

# Beyond the Mafia: The Legacy of Feudalism and Sicilian Low Social Capital \*

Caterina Alfonzo      Mara P. Squicciarini  
(University of Bologna)      (Bocconi University and CEPR)

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## **Abstract**

This paper provides a novel explanation for the causes of Sicilian social and economic backwardness, beyond the widely studied phenomenon of the Mafia. Using a newly constructed city-level dataset, we show that the experience and type of feudal institutions predict local social capital even before the rise of the Mafia. We suggest that Sicilian feudalism favored the prevalence of socially isolated nuclear families, hampering the development of interfamily solidarity. Finally, we find that while the emergence of the Mafia is itself predicted by the feudal experience, only the latter is negatively associated with today's social capital and economic progress.

*JEL: K42, N43, O10, Z10*

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# 1 Introduction

The Sicilian Mafia has typically been considered the main cause of economic and social underdevelopment in the region, affecting several aspects of people’s life and behavior.<sup>1</sup> But is the rise of Mafia the main determinant of this backwardness? While a broad literature in economics has analyzed the causes and consequences of the presence of the Mafia (e.g., Bandiera, 2003; Buonanno, Durante, Prarolo, and Vanin, 2015; Dimico, Isopi, and Olsson, 2017; Acemoglu et al., 2020), historians and sociologists have often pointed to deeper roots of Sicilian underdevelopment.

Putnam (1993), for instance, suggested that Italy’s within-country differences in economic growth are due to long-lasting differences in social capital that were shaped by early institutions. In particular, he argues that the hierarchical feudal system—widespread in Southern Italy during the Middle Ages—caused a low-trust path dependence:

[Feudal lords] systematically promoted mutual distrust and conflict among their subjects, destroying horizontal ties of solidarity in order to maintain the primacy of vertical ties of dependence and exploitation. (Putnam, 1993, p. 136)

Sicily experienced Europe’s longest feudal regime (from the 11th to the 19th century); at the end of the 13th century, the island came under the Spanish governance and started to be *de facto* administered by local feudal landlords, rather than by the sovereigns. This process has been defined reverse-vassalage and it represents a Sicily-specific form of feudalism (Hamel, 2014).<sup>2</sup> The resulting socio-economic organization fostered a culture of individualism and mistrust, especially when, in the 17th century, more than a hundred feudal villages were founded and the system of reverse-vassalage became formally recognized.<sup>3</sup> The historical record suggests that the newly entitled feudal lords established an institutional setting even more “extractive” than the one theretofore existing (that we define “late” feudalism) which further discouraged the creation of social ties (Benigno, 1986). Thus, according to this hypothesis, the legacy of feudalism explains the low levels of Sicilian social capital (today, as well as in the pre-Mafia period) and economic progress—and, may have even facilitated the emergence of the Mafia itself, given that “the main market for Mafia services is to be found in unstable transactions in which trust is scarce and fragile” (Gambetta, 1993, p. 17).

Despite the groundbreaking nature of this argument, to the best of our knowledge, there is no systematic empirical work analyzing the deeper feudal roots of Sicily’s underdevelopment, beyond

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<sup>1</sup>Several authors have studied how the Mafia may have affected accumulation of social and human capital, public good provision, and more broadly, economic outcomes—see Acemoglu, De Feo, and De Luca (2020) for a review.

<sup>2</sup>We will use the term feudalism to refer to this Sicily-specific type of feudal system—even if it differs, in some aspects, from the traditional European feudalism. For more details, see section 2.

<sup>3</sup>This resulted from the colonization program promoted by the Spanish government to populate the hinterland of Sicily and increase the amount of cultivated land through selling feudal titles and land.

the role played by the Mafia organization. What is challenging is to find measures for the intensity of the feudal experience and historical proxies for social capital. We address these challenges by assembling, from historical archives and secondary sources, a novel city-level dataset on the universe of feudal centres in Sicily spanning the 13th to 19th centuries and on indicators of social capital (both before and after the emergence of the Mafia).

We find that the feudal experience, especially in its latest form, is negatively and significantly associated with our main measure of early social capital, the number of *opere pie* (pious societies) per 1,000 people in 1861. These were spontaneous societies of laymen focused on charity and mutual aid (Bouwmsma, 1978). Importantly for our analysis, they capture the stock of social capital that existed before both the unification of Italy and the emergence of the Mafia, thus making it unlikely that central government policies or the crime syndicate's spread are driving our results. To account for potentially confounding factors that could be related to the feudal experience and also affect social-capital accumulation, we include a large set of geographic and economic controls, perform a series of robustness checks, and implement the neighbor-pair fixed effects estimator. Our results are extremely robust throughout the different specifications, suggesting that the deeper roots of Sicilian low social capital have to be found in the presence and type of feudal institutions.

Next, we shed light on the mechanism behind this relationship: in line with the rich historical record, we show that the peculiar characteristics of the Sicilian feudal system may have strongly favored the prevalence of nuclear families—vertically dependent on the landlords and socially isolated from one another—thus reducing the horizontal ties of solidarity among the population.

Finally, we deal with the rise of the Mafia. While we show that the feudal experience is a strong predictor of the Mafia's spread,<sup>4</sup> we find that feudalism (but not the presence of the Mafia) is negatively and significantly associated with today's social capital and economic progress. Thus, all these findings together, supported by a trove of historical evidence, provide a novel view on the roots of Sicilian underdevelopment, beyond the widely studied phenomenon of the Mafia. These roots are found in the features of the Sicilian feudal system, which—especially in its late form—has hampered the development of mutual trust and social networks outside of the nuclear families.

By analyzing the origins of Sicilian backwardness, we contribute to the literature on the causes and consequences of the Mafia (Bandiera, 2003; Buonanno et al., 2015; Dimico et al., 2017; Acemoglu et al., 2020). To our knowledge, this paper is the first to provide empirical evidence of a novel explanation, i.e., the legacy of the feudal system. We show that the presence (and type) of feudal institutions predicts the local level of social capital, both before the emergence of the Mafia and today.

This paper is also related to the literature on the institutional origins of social capital (Putnam,

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<sup>4</sup>This relationship is confirmed even when accounting for those factors considered by the literature as key determinants of the emergence of the Mafia

1993; Guiso, Sapienza, and Zingales, 2016; Rustagi, 2020). While most of the empirical works have analyzed “positive” institutional experiences that fostered the accumulation of social capital (such as the communal experience in Italy or the extinction of the Zaehringen dynasty in Switzerland), we analyze a context in which a historical institution has been detrimental for the development of social ties.

Finally, we contribute to the vast literature on the long-term effects of historical institutions by providing a novel dataset on feudal institutions in Sicily and by studying their long-term effects on social capital.<sup>5</sup>

The rest of this paper is organized as follows. Section 2 summarizes the historical background. Section 3 describes the data. Section 4 discusses the empirical strategy and the main results. Section 5 concludes.

## 2 Historical Background

When the Normans conquered Sicily in the late 11th century, they established a political system based on bonds of vassalage which resembled the traditional feudalism widely established in the rest of medieval Europe (Mack Smith, 1983). The island was administered both by the feudal lords, who owned large land estates and were responsible for the civil jurisdiction of their fiefdoms (*mixto imperio*), and by the sovereigns, who exercised the penal justice (*mero imperio*) (Cancila, 2013). Centres not subject to the feudal regime usually depended directly on the royal administration (so-called *Cittá Demaniali* or *Universitates*).<sup>6</sup>

The Sicilian feudal system drastically changed after the death without heirs of the king Frederick II and the subsequent popular revolt, known as Sicilian Vespers, in 1282. To quell the rioting, the feudal lords asked for help from Peter III, King of Aragon, and the Kingdom of Sicily officially entered the Aragonese orbit (to which it was formally annexed in 1409). The Spanish sovereigns never resided in the island, whose administration was *de facto* delegated to local landlords. Few of them acquired also the right to administer the penal justice on their fiefdoms (both the *mero et mixto imperio*), in a process that saw the traditional lord-and-serf relationship being reversed (Hamel, 2014). The feudal lands (called *latifundia*) were devoted to the extensive cultivation of cereals and the peasants living in the fiefdoms usually worked as day-laborers. Hence, the system did not rely on serfdom (Mack Smith, 1983).

From the second half of the 16th century, to sustain the higher demand for wheat—and because

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<sup>5</sup>See Nunn (2014) for a review of the historical development literature and Voth (2021) for a review of the literature on persistence.

<sup>6</sup>The state-owned cities showed high levels of autonomy from the king (even if not as much as the *Comuni* of Northern Italy) and had their own systems of laws, customs, and law-enforcement (Romano, 1992). Moreover, these cities had representation in a proper branch of the Sicilian Parliament, called *braccio demaniale* (Mack Smith, 1983).

landlords had no incentive to switch from extensive to intensive agriculture—it became necessary to expand the amount of arable land. The Spanish government promoted a massive program to colonize the interior of Sicily, giving birth to more than 120 new fiefdoms (defined as foundation villages) (Benigno, 1986). The program worked mainly through selling the so-called *licentiae populandi* to newly entitled feudal lords. A *licentia* gave the bearer permission to found a new village in unpopulated land and rule over it with full power (*mero et mixto imperio*) (Mack Smith, 1983).<sup>7</sup> This practice definitely broke the personal bonds of vassalage traditionally existing between the sovereign and his landlords and made them *de facto and de jure* local rulers (Coluccello, 2016).

The main goal of founding a feudal village was to increase wheat production, which required the intensive use of seasonal laborers. To attract peasants to the newly founded villages, feudal lords organized the new feudal centers into single-family houses, subletting to the day-laborers small plots of land—usually insufficient to provide for the livelihood of the family. To survive, peasants also had to work intensively on the baronial cereal fields mostly during sowing and harvest. This would allow them to get an extra labor income, while the rest of the year their only source of subsistence was the small plot of land they were given through fixed-term concessions (Fazio, 2004). Clearly, this system fostered the prevalence of nuclear families—a couple and their children: the marginal benefit of an extra family member as additional source of income when working on the lord’s fields did not outweigh the marginal cost of feeding another person for the rest of the year (Benigno, 1989). In this context, “the nuclear family would persist as the most adaptable, simple, and flexible unit to cope with a situation characterized by precarious short-term labor contracts and by plots of land scattered far from each other across the large estates” (Fazio, 2004, p. 268).<sup>8</sup> Peasants “suffered the absence of the security an extended family may give to its single members. Thus, every adult had to protect his or her own nuclear family by any means and preoccupy himself or herself exclusively with what was best for it that is, its material short-run advantage.” (Carlestål, 2005, p. 14). This social organization clearly hampered one of the most common mechanisms for countering negative shocks: interfamily solidarity (Benigno, 1986).

The peculiar features of these feudal relationships comprises “an original model of feudalism” (Benigno, 1986, p. 95), which we define “late feudalism.” Early feudal centres—founded before the 17th century—did not experience this further deterioration of an already extractive institutional setting, as they were usually ruled by ancient feudal families (often the same all along) that were resident in the fiefdoms and belonged to an old nobility. The newly entitled feudal lords, by contrast, bought their

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<sup>7</sup>To gain a seat in the noble branch of the Sicilian Parliament, one needed a fiefdom with at least 40 households, so this policy also favored the political aspirations of a minor nobility (Davies, 1983).

<sup>8</sup>By contrast, in Eastern Europe a different system of feudal land relations favored the prevalence of extended families who owned the livestock, and were thus able to provide the *corvée* (Benigno, 1985).

title and lands, usually resided in Palermo, and were interested only in maximizing grain production (Mack Smith, 1983).

In 1753, after centuries under the Spanish crown, Sicily was annexed to the Bourbon Kingdom of Naples, which lasted until the unification of Italy in 1860. Under Bourbon rule, the Sicilian feudal system was officially abolished in 1812. The origin of the Mafia dates back to the tumultuous end of the 19th century. Historians have linked the rise of the Mafia to the weak state presence following the abolition of feudal relationships (Hure, 1982; Mack Smith, 1983). In the words of Putnam (1993, pp. 146–147) “given the pervasive lack of trust and security, ensured neither by the state nor by civic norms or networks, mafiosi provided a kind of privatized Leviathan.”

Despite many changes in its administration over the centuries, the structure of Sicilian society has remained largely unchanged. Its long-lasting effects on interfamily solidarity and social capital have persisted until today and cannot be understood without accounting for the legacy of the feudal system.

### 3 Data and Descriptive Statistics

Our analysis is carried out at the city-level—using as benchmark the topography of Sicily before Italian unification in 1860—and contains 331 Sicilian cities.<sup>9</sup> Data for subsequent periods, which are at times more disaggregated, are mapped to the pre-1860 municipalities. Moreover, we account for the administrative circumscriptions (*comarche*) that Sicily was divided into during the feudal period. In place from 1583 to 1812, they represented the first attempt to administratively organize the island. Section B in the Appendix provides a synthetic description of each variable whose summary statistics are included in Table A.1.

#### 3.1 Measures of Social Capital

The rather broad definition of social capital includes features such as trust in others, norms of reciprocity, and social networks. Following Putnam (1993, p. 148), we consider social capital as “associationism and collective solidarity.”

To obtain historical proxies for social capital, we digitized detailed data on the universe of *opere pie* (i.e., “pious societies”) active in Sicily in 1861 (Direzione Centrale di Statistica, 1873). These were “spontaneous and local confraternities of laymen for the purposes of performing pious works and devotional exercises together” (Bouwsma, 1978, p. 1134). Although *opere pie* were often inspired by religious sentiments, they represented the main expression of lay and public charity, being in charge of financing hospitals, paying dowry for poor girls, extending credit to peasants in trouble, and taking care of orphans, widows, and sick and disabled people. Because this variable is measured in the wake

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<sup>9</sup>In 1853, the Bourbon Cadastre consulted by Mortillaro (1854) reported the existence of 348 municipalities in Sicily. However, we could not find reliable historical information on all of them, thus we reduced our sample to 331.

of Italian unification (and before the rise of the Sicilian Mafia), it captures the stock of social capital accumulated under the feudal system, making it unlikely that subsequent policies promoted by the central government or the Mafia's spread are confounding our results. The right panel of Figure 1 shows the geographical distribution of the number of *opere pie* (per 1,000 people) in 1861.

Next, we study today's social capital, focusing on the number of volunteers active at the city-level—as “voluntary cooperation is easier in a community that has inherited a substantial stock of social capital” (Putnam, 1993, p. 167). The number of volunteers measures people's participation in social networks, beyond their immediate families. This variable comes from the 2011 Census of Industry and Services carried out by ISTAT, the National Bureau of Statistics in Italy. Table A.1 reports that, on average, 0.63 *opere pie* and 53.4 volunteers per 1,000 people were active in a Sicilian municipality, respectively, in 1861 and 2011.

### 3.2 Identifying the Fiefdoms

As we discussed in Section 2, from the Sicilian Vespers onward the political authority gradually transitioned to the local feudal landlords in a process defined as reverse-vassalage (Hamel, 2014). This institutional setting became formalized (and much more pronounced) during the 17th century, when the Spanish government started granting the *licentiae populandi* to newly entitled feudal lords. Historical records suggest that the peculiar characteristics of this urbanization process functional to the extensive cultivation of wheat—e.g., concessions on one-family houses, insecure property rights on small plots of land sub-let by peasants—together with the lack of laws constraining the feudal lords, further weakened the horizontal ties of solidarity between families (Mack Smith, 1965; Benigno, 1986).

In the empirical analysis, we exploit the within-region variation in the type of municipal governance in feudal and nonfeudal centres (Militello, 2008).<sup>10</sup> Since, to the best of our knowledge, a comprehensive catalogue of Sicilian feudal centres does not exist, we consulted several historical sources to track the political evolution of each municipality in the sample and we digitized the corresponding information. Our primary source was the book “*I Fasti di Sicilia*” (Castelli, 1820). To validate this source, we checked other historical collections, such as the *Historical Atlas of Sicily* published by Touring Club Italiano (2005) and the *Dizionario storico-araldico della Sicilia* (Palizzolo, 1871). Lastly, for cities not mentioned in these sources, we consulted the historical section of official city websites.

Combining information from these historical sources, we construct a dummy equal to one if the city belonged to a fiefdom at any time between the 13th and 19th centuries, i.e., between the Sicilian Vespers in 1282 and the formal abolition of the feudal system in 1812. Then, to further distinguish

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<sup>10</sup>Besides the state-owned cities, nonfeudal towns also includes a modest number of territories belonging to abbeys or self-administered by groups of immigrants (e.g., *Piana degli Albanesi*) (Mack Smith, 1983).

between the feudal experience of early feudal cities and foundation villages (i.e., those founded under the Spanish colonization program in 1600s), we use a discrete variable: zero for nonfeudal cities, one for cities belonging to a fiefdom all along, and two for cities experiencing feudalism any time after their foundation in the 1600s. For the sake of clarity, we label the former as “early (13th–19th centuries)” and the latter as “late (17th–19th centuries)”. This allows us to measure the intensity of exposure to extractive political and economic institutions. Table A.1 shows that 84% of all Sicilian cities had feudal governance at any time, and about one-third of them experienced late feudalism. The left panel of Figure 1 shows the geographical distribution of fiefdoms and the location of foundation villages.

### 3.3 Other Historical Variables and City Controls

In our regressions, we account for a series of baseline and economic controls that could be related to the existence of a fiefdom (and its type of governance) and affect the accumulation of social capital.

**Baseline controls.** We start with the surface area of a fiefdom. One concern could be that early feudal centres had more surface area than late ones. A larger land could make landlord’s control over the population more difficult and, in turn, foster horizontal solidarity among peasants. Then, we control for elevation and slope, which, while making it easier for feudal villages to defend themselves, could hinder agriculture and trade. These measures are from Ancitel (2019). To account for the reach of central institutions and for the common practice of feudal lords residing in the capital, we use distance from Palermo (Lo Jacono, 1856). Also, as most of Sicilian agricultural goods—produced mainly in the fiefdoms—were intended for export and had to be transported throughout the island, we control for distance to the closest port (Lo Jacono, 1856) and for direct access to one of the postal roads (Cary, 1799; Buonanno et al., 2015). These variables are from Acemoglu et al. (2020). We also add a dummy for being part of the County of Modica—the most ancient county in Sicily and an exception in terms of political autonomy<sup>11</sup>—and data on historical and today’s population, respectively from Istituto Centrale di Statistica (1960) and ISTAT (2011).

**Economic controls.** Agriculture was the main economic activity of fiefdoms, the vast majority of which specialized in the extensive cultivation of wheat. We thus include the share of municipal land devoted to agriculture, the share of cultivated land devoted to cereals, the rural rent per hectare (Mortillaro, 1854), and a dummy for being an agro-town (Direzione Centrale di Statistica, 1864). These variables are all reported in Acemoglu et al. (2020).

**Rise of the Mafia at the end of the 19th century.** We use a discrete measure for the intensity of the Mafia, with values ranging from zero (no Mafia) to three (major Mafia presence) (Cutrera, 1900).

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<sup>11</sup>In 1392, following the Aragonese conquest, the county was granted to the Catalan general Bernardo Cabrera and acquired uncommon levels of local autonomy, to the extent that for ages it was called *Regnum in Regno*. For instance, when Sicily became for a short time a possession of Victor Amadeus of Savoy in 1713, the county remained the only Spanish territory in the Piedmontese reign (Mack Smith, 1983).

We also control for the main determinants of the rise of the Mafia analyzed by the literature, such as the share of cultivated land devoted to citrus groves, vineyards, and olive groves (Mortillaro, 1854), the average production of sulphur between 1868 and 1870 (Parodi, 1873), and the presence of *Fasci Siciliani dei Lavoratori* (Peasant Fasci Organization) (Acemoglu et al., 2020). These variables are all reported in Acemoglu et al. (2020).

## 4 Empirical Analysis

To study the relationship between feudal institutions and social capital, we estimate equations of the form:

$$y_{ij} = \beta \cdot F_{ij} + \gamma \mathbf{X}_{ij} + \alpha_j + \varepsilon_i, \quad (1)$$

where  $y_{ij}$  are proxies for social capital in city  $i$  and *comarca*  $j$ ,  $F_{ij}$  is a dummy equal to one for any type of feudal experience,  $\mathbf{X}_{ij}$  is a vector of control variables at the city level,  $\alpha_j$  represents *comarca* FEs, and  $\varepsilon_i$  is the error term. Second, we exploit the intensity of the feudal experience, and  $F_{ij}$  will also distinguish between cities that experienced early feudalism from those exposed to late feudalism.<sup>12</sup> Standard errors are clustered based on the major feudal family that ruled over the fiefdom, to account for the political regime imposed by a specific family. Finally, in our preferred specification we use the weighted least-squared method, using as weights the population living in each city.

### 4.1 Before the Mafia: The Short-Term Legacy of Feudalism on Social Capital

Table 1 shows our main results. We find a strong negative relationship between our early proxy of social capital and exposure to feudal institutions. Coefficients stay highly significant when including *comarca* FEs (column 2) and our baseline and economic controls (columns 3–4).<sup>13</sup> Table 1 also reports the standardized beta coefficients, showing that having been a feudal city is associated with a 0.410-standard-deviations decrease in the (log) number of *opere pie* (per 1,000 people) in 1861.<sup>14</sup> Next, in columns 5–8, we distinguish between early and late feudalism. Historical evidence suggests that the feudal system implemented in foundation villages was particularly effective in hampering interfamily solidarity and social-capital accumulation. Our results support this argument: the coefficients on late feudalism are much larger in magnitude and more significant than those on early feudalism. Being exposed to late feudalism decreases by 0.918 standard deviations the (log) number of *opere pie* (per 1,000 people) in 1861. Figure A.1 (left panel) shows the k-density of the (log) number of *opere pie*

<sup>12</sup>Historians suggest that this even more extractive feudal regime did not spread to early feudal cities. See Section 2 for further details.

<sup>13</sup>Appendix Table A.2 shows coefficients for all control variables.

<sup>14</sup>We calculate standardized beta coefficients with the independent variables in original units and the dependent variable in standard deviations.

(per 1,000 people); it distinguishes between the different types of governance: the density shifts to the right as we move from late feudalism to early feudalism to cities with no feudal experience. Notably, as our proxy of early social capital is measured before the Mafia’s emergence—typically dated around the 1880s–1890s (Buonanno et al., 2015; Acemoglu et al., 2020)—our results suggest that the path of Sicilian backwardness began long before the diffusion of the Mafia, and that its origins lay deep in the feudal system.

In Appendix A, we perform a series of robustness checks. Table A.3 uses unweighted regressions, to address the concerns that our findings may be driven by the most populous cities. Coefficients remain highly significant and differ little in magnitude from our baseline specification. Table A.4 controls for the *length* of the feudal experience, further supporting the hypothesis that the quality of feudal institutions mattered, even beyond their length: cities founded under the Spanish colonization program experienced the feudal system for a shorter period, but the particularly extractive institutional framework set up by the new feudal lords strongly affected levels of mutual trust. Table A.5 exploits mutual aid societies in 1880 as a proxy for early social capital. These started to spread after 1862, when the Rattazzi Law marked the decline of *opere pie* and represented “the first embryo of an associative process” (Trigilia, 1981) in post-unification Italy. All results hold: the feudal experience (and especially late feudalism) is a strong predictor of low social capital in 1880.<sup>15</sup>

While we already exploit within-*comarca* variation and our city-level controls account for numerous observable characteristics, in Table A.6, we further strengthen our analysis by implementing the neighbor-pair fixed effects estimator. Combining matching methodology and regression discontinuity design, it compares feudal and nonfeudal neighboring cities (Acemoglu, García-Jimeno, and Robinson, 2012; Buonanno et al., 2015; Buonanno, Plevani, and Puca, 2021). By including neighbor-pair fixed effects, this empirical strategy allows us to control directly for unobservables, such as location fundamentals that are common across adjacent municipalities, not captured by our city-level controls and by the *comarca* FE. What should change within the neighbor pair is the exposure to different types of governance.

To perform this exercise, we restrict the sample to feudal cities that had an adjacent municipality experiencing a different feudal regime. Panel A, which compares each feudal city with a neighboring nonfeudal one, confirms our main results. Panels B and C, which focus on cities exposed to late feudalism, further support the idea that the quality of feudal institutions played a key role. When each late feudal village is paired with a neighboring nonfeudal one, the magnitude of coefficients sharply increases (Panel B). This significant difference in the stock of social capital endures even within adjacent feudal municipalities experiencing different institutional settings (Panel C).

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<sup>15</sup>Because the diffusion of mutual aid societies reached its peak in 1890 (Putnam, 1993) in parallel with the emergence of the Sicilian Mafia, we prefer not using it as our main outcome variable.

## 4.2 Understanding the Transmission Mechanism

So far, we have documented a strong negative relationship between exposure to feudal institutions and pre-Mafia measures of social capital. The next question is: What is the mechanism behind these findings? The historical record suggests that the peculiar features of Sicilian feudal system—reverse-vassallage institutionalized by the *mero et mixto imperio* to feudal lords, diffusion of latifundia devoted to the cereals' production, temporary concessions to peasants on small plots of land—favored the prevalence of nuclear families in feudal centres (Mack Smith, 1965; Benigno, 1986; Fazio, 2004). The feudal system imposed severe limitations on the size on the family: wheat production required intensive labor only for limited periods (when peasants were hired as day-laborers) while for the rest of the year they practised subsistence farming; in this context, an additional unit of labor not necessarily produced a significant income increase (Benigno, 1989; Silverman, 1968).<sup>16</sup>

While in urban centres—where geographic and social mobility is higher, and the labor market is typically larger and more dynamic—nuclear families had higher incentive to interact with each others (thus fostering the accumulation of social capital), in feudal (rural) villages they ended up being socially isolated (Benigno, 1989). This resulted from the lack of incentive to commonly cultivate the land, mixed with a suspicious attitude towards people beyond the nuclear family itself (Carlestål, 2005) In the words of the scholars Silverman and Fazio:

Because of the fragmentation of economic activity there is no basis for stable cooperative associations between households. Each small family group makes its own way by combining and improvising a variety of different sources of sustenance. () At the same time, the random arrangement of residences in the towns does not place persons of common interests in exclusive, close proximity. () The next nondyadic social unit beyond the nuclear family is the community itself, for there is no functional basis for any division into stable groups smaller than the town. (Silverman, 1968, p. 14)

The social isolation that could be associated with the nuclear structure of the domestic unit made even the simplest economic or social strategy impossible or at least very difficult” (Fazio, 2004, p. 269).

Thus, it seems that this social isolation, product of the feudal institutions, has weakened the horizontal ties of solidarity between people living in the same community.

To test this mechanism, we construct a measure of family structure, using data from Direzione Centrale di Statistica (1864). We compute the ratio of houses to families in 1861—the idea being that the higher this ratio, the higher the presence of nuclear families. Figure 2 provides clear evidence for

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<sup>16</sup>See Section 2 for further details.

the stronger prevalence of nuclear families in feudal cities: the distribution of the ratio is concentrated around the value 1 (i.e., nuclear family) for feudal cities, whereas we observe a much larger variation (with the median at 0.6) for nonfeudal cities.

In Table A.7 we show even more results in line with this mechanism: the feudal experience is strongly correlated with the prevalence of nuclear families (columns 1–4) which, in turn, predicts the lower levels of early social capital (columns 5–6).

Thus, our empirical results, supported by ample historical record, suggest that (1) feudal institutions (especially late ones) contributed to low social-capital accumulation and (2) the mechanism behind this relationship is to be found in the strong prevalence of nuclear families in feudal villages, which were trapped in a vicious circle of social isolation and mistrust towards strangers because of the nature of these feudal relations (Silverman, 1968; Carlestål, 2005). Importantly, these results refer to a period when the Sicilian Mafia had not yet spread throughout the island, suggesting that the roots of local underdevelopment lie beyond the most popular explanation.

### **4.3 Following the Mafia: The Long-Term Legacy of Feudalism on Social Capital**

After showing that the feudal experience is strongly associated with accumulation of social capital *before* the Mafia emerged, the question that naturally follows is: Can the feudal experience also predict the rise of the Mafia itself?

Table 2 addresses this question, showing a strong and positive relationship between feudalism and the presence of the Mafia in 1900 when including our baseline and economic controls (columns 2-3 and 6-7). Coefficients remain highly significant also when accounting for the other factors identified by the literature as prominent causes for the emergence of the Mafia (columns 4 and 8). In particular, we include measures of high-value, export-oriented cultivation (i.e., citrus groves, olives groves, and vineyards) following Dimico et al. (2017), a measure of sulphur production in the 1870s following Buonanno et al. (2015), and a dummy for presence of the *Fasci Siciliani* following Acemoglu et al. (2020). In all specifications, the exposure to feudal institutions explains the rise of the Mafia. In addition, when distinguishing between early and late feudalism, the latter seems to play a stronger role. These results are in line with the work of several scholars (e.g., Franchetti and Sonnino, 1877; Gambetta, 1993; Putnam, 1993), suggesting that low social trust and weak horizontal ties of solidarity are a precondition for the emergence of the Mafia.

Finally, following Putnam (1993) and Guiso et al. (2016), we estimate the long-term relationship between the exposure to feudal institutions and levels of local social capital. Our analysis builds on the hypothesis that the spatial distribution of social capital is persistent over time. Figure A.2 provides evidence of a strong positive relationship between the number of volunteers (per 1,000 people) in 2011 and the number of *opere pie* (per 1,000 people) in 1861—namely our contemporaneous and

early measure of social capital.

Table 3 analyzes this relationship more systematically; it shows that the feudal experience persistently affected the accumulation of social capital (columns 1 and 5), also when accounting for our baseline and economic controls (columns 2 and 6). The bottom of Table 3 shows that having been a feudal city leads to a 0.769-standard-deviations decrease in the (log) number of volunteers (per 1,000 people). As expected, the long-run impact of late feudalism seems to be stronger than that of early feudalism: late feudalism decreases by 0.990 standard deviations the (log) number of volunteers (per 1,000 people) while early feudalism decreases it by 0.731 standard deviations. Figure A.1 (right panel) shows the k-density of the (log) number of volunteers (per 1,000 people); it distinguishes between the different types of governance: the density shifts to the right as we move from late feudalism to early feudalism to cities with no feudal experience.

One key concern is that this negative relationship may be confounded by the rise of the Mafia. Columns 3–4 and 7–8 replicate the previous specifications, controlling for Mafia presence in 1900. Reassuringly, the coefficients on feudalism remain significant and very similar in magnitude, whereas emergence of the Mafia does not predict the current levels of local social capital. Columns 1–3 of Table A.8 further detail the “horserace” between feudalism and the Mafia to explain today’s social capital: the coefficient on the Mafia loses its significance when controlling for feudal institutions. The same is true when we use proxies for economic development (the (log) number of firms (per 1,000 people) and the female employment rate in 2011) as dependent variables (columns 4–9).

This empirical evidence suggests that the roots of Sicilian backwardness precede the rise of the Mafia: the experience of extractive feudal institutions explains the lower levels of social capital both in the pre-Mafia period and today—if anything, the emergence of the Mafia *per se* seems to find its roots in the feudal system.

## 5 Conclusions

Large differences in social capital exist both across and within countries, and they are often the legacy of early (long-gone) institutions. In this paper, we investigate the exemplary case of low social capital in Sicily. Contrary to common beliefs about the Mafia’s key role, we provide a novel explanation: we show that the experience and type of feudal institutions predict the local level of social capital *before* the rise of the Mafia. We shed light on the mechanism and suggest that the peculiar features of the Sicilian feudal system favored the prevalence of socially isolated nuclear families, hampering the development of interfamily solidarity. We also find that feudal cities were more likely than nonfeudal cities to experience the emergence of the Mafia and are more likely to have a lower level of social capital today.

While many authors have focused on the Mafia as the main cause of Sicily’s underdevelopment,

we revisit this largely-studied explanation and provide novel evidence on the prominent role that feudal historical institutions played in this realm. Thus, we also contribute to the extensive literature on the role historical institutions play in explaining today's economic attitudes (Guiso et al., 2016; Rustagi, 2020; Drelichman, Vidal-Robert, and Voth, 2021). Finally, although specific to the Sicilian case, our findings shed light on the influence feudal institutions exert on social capital accumulation more broadly throughout Italy and Europe.

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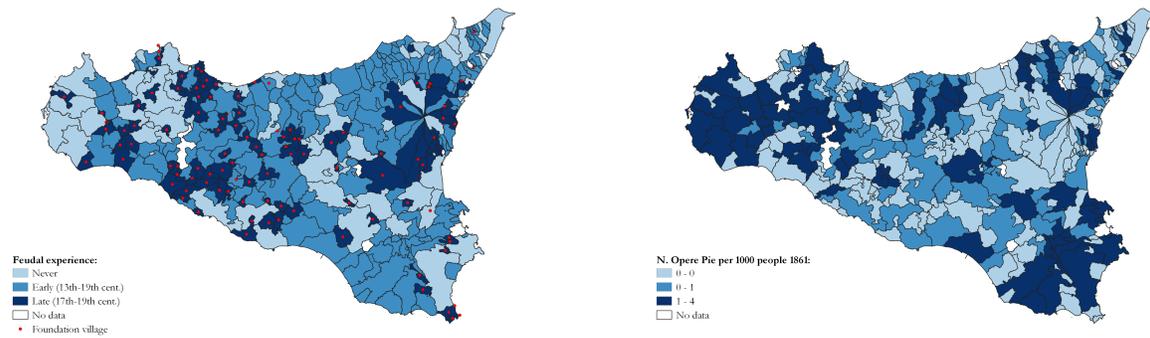
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## FIGURES

Figure 1: Spatial Distribution of the Feudal Experience and Early Social Capital

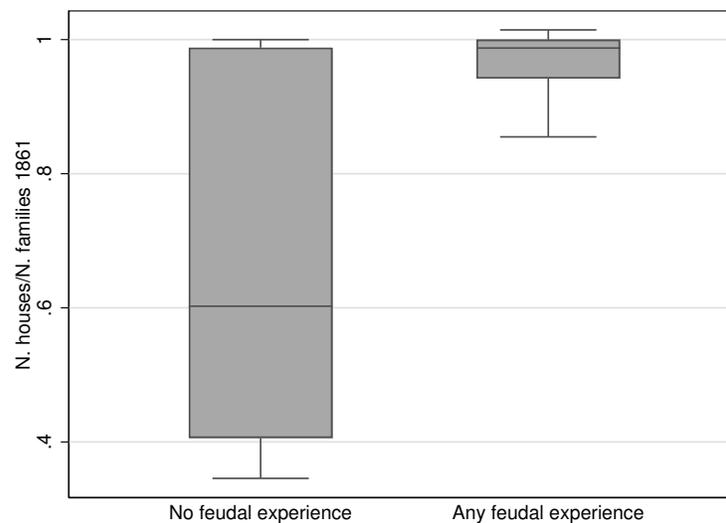


Intensity of the Feudal Experience

Early Social Capital

*Notes:* The left panel shows the spatial distribution of the feudal experience at the city level. The right panel shows the spatial distribution of *opere pie* per 1,000 people in 1861, as a proxy of early social capital. The latter is obtained by using quantiles.

Figure 2: Distribution of the Nuclear Family Indicator



*Note:* The figure shows the boxplots of the nuclear family indicator for feudal and nonfeudal cities.

## TABLES

Table 1: Effect of Exposure to Feudal Institutions on Early Social Capital

Dependent Variable:	<i>Opere pie pc 1861</i>							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>Feudal experience:</i>								
Any feudal experience	-0.157 (0.051)	-0.244 (0.036)	-0.138 (0.055)	-0.139 (0.056)				
Early (13th-19th cent.)					-0.030 (0.056)	-0.101 (0.039)	-0.024 (0.043)	-0.022 (0.044)
Late (17th-19th cent.)					-0.374 (0.027)	-0.421 (0.033)	-0.307 (0.068)	-0.311 (0.068)
Comarca FE		✓	✓	✓		✓	✓	✓
Baseline controls			✓	✓			✓	✓
Economic controls				✓				✓
R <sup>2</sup>	0.05	0.38	0.49	0.49	0.20	0.48	0.53	0.54
Observations	324	324	324	324	324	324	324	324
Standardized beta coefficients								
<i>Feudal experience:</i>								
Any feudal experience	-0.464	-0.721	-0.409	-0.410				
Early (13th-19th cent.)					-0.088	-0.298	-0.071	-0.065
Late (17th-19th cent.)					-1.104	-1.243	-0.908	-0.918

*Notes:* All regressions are weighted by population in 1861. Baseline controls include the (log) population in 1861, the (log) surface, the (log) elevation, the (log) slope, the (log) distance from Palermo, the (log) distance from the closest port, a dummy for having access to a postal road, and a dummy for being part of the County of Modica (cols. 3–4). Economic controls include the average rural rent per hectare, the share of land devoted to agriculture, the share of cultivated land devoted to grains and a dummy for being an agro-town. Standard errors (clustered at the feudal family level) in parentheses.

Table 2: Effect of Exposure to Feudal Institutions on the Rise of the Mafia

Dependent Variable:	Mafia 1900							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>Feudal experience:</i>								
Any feudal experience	0.062 (0.134)	0.443 (0.144)	0.461 (0.145)	0.456 (0.128)				
Early (13th-19th cent.)					0.068 (0.143)	0.352 (0.115)	0.369 (0.131)	0.359 (0.114)
Late (17th-19th cent.)					0.055 (0.155)	0.597 (0.169)	0.592 (0.166)	0.536 (0.169)
Citrus groves				5.712 (4.288)				6.203 (4.590)
Vineyards				1.050 (0.710)				0.781 (0.682)
Olive groves				-0.841 (1.609)				-0.861 (1.615)
Sulfur production 1870				0.116 (0.069)				0.108 (0.073)
Peasant Fasci Organization				0.374 (0.163)				0.354 (0.158)
Comarca FE	✓	✓	✓	✓	✓	✓	✓	✓
Baseline controls		✓	✓	✓		✓	✓	✓
Economic controls			✓	✓			✓	✓
R <sup>2</sup>	0.68	0.72	0.73	0.75	0.68	0.72	0.74	0.75
Observations	273	273	273	273	273	273	273	273

Standardized beta coefficients

<i>Feudal experience:</i>								
Any feudal experience	0.052	0.372	0.387	0.383				
Early (13th-19th cent.)					0.057	0.296	0.310	0.302
Late (17th-19th cent.)					0.046	0.501	0.497	0.450

*Notes:* All regressions are weighted by population in 1900. Baseline controls include the (log) population in 1900, the (log) surface, the (log) elevation, the (log) slope, the (log) distance from Palermo, the (log) distance from the closest port, a dummy for having access to a postal road, and a dummy for being part of the County of Modica (cols. 2-4). Economic controls include the average rural rent per hectare, the share of land devoted to agriculture, the share of cultivated land devoted to grains, and a dummy for being an agro-town. Standard errors (clustered at the feudal family level) in parentheses. Std beta coeff of Peasant Fasci Organization: col. (4) 0.314; col. (8) 0.297.

Table 3: Effect of Exposure to Feudal Institutions on Today's Social Capital, Controlling for the Rise of the Mafia

Dependent Variable:	Volunteers pc 2011							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>Feudal experience:</i>								
Any feudal experience	-0.527 (0.036)	-0.364 (0.060)	-0.483 (0.042)	-0.400 (0.063)				
Early (13th-19th cent.)					-0.437 (0.043)	-0.346 (0.054)	-0.391 (0.052)	-0.385 (0.053)
Late (17th-19th cent.)					-0.593 (0.055)	-0.469 (0.064)	-0.555 (0.048)	-0.521 (0.083)
Mafia 1900			-0.003 (0.032)	-0.018 (0.044)			-0.003 (0.031)	-0.009 (0.045)
Comarca FE	✓	✓	✓	✓	✓	✓	✓	✓
Baseline controls		✓		✓		✓		✓
Economic controls		✓		✓		✓		✓
R <sup>2</sup>	0.52	0.57	0.56	0.60	0.53	0.57	0.58	0.60
Observations	327	320	272	272	327	320	272	272
Standardized beta coefficients								
<i>Feudal experience:</i>								
Any feudal experience	-1.108	-0.769	-1.064	-0.881				
Early (13th-19th cent.)					-0.920	-0.731	-0.862	-0.849
Late (17th-19th cent.)					-1.247	-0.990	-1.224	-1.149

*Notes:* All regressions are weighted by current population. Baseline controls include the (log) current population, the (log) surface, the (log) elevation, the (log) slope, the (log) distance from Palermo, the (log) distance from the closest port, a dummy for having access to a postal road, and a dummy for being part of the County of Modica (cols. 2 and 4). Economic controls include the average rural rent per hectare, the share of land devoted to agriculture, the share of cultivated land devoted to grains, and a dummy for being an agro-town. Standard errors (clustered at the feudal family level) in parentheses.