rates of vacancy across subsequent decades (Aaronson et al., 2021). Remarkably, we find that by the 2000s-2010s, Mori neighborhoods exhibited *better* outcomes than other areas, with higher shares of college graduates and higher employment rates. Although unexpected given the well-documented adverse consequences of redlining, these positive long-term effects are consistent with previous findings by Murphy and Rossi (2020) regarding the impact of drug cartel presence across Mexican municipalities.

2 The Institutional Continuity Hypothesis and Mafia Migration

Before Mussolini, successive Italian governments had largely ignored or coexisted with the Mafia. Political leaders such as Francesco Crispi, Giovanni Giolitti, and Vittorio Emanuele Orlando either downplayed the Mafia's significance or leveraged its influence for political gain. This changed dramatically in May 1924, when Mussolini visited Sicily and personally witnessed the Mafia's entrenched power. During a public event in Piana degli Albanesi, Mafia-affiliated local leaders offered him their personal "protection"—a gesture that was less an act of loyalty than a display of the Mafia's entrenched authority. Mussolini perceived this offer as both an insult and a direct challenge to the supremacy of the Fascist state, prompting his determination to confront and dismantle Mafia power in Sicily. Shortly after this interaction with the Mafia leaders, on May 9, 1924, Benito Mussolini delivered a speech in Agrigento that signaled the regime's intent to assert state authority in the region. Mussolini addressed the local population, stating:

> "You have material needs that I understand: [...] it has been said that we need to guarantee the property and safety of hard-working citizens. Well, I declare to you that I will take all necessary measures to protect the honest men from the crimes of criminals. It should no longer be tolerated that a few hundred malefactors overwhelm, impoverish, and harm a magnificent population like yours."

This declaration underscored Mussolini's strategy of leveraging the fight against crime to legitimize his centralized authority, framing the Mafia as an obstacle to economic and social progress. It also explicitly attributed the existence of the Mafia to a limited group of criminal individuals, rather than to broader Sicilian cultural factors. This framing is crucial for our hypothesis, as subsequent efforts to eradicate the Mafia focused on targeting these individuals, ultimately prompting many Mafia leaders of the time to flee Sicily and migrate to the United States.

To implement this vision, Mussolini appointed **Cesare Mori**, known as the "iron prefect," to the Trapani government post on May 28, 1924, tasking him with dismantling Mafia control over Sicilian communities. Mori was granted extensive legal and military powers allowing him to conduct large-scale operations with minimal judicial oversight. The directive issued by Mussolini in 1925 upon appointing Mori as Prefect of Palermo left no ambiguity about the extent of authority granted to him:

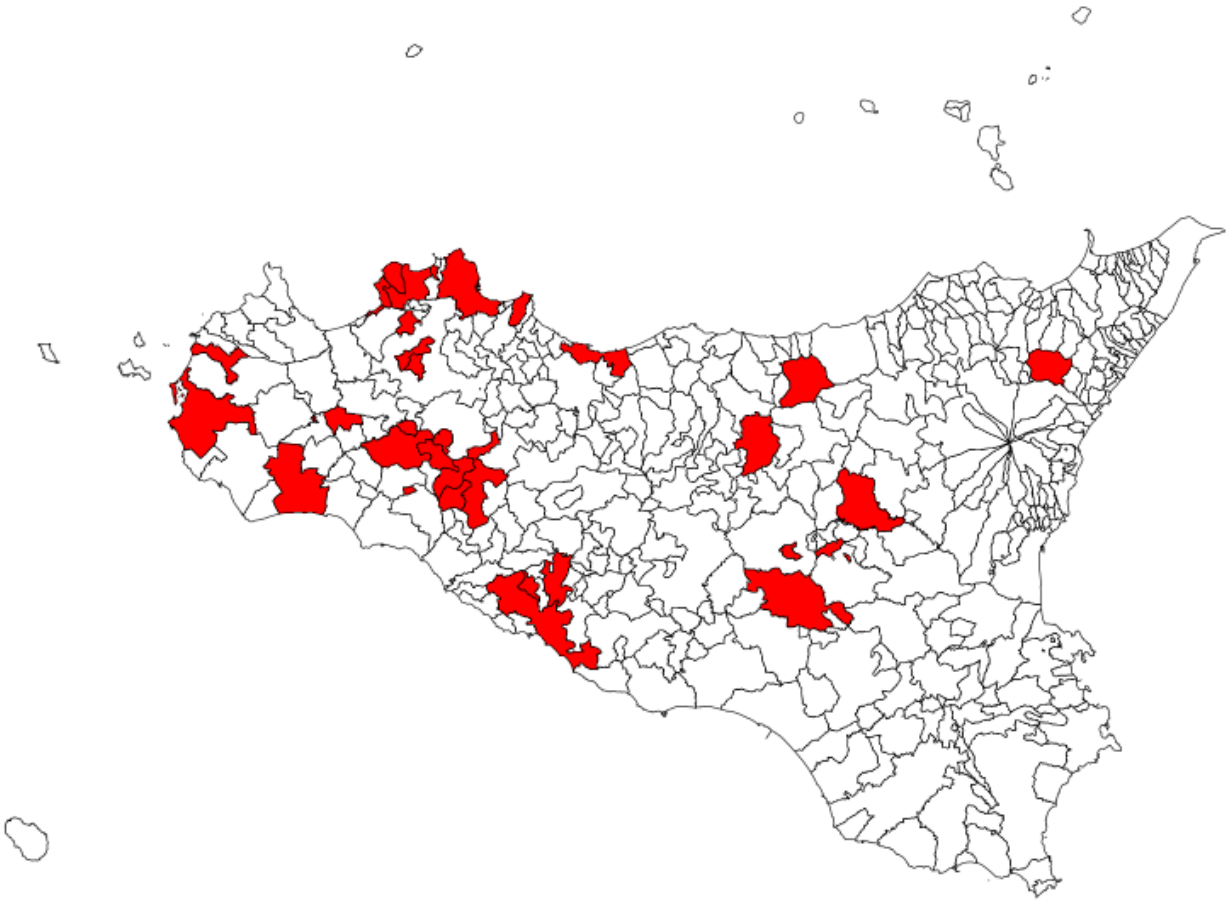
> Your Excellency has carte blanche; the authority of the State must be absolutely— I repeat, absolutely—restored. If the existing laws hinder you, it will not be a problem: we will make new laws.

Cesare Mori's anti-Mafia strategy – as articulated by Mori himself in his memoirs[1] – was a comprehensive and ambitious plan aimed at dismantling the Mafia's power structure both legally and socially. In his own outline, Mori emphasized the necessity of breaking the cycle of public fear and restoring confidence in state authority. Rejecting gradual repression, his plan called for bold, direct assaults on the Mafia's strongest positions, coupled with the active mobilization of the local population to erode the Mafia's social grip. He envisioned creating sustained pressure to destabilize the Mafia's sense of security and sought to reform the cultural norm of "omertà" by encouraging civic courage, public denunciations, and solidarity. Central to Mori's strategy was the reestablishment of law and order, through solving long-standing unsolved crimes and eliminating Mafia-controlled intermediaries who obstructed citizens' access to justice. He also proposed to weaken the Mafia's economic foundations by confiscating illicit assets, dismantling criminal wealth networks, and reviving the legal economy, particularly agriculture, to reduce dependence on Mafia-linked landowners. Additionally, Mori's plan focused on fostering a new civic consciousness through education and moral leadership, dismantling the entrenched systems of patronage and mediation that enabled Mafia dominance. While this nine-point strategy laid out Mori's vision, its practical implementation faced numerous obstacles, and its long-term success depended on broader political and social factors beyond Mori's control.

In our study, we also draw on Mori's memoirs to empirically reconstruct the precise timeline of his campaign and to identify the specific municipalities he targeted and raided. Mori's campaign escalated with the **siege of Gangi** on January 1, 1926, a dramatic military-style assault on a notorious Mafia stronghold. In 1926, his forces conducted operations in 32 towns across Sicily. Figure 1 presents a map of Sicily, highlighting the raided municipalities in red, as reconstructed from his memoirs. These raids resulted in the mass arrests of suspected Mafiosi or their forced flight abroad. The effectiveness of this crackdown is reflected in the

[1] Original title "Con la mafia ai ferri corti: Le memorie del "prefetto di ferro", English version titled "The Last Struggle With The Mafia"

Figure 1: Map of Sicilian Municipalities Raided by Cesare Mori



press of the time (see in Figure 2 a 1928 article about the Mori campaigns in the New York Times titled "The mafia dead, a new Sicily is born") and in contemporary accounts, such as Lupo (2008):

> "Many mafiosi personally used these clandestine travel channels to escape the Mori hurricane. I do not know which route the Corleonesi took to reach the United States, but they applied for and obtained passports immediately before the "raid" carried out by the authorities in the town (December 1926)."

The repression of the Sicilian Mafia under Mori's campaign led to a significant displacement of many high-ranking Mafiosi opted to migrate, particularly to the United States. Importantly, clandestine immigration from Sicily to the U.S. was possible in those years despite the rigid 1924 halt to migration, as reported by Lupo (2008)[2]:

[2]The source being the Ruling of the Court of Palermo against S. Termini and others, August 16, 1928, p. 26, and judicial police report of April 29, 1926, cc. 3 and 8, both in ACS, MGG, Extraditions, b. 17. See also the testimonies in G. Nania, San Giuseppe and the Mafia, Edizioni della Battaglia, Palermo 2000, p. 94.

Figure 2: The Mori anti-mafia campaign in the New York Times, 1928

THE MAFIA DEAD, A NEW SICILY IS BORN



The Prefect Who Broke the Mafia —Cesare Mori.

Photograph by Courtesy of Corriere d'America.

Mussolini's War Against the Secret Society Rids The Island of an Evil Many Centuries Old

By ARNALDO CORTESI

ROME.

THE Mafia, one of the most picturesquely villainous secret societies the world has ever seen, exists no more. After holding absolute sway over Sicily for centuries, murdering, blackmailing, terrorizing the luckless inhabitants, it has met its fate [illegible] of the Fascist Govern-

honor, a certain appearance of robbing the rich to benefit the poor, that won it the support of the lowest classes.

The Mafia found adherents in all classes of society. From men of ancient lineage and noble birth to the lowest ruffians of the cities and the peasants of the country, all found it profitable to enter a secret association which gave its members

fascination in the eyes of the lowly Sicilians. Despite ghastly cruelties it often won popular sympathy, and many Sicilians served long terms in prison rather than commit the "infamy" of giving information to the police. The appellation of "giovane d'onore"—"a young man of honor"—given to one who refused to assist [illegible]

the Sicilian national spirit alive, and boasted among its members men eminent for birth or position.

In that early period the Mafia creed held that it was cowardly and disloyal to appeal to the authorities of the oppressor for redress of any wrong. The Mafia took it upon itself to dispense a rough and ready justice rather than permit the Sicilians to have dealings with the justice of the Spaniards. Any one who appealed to the regular courts was branded as infamous and dealt with accordingly. This creed, drilled into the Sicilians for centuries, became a part of their mental make-up.

The Mafia in time lost its patriotic character and continued as a criminal organization. In the latter half of the last century, when Sicily became a part of the Kingdom of Italy and any justification for such a body as the original Mafia ceased to exist, the quality of the society deteriorated until the members were ordinary gangsters and the leaders cold-blooded criminals who thought no more of ordering the murder of an enemy than of killing a fly.

The old tradition of keeping one's wrong to one's self was continued. Indeed, the Mafia took good care to prevent any backsliding in this respect by inaugurating a reign of terror; it exacted bloody vengeance of any one who dared to inform the police of its doings. The strangle hold the Mafia had over Sicily translated itself into political power. The Mafia became a strong electoral machine without the acquiescence of which no Sicilian candidate could hope to enter the Italian Parliament. It is even said that two Cabinet Ministers of the past were Mafia leaders.

[illegible]

lives were worth. There are cases on record in which men were stabbed to death in broad daylight in crowded streets and no one would admit *knowledge of the* crime, though the name of the murderer was known to the whole city. The tradition of silence and secretiveness backed up by fear was so strong that nothing appeared capable of shaking it.

The Government at various times made determined efforts to break the grip of the Mafia. The best-known instance is the trial and the conviction of a member of Parliament, who was also a Mafia chief, for the murder of the banker Notarbartolo in 1892. The trial took place ten years after the death and was held out of Sicily, to remove Judges, juries, lawyers and witnesses from the menace of the Mafia's vengeance. Such efforts, however, were sporadic and, being always directed against some great chief instead of against the rank and file, never succeeded in crushing the order.

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LANDOWNERS, whose fields, crops and cattle were constantly exposed, were the ones most often singled out for the society's criminal activities. "Contributions" were assessed by the Mafia in proportion to the landowner's presumed wealth. Any refusal to pay was followed by reprisals, crop burning, cattle maiming and, in extreme cases, death. The landowners were helpless; the mere suspicion that they might appeal to the police for protection was sufficient for the death penalty, which was carried out with clocklike precision, to be pronounced against them. They were also required to employ a certain number of men chosen by

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> The investigations revealed that in previous years, the gangs of Piana dei Greci and San Giuseppe Jato had collaborated to organize clandestine departures for America at the price of six thousand lire per emigrant. The investigators described the mafia as a 'horrible pestilence' that spread not only in western Sicily, but also 'across the ocean its suffocating stench,' and said it was 'perfectly organized' according to the principle of the division of labor: some procured false documents at the municipal office of the town and others in Palermo, there were those who organized the trips via Tunis-Marseille, those who waited for the clandestine immigrants at the arrival point to provide for their accommodation, and it was even guaranteed that the sums paid would be wholly or partly refunded to those who, caught by US surveillance, were sent back.

The institutional continuity theory that we test empirically in this work according to which the exodus of Mafia leaders allowed for the structural organization of previous minor criminal Italian-American networks into the American La Cosa Nostra (LCN) is based on several official U.S. sources. The FBI Law Enforcement Bulletin (February 1987, pages 4-6) identifies explicitly the Mori Operation as the trigger for the arrival of the high-ranking Mafiosi that later formed the base of the American La Cosa Nostra:

> "Although Mussolini announced to the world in 1927 that the Mori Operation was a success and that the Sicilian Mafia had been eliminated, he was wrong. In fact, the strong roots of the Sicilian Mafia remained. The high-ranking Mafiosi either joined the 'enemy' (the Fascist Party) or emigrated to the United States and formed the base of the American LCN. Some of the more notorious individuals that arrived in the United States at this time were Carlos Gambino, Stefano Maggadino, Joe Profaci, Joe Magliocco, Mike Coppola, and Salvatore Maranzano. [...] Salvatore Maranzano, when he came to New York from Sicily in 1927, announced that he was a direct representative of the boss of the Palermo Sicilian Mafia, and one of his goals was to organize the American crime families, including the Irish and Jewish gangs, under one leadership. Maranzano, by 1928, had everyone in line with his idea except Joe Masseria, who led a group of men that had all, with a few exceptions, been in America since childhood. The resulting 3-year conflict, called the Castellammarese War, pitted the Sicilian Mafia-dominated faction lead by Maranzano against the American Mafia-dominated faction led by Masseria. On April 15, 1931 , the war ended when Masseria was gunned down in a Coney Island restaurant, having been lured there by Lucky Luciano and Vito Genovese, who had secretly struck a deal with Maranzano. Two weeks later, Maranzano convened a meeting in the Bronx of all Mafia members. This became the first official meeting of the American La Cosa Nostra. Joe Valachi , who was a Government witness , attended this meeting and told investigators that Maranzano set forth for all present the official code or principles of Cosa Nostra (Our Thing)."

The Reagan's commission on organized crime (1986) in its report ("The impact", pg. 52) mentions 500 Sicilian mafia members fleeing to the US after the "purge by Mussolini":

> The La Cosa Nostra in Italy has undergone several periods of severe repression, including a purge by Mussolini in the 1920's. American groups became safe havens for Sicilian members during these periods of difficulty. During the 1920's, a formative decade for the La Cosa Nostra in this country, at least 500 Sicilian members fled to the United States. Among them were Joseph Bonanno, Carlo Gambino, Stefano Maggadino, and Joseph Profaci—men who were among the leadership of U.S. organized crime during the next 40 years. Relations between the U.S. and Sicilian La Cosa Nostra groups remained close through 1950 and may have influenced one another's leadership changes and criminal activities.

In this paper, we empirically analyze the long-term impact of the Mori raids on mafia presence in the United States. We construct temporally constant micro-neighborhoods based on U.S. census data. This approach enables the identification of neighborhoods with pre-existing networks of Italian immigrants originating from the 32 Sicilian municipalities that were targeted by Mori. The underlying intent-to-treat assumption is that mafiosi expelled during the raids were more likely to migrate to these established Italian-American communities, where they could leverage existing social ties for reintegration (Card 2009; Sviatschi 2022). We then show empirically that later mafia presence in the U.S. is systematically associated with neighborhoods where these displaced mafiosi likely settled.

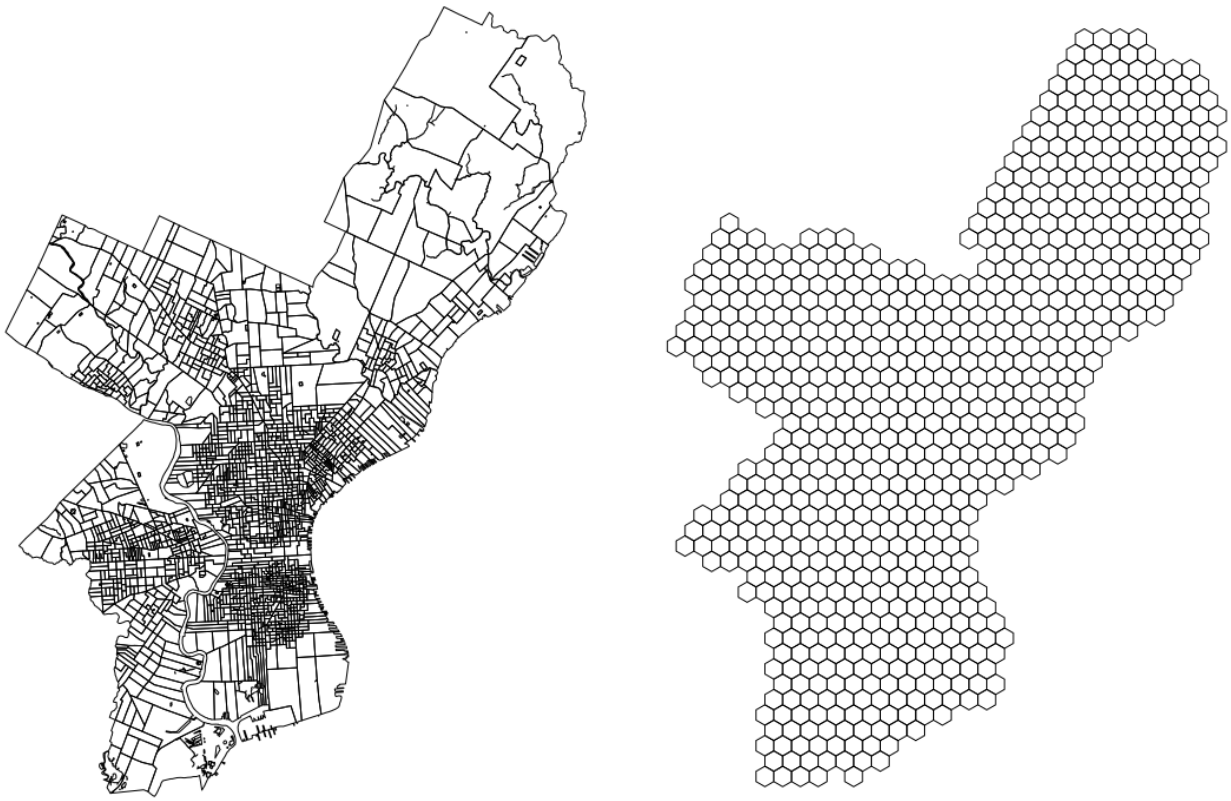
3 Data

To address these questions related to the migration of the Sicilian mafia to America, we leverage a wealth of historical and contemporary data. Primarily, we employ:

- both restricted and unrestricted versions of the full count 1900-1940 US censuses made available through IPUMS
- the Social Security Administration's Numerical Identification System Mortality Files (Numident) made available by NARA
- maps of historical Census enumeration districts provided by the Urban Transition Historical GIS Project (Logan et al., 2015)
- historical redlining maps made available by the Mapping Inequality project (Nelson et al., 2023)
- digitized records of an FBI report on the US mafia (Mastrobuoni 2015)
- lists of individuals identified as incarcerated in 1900-1940 censuses from Abrimitzky et al. (2024)
- records of Chicago homicides in the 1920s from Bienen and Rottinghause (2001)
- additional data provided by Opportunity Insights (Chetty et al., 2018)

Our primary strategy entails employing a novel cross-walking algorithm to identify the Census records of individuals in the Numident records born in identifiable Sicilian commune targeted by Mori's raids. This algorithm allows for name misspellings and anglicizations, slight discrepancies in age, and, when available, leverages information on the names of parents. Further details of the matching algorithm can be found in the appendix. Overall, we achieve a 17% match rate, comparable to the match rate from most same-individual across-census algorithms. These individuals, along with other Sicilian-born individuals, are mapped to their home enumeration districts and are tracked across time using the new Census Tree data and algorithm, which itself achieves up to an 89% match rate (Buckles et al. 2024). These enumeration districts are then layered into temporally-constant equally sized hexagons, as in Shertzer et al. (2016). These hexagons are roughly 1.67 square kilometers in area with an average population of 2500. These are meant to be comparable to modern Census tracts. They serve as the units of analysis in which all of the paper's results will focus. In total we are able to replicate this strategy for eleven of the US's largest cities of the era: Baltimore, Boston, Brooklyn, Chicago, Cincinnati, Cleveland, Detroit, Manhattan, Philadelphia, Pittsburgh, and St. Louis.

Figure 3, as an example, depicts the 1920 enumeration district map of Philadelphia on the left and the corresponding grid of equally sized hexagons that we map this to to employ as our primary units of analysis.



((a)) Enumeration district map ((b)) Hexagon grid map

Figure 3: The map on the left depicts the 1920 Census enumeration districts of Philadelphia. The map on the right depicts the grid of equally sized hexagons that we overlay to use as our primary units of analysis.

Our first set of results, documenting the emergence of the American arm of the Sicilian mafia, La Cosa Nostra, in the enclaves of immigrants from the small set of the 32 villages targeted by Cesare Mori relies on the digitized records of a 1959 FBI report on the American mafia, previously employed in Mastrobuoni (2015). We first replicate our Numident matching algorithm for the set of 810 mafiosi identified in the report- identifying the 1910 and 1920 residence locations of 17% or 142 of the recorded 1959 mafiosi. We then geocode all addresses associated with the mafia of the era, assigning those addresses to their constituent hexagons. We proceed by comparing the spatial distribution of *future* mafiosi/mafia locations to that of 1920 (pre-Mori raids) enclaves of immigrants from commune Mori would target in the subsequent decade. This procedure is detailed in a subsequent section.

Subsequent analysis data sets are constructed by mapping other spatial data onto our hexagon maps. First, we overlay the Home Owners' Loan Corporation maps of the late 1930s (so called "redlining maps") with our hexagon grids, to test for differential rates of exclusion from the formal financial sector for "Mori" neighborhoods. Effectively, we seek to test whether in the short term the banking sector capitalized mafia-criminality into their neighborhood assessments. We proceed by overlaying contemporary zip code and Census tract maps over the hexagons to merge in data from Opportunity Insights to allow for the

analysis of long run contemporary outcomes.

In the next section we outline the details of each empirical strategy employed, alongside results.

4 Spatial Distribution of Future Mafia Activity

To begin, we provide evidence that the American mafia of 1959 was inextricably linked spatially to the locations of early immigrants from the Sicilian commune targeted by Mori's raids, before those raids occurred. Mori's raids were conducted in the latter half of the 1920s. As such, in this exercise we focus on the 1920 distribution of immigrants in the US originating from the commune his forces would later target. Card (2009) laid the foundation for what is now a seminal result in the economics of migration: later waves of immigrants tend to settle among prior immigrants from their home area. Historians and law enforcement have suggested that mafia members fled Sicily in response to the raids and entered the United States to form the roots of the American LCN. Thus, if this is true, we should observe a strong relationship between the pre-raid locations of "Mori commune" immigrants and locations later associated with the mafia.

Here, we have two spatial distributions that we are interested in relating to these 1920 immigrant enclaves. First, we are interested in the 1920 locations of the men who would grow to become *known* mafia bosses by 1959. Second, we are interested in the spatial distribution of locations associated with mafia activity in 1959.

The first of these distributions provides us with a test of the migration of criminal capital hypothesis. The locations of mafia bosses 40 years prior largely corresponds to their childhood or young adult residences. If we are to observe future mafiosi disproportionately arising from the same neighborhoods where the old world mafia was likely to settle when displaced from Sicily, we can attribute this to the shock of an arrival of criminal capital in the 1920s providing the infrastructure and career paths which were able to grow these men into mafia bosses decades later.

The second distribution of interest, the known locations of mafia activity from the 1959 mafia report, is able to provide insights into the locational preferences of the mafia. Organized crime bestows benefits upon the communities in which it locates (Murphy & Rossi 2020). Arguably these benefits are bestowed as a means of incentivizing local cooperation with their activities (Benzecry et al. 2024). It is intuitive to assume that due to this "symbiotic" relationship between organized crime and local communities, that the operations of mafias and similar criminal actors would concentrate within the communities in which they arise form, where support is initially strongest.

To test the relationships between these spatial distributions and the 1920 locations of "Mori commune" immigrants in America, we employ a test of randomization inference. We map immigrants, matched 1920 Census records of the 1959 mafiosi, and geocoded locations of 1959 mafia activity to their constituent hexagons. After calculating both the proportion of future mafia bosses' 1920 residences and 1959 known mafia locations that are in the hexagons containing immigrants originating in "Mori commune" in Sicily prior to Mori's raids, we construct an empirical p-value for each proportion through randomization inference. We draw random placebo sets of "Mori immigrant hexagons" and calculate the proportion of

future mafiosi locations or future mafia activity locations present within that set. After iterating through 1000 randomized placebo samples, we are able to calculate an empirical p-value from distribution of placebo proportions. We then proceed to replicate this exercise on progressively stricter super-sets from which our placebo samples are drawn.

We begin with the universe of all hexagons in our 11 cities, then proceed to limit our sample to only above-median Italian-born proportion districts, districts with identifiable (from our Numident crosswalk) Sicilian born immigrants, districts that are above-median Italian with identifiable Sicilians, and lastly we replicate all of those analysis limited to the cities with the most identifiable 1959 mafia activity (Brooklyn, Chicago, Manhattan, and Philadelphia). Table **??** depicts all results from this randomization exercise. Figures 4 and 5 visually depict the results from these exercises corresponding to limiting our random sampling to the neighborhoods with the densest proportions of Italian-born immigrants that also contain Sicilian-born immigrants in the three cities that housed the most mafia activity in 1959.

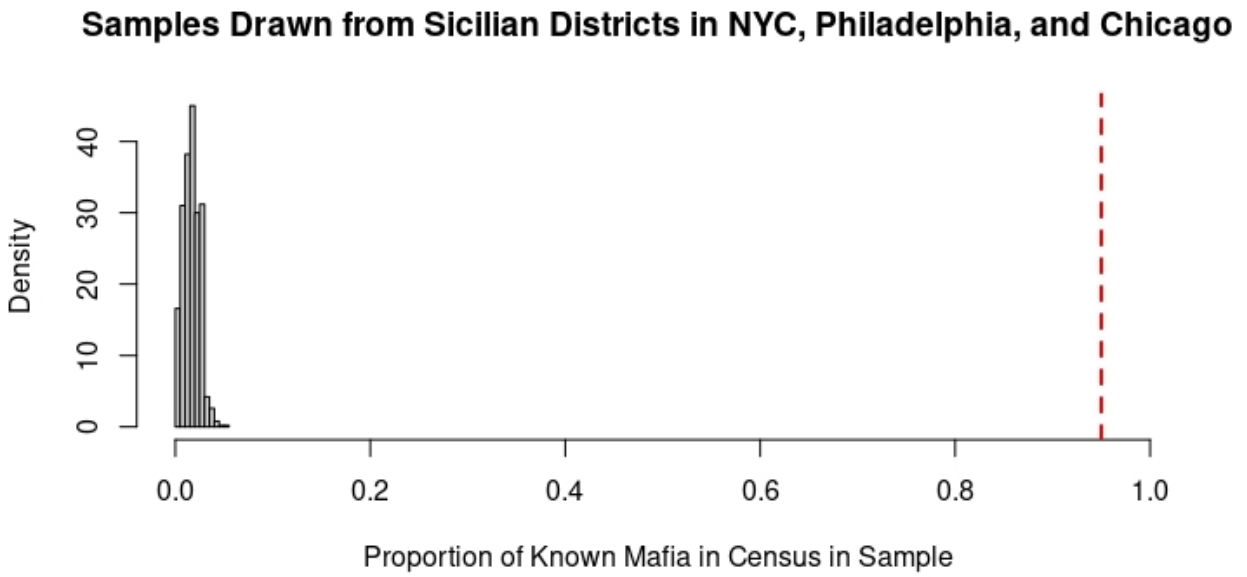


Figure 4: Figure depicting the observed proportion (the red dashed line) of known 1959 mafia members, that were able to be matched to the 1920 Census, that lived in neighborhoods housing immigrants from "Mori commune" in 1920. The distribution to the left depicts the proportion of those mafiosi living in randomly drawn samples of neighborhoods drawn from the most-Italian neighborhoods that also housed Sicilian immigrants in 1920. For this figure, the sample is limited to the three cities that were home to the most mafia activity and mafia members in 1959.

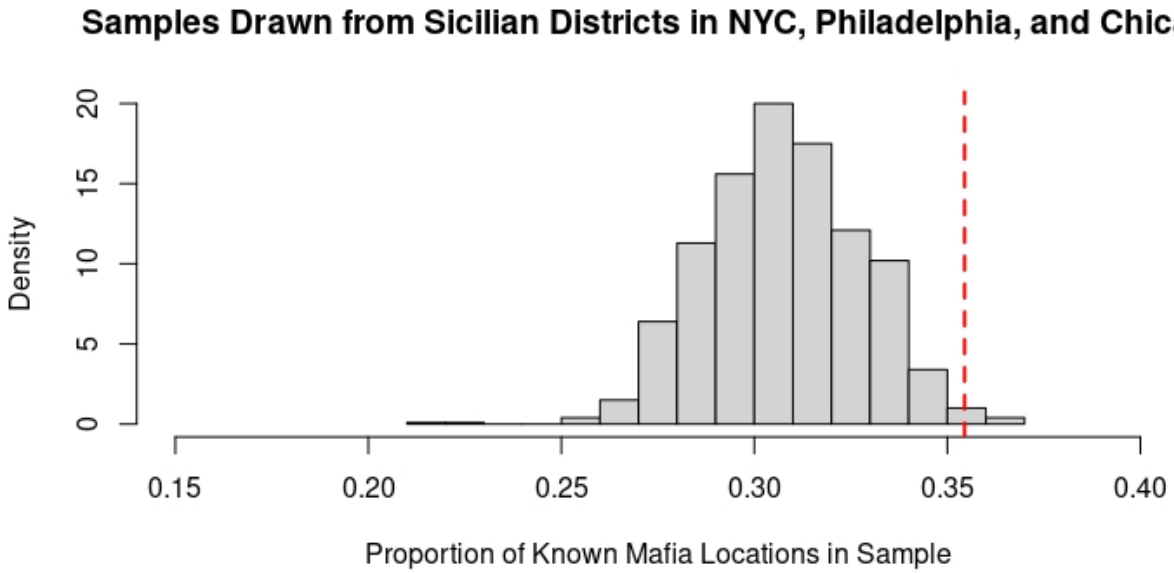


Figure 5: Figure depicting the observed proportion (the red dashed line) of geocoded locations of mafia activity in 1959 that were in neighborhoods housing immigrants from "Mori commune" in 1920. The distribution to the left depicts the proportion of those geocoded locations that are in randomly drawn samples of neighborhoods drawn from the most-Italian neighborhoods that also housed Sicilian immigrants in 1920. For this figure, the sample is limited to the three cities that were home to the most mafia activity and mafia members in 1959.

Figures 4 and 5 provide evidence of a strong linkage between the pre-raid locations of "Mori immigrants" in US cities and the spatial distribution of the American mafia 40 years later. We interpret this as evidence of an inextricable link between the mafia in America and the 32 Sicilian commune from which those immigrants originated. The men who would come to be in power of the mafia years later disproportionately arose from the enclaves of those immigrants- with observed proportions far exceeding anything close to what randomization could provide even with the strictest sampling restrictions. This result is reminiscent of Sviatschi (2022), where it was demonstrated that youth in El Salvador who were exposed to the arrival of deported US gang members were more likely to engage in gang activity themselves later on. Similarly, the locations associated by the FBI with the American mafia of 1959 were also disproportionately located within those same neighborhoods that housed pre-raid "Mori" immigrants.

5 Short Range Outcomes

5.1 Criminality

The influx of Sicilian criminal capital into the United States in the 1920s coincided with the prohibition of alcohol. The period of prohibition has notoriously been associated with

rampant criminality, gangsterism, and an increase in market-based violence (Owens 2014; Garcia-Jimeno 2016). The prevailing narrative of the era is that organized crime in the US was able to capitalize on the newly illicit market for bootleg alcohol to grow in power and influence (Thrasher 1927; Demleitner 1994). Given that illicit markets are absent formal protections over property rights, there's a marked tendency for actors in these markets to find protection and governance from organized criminal groups (Konrad & Skaperdas 2012; Porreca & Thompson 2024). Mafiosi fleeing Sicily entered the US at a moment ripe with criminal opportunity. These Sicilians, representing highly skilled criminal capital, entered a large and profitable illegal market. The entrance of new competitors into criminal markets has been shown in other contexts to lead to increases in violence as new entrants compete with established actors for a share of the market (Sobrino 2019; Bruhn 2021). Here, we document this same increase in violence as these Sicilian mafiosi fleeing Mori's raids settle into US cities and begin to establish themselves in the illicit markets for alcohol.

First, we focus specifically on the city of Chicago. This city gained a reputation in the era as a hub for prohibition-spurred gang violence (Thrasher 1927). We employ records of the city's homicides, kept by the Chicago Police Department and digitized as the Chicago Historical Homicide Project (Bienen & Rottinghaus 2001). We were able to successfully geocode 4377 homicides occurring between 1920 and 1930, tying each to its constituent city hexagon from this paper's previous section. To begin, we employ a simple difference-in-differences design to examine changes in homicides in the areas with pre-existing networks of Mori commune immigrants following the influx of Sicilian criminal capital. Since we are unable to directly observe the actual arrivals of these expelled mafiosi, we treat 1926, the year Mori led his famous January raid of Gangi, as the beginning of our post-treatment period. Column one of the table below depicts the results of estimating the impact on the Mori neighborhoods in Chicago. It is notable that there is no detectable change in the number of homicides occurring in the Mori neighborhoods. However, when we turn our attention instead to those hexagons bordering Mori neighborhoods we observe a 21% increase in violence above their pre-period mean (Column 2). Similarly, those neighbors see a spike in homicides labeled by detectives of the era as related being related to organized crime. Notably, there were almost no organized crime related homicides in these neighborhoods before the raids.

	Dependent Variable		
	Total Homicides (Mori)	Total Homicides (Neighbors)	OC Homicides (Neighbors)
Post Raids	-0.072	0.143**	0.018**
	(0.067)	(0.059)	(0.008)
Hexagon FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Observations	11,880	11,880	11,880
DV mean	1.11	0.68	0.007
Adjusted R^2	0.67	0.67	0.06

Standard errors clustered by city in parentheses

$***p < 0.001, **p < 0.01, *p < 0.05$

Table 1: Table depicting estimated impacts of Mori's raids in Sicily on homicides in neighborhoods in Chicago.

We proceed to depict this neighbors result for pre-period homicides graphically, employing synthetic difference-in-differences estimation. This is depicted in the figure below. Overall, our estimated effect on neighbors of Mori districts is 0.117 with a p value 0.012, representing a 17.1% increase above their pre-period mean.

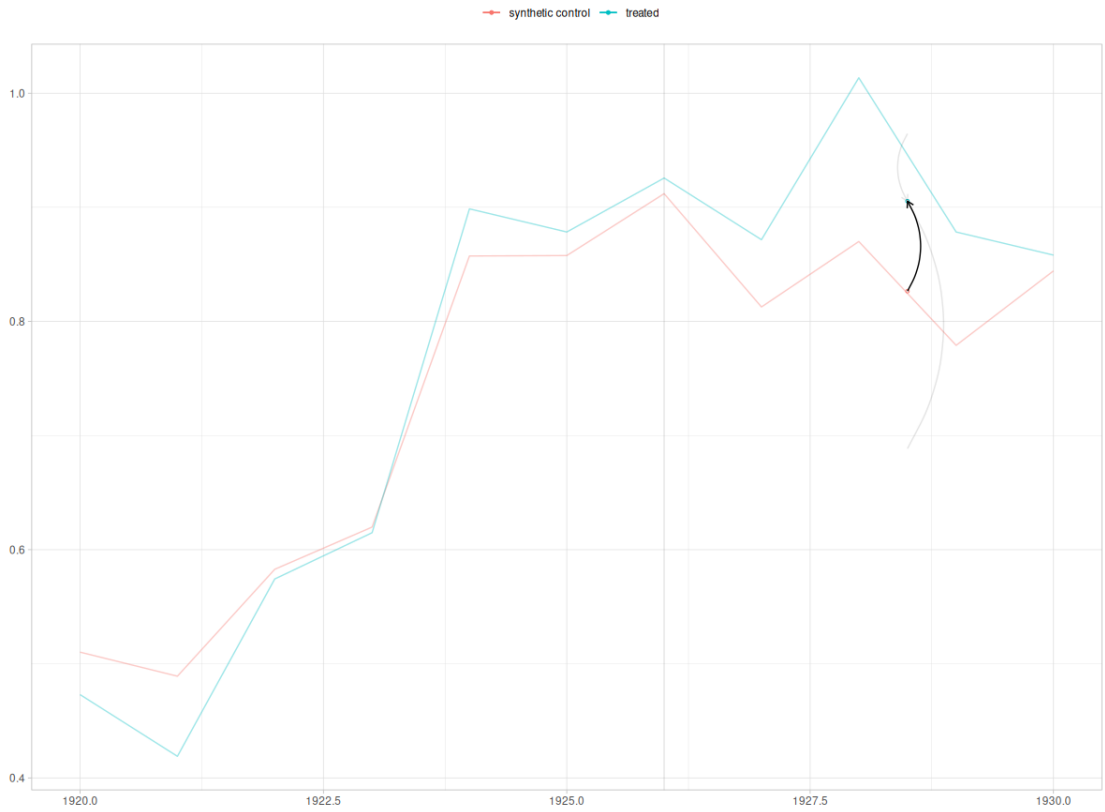


Figure 6: Figure depicting synthetic difference-in-differences estimates of the impact of Mori's raids in Sicily on neighboring hexagons in Chicago.

We interpret this increase in violence seen in the hexagons bordering Mori neighborhoods as evidence of competition for control of the criminal underworld as these immigrant mafiosi seek to expand their influence outwards. These expelled mafiosi found a welcoming home for themselves nested among family and familiar faces in their home commune immigrant enclaves. However, as they began to interact with the American criminal underworld, competing for their share of the market for illicit alcohol, increases in violence were observed in the neighborhoods they first sought to expand into. We proceed to examine another metric that proxies criminality in these Mori hexagons: the incarceration rates of their residents.

To construct neighborhood level incarceration rates, we begin with the universe of census identification keys for individuals identifies as being incarcerated in the 1900-1940 US censuses by Abrimitzky et al. (2023). We then employ Census Tree matching algorithm of Buckles et al. (2024) to find all records for these individuals across all censuses. With this information we define the incarceration rate of neighborhood i in census year t as:

$$IncRate_{it} = \frac{N_{it}^{inc}}{N_{it}^{match}} \tag{1}$$

In the above formulation, N_{it}^{inc} represents the population of individuals t that were resident in location i at time $t-1$. N_{it}^{match} represents the number of residents of location i in time $t-1$ whose time t census records are able to be identified with Census Tree. Thus, the incarceration rate that we employ is equivalent to the the proportion of the previous census year's matchable residents of the hexagon that are incarcerated in the present year. The figure below depicts event study estimates of the impact of the arrival of criminal capital on incarceration rates in the hexagons where immigrants from their home Sicilian commune already were living. Since all of the raids occurred between the 1920 and 1930 censuses, 1930 serves as our first treated time period. It is notable, that by our last census in 1940 a large increase in incarceration rate is observed for these neighborhoods. This is equivalent to an XX% increase above the pre-period mean for these neighborhoods.

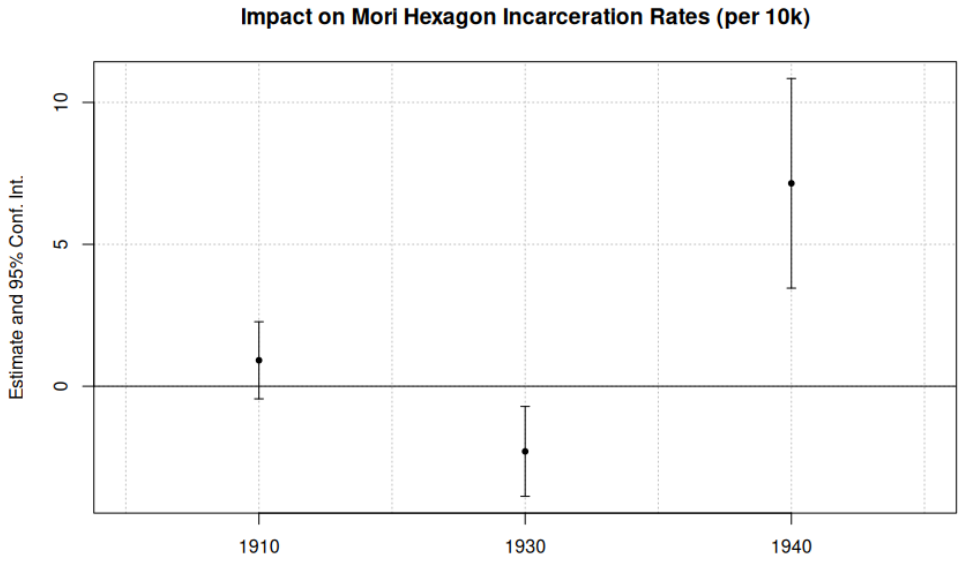


Figure 7: Event study depicting the increase in incarceration rates in Mori hexagons following the influx of criminal capital.

5.2 Redlining

Here we seek to address whether during the period following Mori's raids in Sicily, and the arrival of expelled mafiosi in America, contemporary financial institutions capitalized concerns regarding criminality into their assessments of the neighborhood enclaves of Mori commune immigrants. In the late 1930's a federal agency called the Home Owner's Loan Corporation (HOLC) classified urban neighborhoods across the US based off of their relative riskiness of investment (Aaronson et al., 2021). These classifications and the maps based on them famously incorporated race and immigration characteristics into their underlying assessments (Fishback et al., 2020). HOLC maps were a strong influence on (the largely no longer surviving) Federal Housing Administration maps, which were directly used to assess the credit-worthiness of insured loans (Light 2010). Neighborhoods marked as degraded were explicitly barred from having mortgages underwritten (Light 2010). The maps, and their impacts on lending behavior from formal financial institutions led to long lasting adverse housing market outcomes, namely lower rates of home ownership, lower housing values, lower rent levels, and higher rates of vacancy across subsequent decades (Aaronson et al., 2021). Some of these long run adverse impacts, estimated at the hexagon level, are depicted in the table below.

	Dependent Variable			
	Median Income (1990)	Housing Price Index (2020)	College Rate (2000)	Poverty Rate (1990)
D-Grade	-5,453.43***	-81.52*	-0.031*	0.101***
	(1,113.68)	(41.46)	(0.010)	(0.014)
City FE	Yes	Yes	Yes	Yes
Observations	4,946	3,992	4,946	4,946
DV mean	23,670	533.1	0.190	0.208
Adjusted R^2	0.147	0.320	0.109	0.207

Standard errors clustered by city in parentheses

$***p < 0.001, **p < 0.01, *p < 0.05$

Table 2: Table depicting long run adverse impacts of redlining estimated at the hexagon level.

Very few of these HOLC neighborhood descriptions explicitly mention crime. However, hundreds of neighborhoods achieving the lowest rankings ("definitely declining" and "hazardous") explicitly mention the presence of Italian immigrants as an adverse feature of the neighborhood. More over, one of the Mori immigrant enclaves in Cleveland, Ohio contains the following neighborhood description:

> This well-known Italian settlement has gained notoriety from the activities of the so-called "Mayfield Road mob" which figured prominently in gangster activities during prohibition and is said to be still active (Nelson et al., 2023).

While because of inconsistent recording there is not enough information regarding concerns over criminality in the HOLC assessments to pursue the question empirically, we are able to test whether neighborhoods housing "Mori" immigrant enclaves were systematically "redlined" at differential rates. Here we specify a simple OLS regression, controlling for the neighborhood's Italian-born population proportion and the presence of any Sicilian born immigrants to see whether these "Mori" neighborhoods were more likely to achieve the lowest grade in HOLC assessments. The results from this regression are displayed in Table 5.

Dependent variable	*HOLC Map Grade D ("Redlined")*			
	Model 1	Model 2	Model 3	Model 4
Mori	0.336***	0.293***	0.179**	0.163**
	(0.065)	(0.076)	(0.057)	(0.063)
Italian Population		0.369***		0.191*
		(0.108)		(0.092)
Sicilians Present			0.229***	0.221***
			(0.049)	(0.052)
City FE	✓	✓	✓	✓
R-squared	0.150	0.154	0.178	0.179
DV Mean	0.381			
Observations	4,591			

Note: Standard errors are reported in parentheses and are clustered at the city level. Significance levels: $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$

Table 3: Table depicting regression results demonstrating the increased probability of Mori neighborhoods being redlined.

Even after controlling for the presence of Sicilians and the proportion of a neighborhood that is Italian-born, neighborhoods that housed immigrants from "Mori commune" in 1920 faced a more than 40% higher risk of being redlined 15 years later. Aaronson et al. (2021) discusses some of the profound long run impacts that redlining, cutting neighborhoods off from formal lending, had on urban neighborhoods across subsequent decades. In the next sections, we will document that despite being "redlined" at higher rates than other comparable neighborhoods, these "Mori" enclaves were able to excel economically in the long run- a success that we attribute in part to the positive economic spillover effects of mafia presence.

5.3 Economic Growth

Despite the perceptions of criminality and degradation that were laid upon these Mori immigrant neighborhoods following this influx of criminal capital, in the short run some positive economic outcomes were observed. Matranga et al. (2024) demonstrates that in the 1960s and 1970s the mafia in America was able to infiltrate labor unions, using this as a staging ground for large scale wealth accumulation and the placement of likely non-criminal Sicilian-Americans into high paying jobs. The primary union infiltrated was the Teamsters Union, a union primarily representing truck drivers and warehouse workers. We mirror this result, demonstrating that following the influx of Mori criminal capital there was a modest increase in the employment of Italians living in Mori hexagons in the transportation sector. The table below shows the results of difference-in-differences estimation.

	Italian-American Trans. Employment
DiD Coef, Post-Mori	0.011**
	(0.0005)
Mean Dep. Var	0.027
Hexagon FE	Yes
Year FE	Yes
Adjusted R^2	0.262
N	2,348

SE clustered by hexagon in parentheses. *** p¡0.001, ** p¡0.01, * p¡0.05

Table 4: Table depicting difference-in-differences results showing the increase in Italian-American employment in the transportation sector in Mori neighborhoods.

This effect is equivalent to a modest 4.2% increase in the employment of Italians in this sector. Bearing in mind that we are looking at a period decades before the mass infiltration of the Teamsters Union by the mafia documented in Matranga et al. (2024), we interpret this result as evidence of the initial shoring up of power by mafia in this sector- a sector with immense importance during an era in which bootlegging allowed the mafia to grow in power and prominence. The figure below depicts an event study of this result.

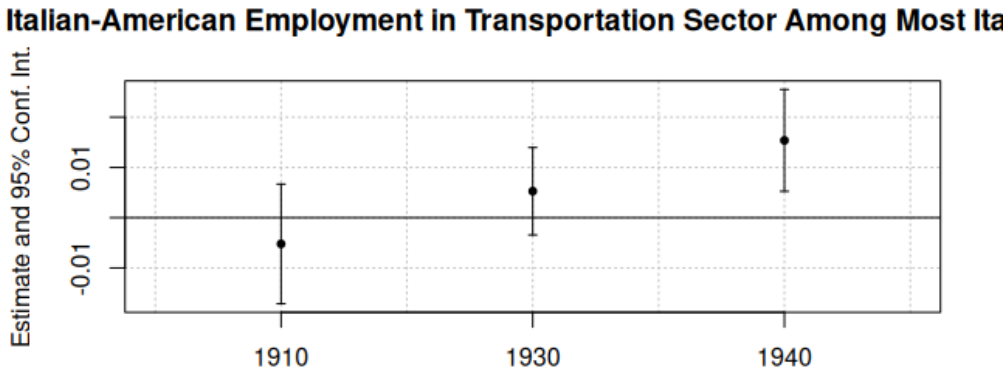


Figure 8: Figure depicting event study results showing the increase in Italian-American employment in the transportation sector in Mori neighborhoods.

Next, we proceed to examine one of the few metrics of historical wealth accumulation available to us for this era: rates of home ownership. The figure below presents event study results demonstrating that these Mori hexagons experienced a substantial increase in rates of home ownership following the influx of criminal capital. It appears that once the mafia embedded themselves in these neighborhoods and accumulated some wealth, likely through criminal activities in the markets for illegal alcohol, that they invested directly into their neighborhoods.

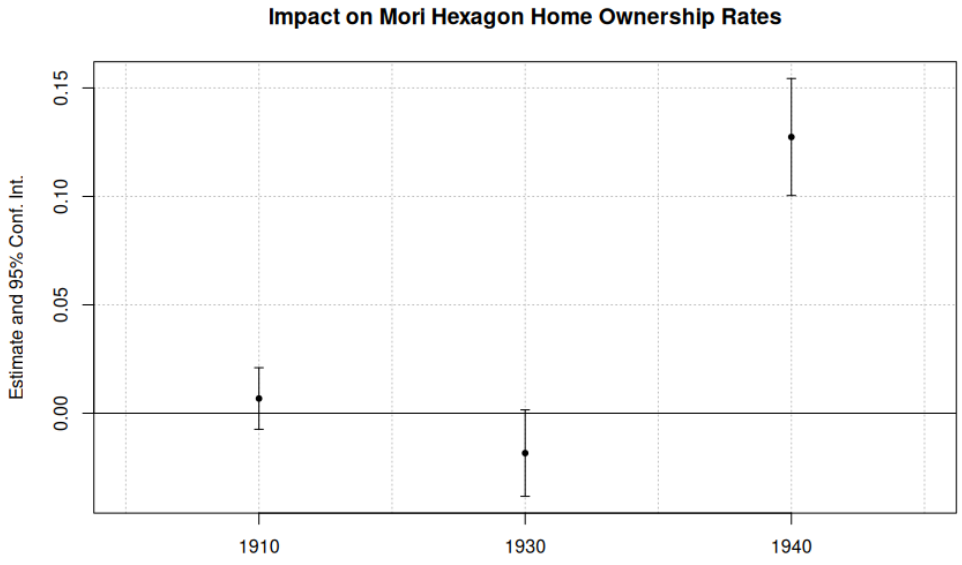


Figure 9: Figure depicting event study results showing the increase in home ownership rates in Mori hexagons following the influx of criminal capital.

6 Long term outcomes

Here, we document long term impacts of the mafia's presence in urban neighborhoods and showcase how these neighborhoods bucked the adverse trends experienced by most "redlined" neighborhoods. In doing so, we showcase results largely similar to those of Murphy & Rossi (2020), albeit in a vastly different setting- namely that the mafia wrought real and tangible long term benefits to the communities that it was embedded in.

To address this question, we regress long term outcomes, drawn from Opportunity Insights data (Chetty et al., 2018) on an indicator for 1920 "Mori commune" immigrant presence. The results are broadly similar when instead adopting an instrumental variables approach, instrumenting 1959 mafia activity locales with the "Mori immigrant" instrument. Figure 10 graphically depicts some of these reduced form results. Models 2 and 3 from that figure show results with the inclusion of covariates to control for a neighborhood's 1920 Italian-immigrant proportion and the presence of Sicilian immigrants.

These results demonstrate that even when compared to similarly Italian 1920 neighborhoods that also housed Sicilian immigrants, better outcomes were achieved decades later in the areas where the mafia established roots. Namely, more of the neighborhood had achieved college degrees and children born in the neighborhood between 1978 and 1983- 50 years after Mori's expulsion of the mafia from Sicily- were much more likely to be employed in young adulthood. These, along with other long term outcomes, showcase the long term impacts brought by the influx of an alternative form of capital into these neighborhoods and mirror the results shown for cartel villages in Mexico in Murphy & Rossi (2020).

One result here bears particular attention. Children born in these neighborhoods have a

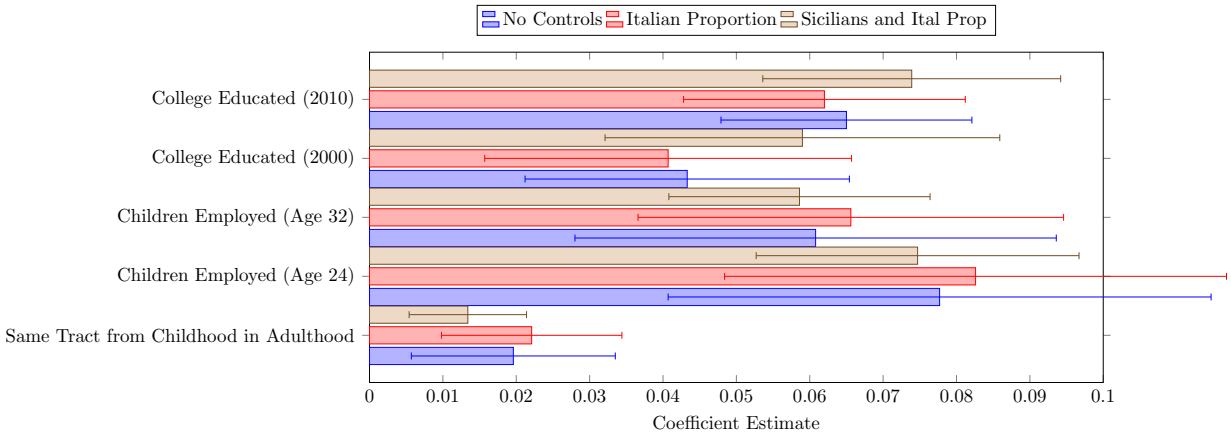


Figure 10: Estimated long-term impacts with confidence intervals, cross-sectional with city fixed effects

much higher likelihood of remaining in the neighborhood that they were born than children born elsewhere. This hints towards the primary mechanism that we believe allowed for the Mori neighborhoods to have such better outcomes in the long run. Residents accumulated wealth and remained in their neighborhood. Capital gained through criminal activity was reinvested in the locales that provided safety and security for mafiosi. This ownership and insularity fostered continuous reinvestment, which in the long run of the following century led to the positive economic outcomes that we observe.

In the table below, we present evidence that the Mori hexagons were able to buck the trend of resident out-migration that plagued other redlined neighborhoods. Namely, unlike other redlined neighborhoods Mori districts did not grow less white over time. These neighborhoods did not experience the white flight and demographic transition that occurred across most of urban America through the 1950s to 1970s as white Americans en masse relocated to the suburbs. Residents of Mori neighborhoods disproportionately remained in place.

Dependent variable	*Hexagon Proportion White*				
	Model 1	Model 2	Model 3	Model 4	Model 5
Mori	-0.0229^{**}	-0.0165	-0.0359^{**}	-0.0321^{**}	-0.0249^{***}
	(0.0097)	(0.0092)	(0.0087)	(0.0078)	(0.0045)
Redline Grade D		-0.0809^{***}	-0.0908^{***}	-0.0847^{***}	-0.0852^{***}
		(0.0106)	(0.0095)	(0.0102)	(0.0122)
Mori and Redlined			0.0431^{***}	0.0469^{***}	0.0416^{***}
			(0.0071)	(0.0081)	(0.0079)
Sicilians (in 1920)				-0.0329^{*}	-0.0333^{***}
				(0.0149)	(0.0072)
City FE	✓	✓	✓	✓	
Year FE	✓	✓	✓	✓	
City by Year FE					✓
Adjusted R-squared	0.147	0.178	0.180	0.183	0.210
DV Mean			0.916		
Observations			36,774		

Note: Standard errors are reported in parentheses and are clustered at the city level. Significance levels: $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$

Table 5: Table depicting OLS results of regressions of HOLC

Next, we proceed to some of the network-based measures of social capital from Chetty et al. (2018). These measures, constructed using data from Facebook are meant to capture features of the social networks of residents. We map this data from the zip-code level it was provided at initially onto the same hexagons.

	Social Capital Measure		
	Exposure	Clustering	Economic Connectedness
1920 Mori-Immigrant Presence	0.089***	0.004***	0.059**
Presence	(0.015)	(0.001)	(0.016)
City FE	Yes	Yes	Yes
N	4,946	4,946	4,946
Adjusted R^2	0.337	0.153	0.207

Standard errors clustered by city in parentheses. *** p¡0.001, ** p¡0.01, * p¡0.05

Table 6: Table depicting regression results showing differences in social network characteristics of Mori hexagons a century after the influx of criminal capital.

These results show that residents in these Mori neighborhoods have higher rates of exposure to high income individuals and higher rates of cross economic status network connections. Further, in line with our previous results, there is a higher degree of network clustering. This means that social networks in these Mori neighborhoods are closer-knit than others. this can be viewed as being in line with previous results demonstrating that individuals in this neighborhoods remain there throughout life.

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