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The consequences of persistent inequality on social capital: A municipal-level analysis of blood donation data

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ABSTRACT

This paper advances the hypothesis that persistent inequality affects cultural traits and undermines social capital. We use blood donation data at the local level in Southern Spain to document that, indeed, persistent inequality – as measured by land inequality – negatively affects blood donation, which indicates that it harms social capital. This evidence sheds new light into the debates on the consequences of inequality and the determinants of culture.

1. Introduction

This article addresses an unexplored consequence of inequality: its implications for culture and social capital formation. A society suffering severe inequality may develop social and political apathy. If the situation persists for a long time, this apathy becomes a cultural trait hindering the creation of social capital. By putting forward and testing this hypothesis we contribute to the debates on the consequences of long-term inequality (e.g., Engerman and Sokoloff, 2002; Easterly, 2007; Galor et al., 2009) and the causes of culture, and more particularly, of social capital (e.g., Nunn, 2012; Alesina and Giuliano, 2015; Guiso et al., 2016).

We focus on the effects of historical persistent inequality – in short *persistent inequality* –, which refers to a type of inequality that persists over a long historical period. This persistence makes inequality a feature of society that can create cultural traits. As part of a society's culture, social capital can be undermined by persistent inequality. Arguably, an unequal society that, generations upon generations, excludes a large section of its population from having economic opportunities and acceptable living standards will hardly develop a strong sense of solidarity and commitment towards the common good. Once the cultural pattern has been created, it may persist even if society becomes more equal, thus constraining the potential for future economic growth.

We test this hypothesis using municipal-level data on blood donation in the Southern Spanish region of Andalusia (see Fig. 1). This is a case in point because Andalusia has suffered highly persistent inequality over its modern history, whose roots are largely exogenous (Oto-Peralías and Romero-Ávila, 2016, forthcoming). In addition, blood donation is collected in a centralized way by the Andalusian Health Service, which has provided us with a unique dataset on the number of donors per municipality. We find that land inequality – as a proxy for persistent inequality – has a non-negligible negative effect on blood donation, thus supporting the hypothesis that persistent inequality undermines social capital. Interestingly, it is historical inequality rather than current inequality which affects social capital, suggesting that the effect works through the creation of cultural patterns.

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Fig. 1. Geographical context.

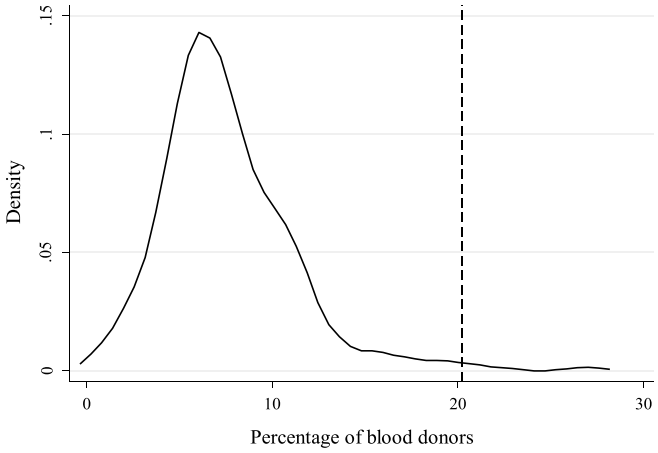

Fig. 2. Kernel density of the percentage of blood donors. *Note*: The vertical line reflects the value at which values are trimmed in the analysis (the 99th percentile).

2. Background and data

Following Guiso et al. (2011), social capital refers to "those persistent and shared beliefs and values that help a group overcome the free rider problem in the pursuit of socially valuable activities" (p. 419). We measure social capital through blood donation, which is widely considered to be a good proxy (e.g., Guiso et al., 2011; Nannicini et al., 2013). The Andalusian Health Service has provided us with a unique dataset containing the postal code of every person that has donated blood in any year of the period 2012–2014. Using this information and data on the population in age to donate blood (i.e., between 18 and 65), we create the variable "percentage of blood donors" at the municipal level. It is worth noting that blood donors' data comes from an *ad hoc* extraction from administrative files conducted specifically for this study, and postal codes may contain errors. These errors are amplified in small municipalities, for which the denominator of the indicator is smaller. In addition, inhabitants of small municipalities have less access to blood collection units. Consequently, to reduce measurement errors we exclude municipalities with less than 1000 inhabitants in 2014, which only account for 1% of the Andalusian population. Fig. 2 depicts the Kernel density estimation of the distribution of the percentage of blood donors, which approximately follows a normal distribution slightly skewed to the right. To mitigate the influence of high values, we limit them to the 99th percentile (20.2%).

Our indicator of persistent inequality comes from the 1982 agricultural census and measures the percentage of utilized agricultural area in holdings with 200 ha or more, computed considering only private agricultural holdings. This is a good proxy for historical persistent inequality because it reflects the incidence of *latifundia* in the municipality. Land concentration has been endemic in large parts of the Spanish and Andalusian geography, and can be traced back to the way land was colonized in the Middle Ages. Factors affecting land distribution in the remote past were contingent and exogenous to the development path of each territory (Oto-Peralías and Romero-Ávila, 2016, forthcoming). Fig. 3 provides some evidence on the persistence of land concentration throughout the 20th century in our sample of municipalities. Correlations are remarkably high, particularly bearing in mind that the indicators are not directly comparable. Tables A1 and A2 (Supplementary material, see Appendix A) provide the definitions and descriptive statistics of all variables used in the empirical analysis.

The persistent inequality suffered by municipalities characterized by high land concentration may have shaped the local culture and undermined social capital. The miserable living conditions of landless workers in Andalusia were pretty much those of a marginalized social group. Olavide (1768–1996), Intendant of Seville in the second half of the 18th century, described them as "the unhappiest men that I know in Europe [...] half-a-year laborers, and the other half beggars". This situation of inequality and dependence on the landowner persisted well into the 20th century (Oto-Peralías and Romero-Ávila, 2016). Arguably, a society that over a long period of time has suffered such high levels of inequality will not develop a sense of commitment towards the public good and solidarity among its members. Social groups such as landless workers that have been oppressed, marginalized, or simply placed in a systematic inferior position, are very unlikely to view the state (or the society as a whole) as representing or sharing their own interests. This feeling of apathy, generations upon generations, leads to a culture of lack of trust, cooperation, or more broadly, social capital.

Finally, an interesting aspect of land inequality is that it was a very important determinant of overall economic inequality in the past, while its current relevance is much lower since agriculture only employs today a small fraction of the population (8.4% in Andalusia in 2014 according to the Labor Force Survey). Thus, in historical and cultural terms the effect of land inequality can be interpreted as a cumulative effect over time, which creates cultural patterns.

3. Empirical results

3.1. Baseline results

Column 1 of Table 1 reports the bivariate regression of the percentage of blood donors in 2014 on land concentration in 1982. The coefficient is negative and highly statistically significant, which provides initial support for our hypothesis. Column 2 adds two demographic factors that are relevant to explain blood donation, namely, total population and population's average age (in linear and quadratic terms), while column 3 includes geographic indicators such as a coast dummy, distance to the capital city (linear and squared), and a capital city dummy. In both cases the coefficient on land concentration remains negative and statistically significant. Column 4 adds additional geographic controls that may influence both blood donation and land concentration (altitude, ruggedness, soil quality, rainfall, and average temperature). This is our baseline specification. The coefficient on land inequality is large and precisely estimated. Going from a municipality without large estates (0% in land concentration) to a municipality with a high concentration of land