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**Working Paper**

## Planting the seeds of polarization: Sharecropping, agrarian conflict and enduring political divides

Quaderni - Working Paper DSE, No. 1214

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*Suggested Citation:* Buonanno, Paolo; Plevani, Giacomo (2025) : Planting the seeds of polarization: Sharecropping, agrarian conflict and enduring political divides, Quaderni - Working Paper DSE, No. 1214, Alma Mater Studiorum - Università di Bologna, Dipartimento di Scienze Economiche (DSE), Bologna,  
<https://doi.org/10.6092/unibo/amsacta/8584>

This Version is available at:

<https://hdl.handle.net/10419/331504>

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ISSN 2282-6483

Alma Mater Studiorum - Università di Bologna  
DEPARTMENT OF ECONOMICS

**Planting the Seeds of Polarization:  
Sharecropping, Agrarian Conflict  
and Enduring Political Divides**

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# Planting the Seeds of Polarization: Sharecropping, Agrarian Conflict and Enduring Political Divides

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October 21, 2025

## Abstract

This paper shows how enduring agrarian institutions shaped the long-run political consequences of historical shocks. We study Italy's sharecropping system (*mezzadria*)—a centuries-old fifty-fifty contract that structured rural relations across central Italy—and link its prewar prevalence to Socialist and Communist voting from 1913 to 1948. Using harmonized data for 720 agrarian zones and a combination of cross-sectional, entropy-balanced, and spatial RDD designs, we find that sharecropping was politically neutral before World War I but became a center of rural unrest and Fascist repression afterward. Areas with more sharecroppers experienced greater strike activity, targeted violence, and enduring left alignment. A daily panel of 1921 events shows repression peaking during annual contract renewals. The results reveal a “revolt–repression–realignment” mechanism through which local economic institutions converted wartime shocks into lasting partisan divides.

JEL Codes: P16, N54, N44, D72, D74, Q15

Keywords: sharecropping, agrarian conflict, repression, political polarization.

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\*We are grateful to Giovanni Mastrobuoni and Elena Esposito for their valuable comments and suggestions. We also thank participants at seminars and conferences at the Universities of Bergamo and Turin for helpful feedback and discussions that improved this paper.

# 1 Non-technical summary

This paper asks a simple question with long echoes: did the way land was farmed help shape where Italy’s political “red belt” took root? We study the *mezzadria*—the centuries-old fifty–fifty sharecropping contract—because it structured rural life across much of central Italy, binding tenant families and landlords on the same estates.

We assemble new, harmonized evidence on pre-war sharecropping intensity at a fine geographic scale and link it to election outcomes from 1913 to 1948, alongside records of agrarian unrest and Fascist intimidation. To separate patterns from causes without heavy econometrics, we rely on three complementary comparisons that are easy to grasp: (i) broad comparisons across places with rich geographic and socio-economic controls; (ii) like-for-like matched comparisons between areas dominated by sharecropping and otherwise similar areas based on owner cultivation or day labor; and (iii) local comparisons around sharp geographic borders (e.g., hill vs. mountain) where farming contracts historically shifted, but fundamental political conditions did not.

Before World War I, places with more sharecropping did not vote differently. After the war, they diverge: where sharecropping had been prevalent, Socialist support rises during the interwar years and support for left-wing parties remains stronger in 1948. These gaps reappear in the like-for-like comparisons and in the local border analysis. Archival episodes of agrarian conflict and targeted Fascist violence are also concentrated precisely in former sharecropping zones.

The war altered the countryside’s economics—lower risk, better outside options, and a fixed fifty–fifty split that grew harder to accept. In sharecropping areas, grievances and organization were concentrated among tenants, while landlords coordinated coercion. We show that intimidation spikes align with the rural contract calendar, peaking around *San Martino* (11 November), when sharecropping agreements were traditionally renewed or terminated. This timing links repression directly to the contract institution.

A local economic institution helped convert a temporary post-war shock into durable political cleavages—a sequence of revolt, repression, and realignment. Even after *mezzadria* faded, places where it had been entrenched remained more left-leaning for decades. The broader lesson is that everyday contracts can seed collective identities and partisan loyalties that outlast the institutions themselves.

We first set the historical scene and outline the mechanism. We then describe data construction and measures, present the broad, like-for-like, and local border comparisons, and finally bring timing evidence around *San Martino*. Taken together, these pieces provide convergent, non-technical evidence that the historical geography of sharecropping left a lasting political imprint on Italy.

## 2 Introduction

In agrarian societies, economic institutions structure not only production but also power (Acemoglu and Robinson, 2008). Contracts governing land cultivation shape who bears risk, who commands authority, and who can coordinate to challenge it. Italy’s *mezzadria*—a standardized fifty–fifty sharecropping contract binding peasant households to landlords across central Italy’s hills—offers a vivid case of how an institution designed to mitigate market frictions could later crystallize political divisions. For centuries, the *mezzadro* and his family lived on the landlord’s estate, supplied labor, and divided the harvest equally with the proprietor, who provided land, capital, and livestock (Anselmi, 1990; Manfredini et al., 2025). This arrangement was stable and long viewed as an efficient compromise between incentives and insurance, reproducing itself through custom and law (Stiglitz, 1974; Akerberg and Botticini, 2000). Yet this equilibrium collapsed in the early twentieth century, turning one of Europe’s most entrenched agrarian systems into a crucible of conflict.

This paper studies how a long-standing contract turned into a political fault line. We ask whether the geography of sharecropping shaped the geography of agrarian unrest and partisan alignment around World War I, and why these effects persisted long after the contract faded. Our argument is that institutional rigidity met large economic shocks. Wartime shifts in output risk, urban wages, and credit made the fixed fifty–fifty split less attractive to tenants—turning insurance into extraction and generating widespread discontent. Where sharecropping was prevalent, grievances and organizational capacity were concentrated; landlords coordinated coercion; and the ensuing sequence of revolt and repression crystallized a durable leftward realignment that remained visible decades later.

The *mezzadria* emerged in late-medieval Tuscany, when urban landowners needed a way to cultivate fragmented and hilly land (Akerberg and Botticini, 2000; Cristoferi, 2023). Landlords supplied land and working capital; tenant households supplied labor; output was split in half. The contract pooled risk for tenants and reduced monitoring costs for absentee landlords (Allen and Lueck, 1992; Burchardi et al., 2019). It also engendered a distinctive rural structure—scattered farmsteads, long-term residence, and close supervision (Leonhardt, 2024). On the eve of World War I, over forty percent of the agricultural labor force in Tuscany, Umbria, the Marche, and Emilia-Romagna worked under this arrangement, whereas the plains relied on wage labor or small proprietors (MAIC, 1926). The system persisted because it fit its environment—high output risk, scarce credit, abundant family labor—and because custom and law reinforced it (Anselmi, 1990; Cohen and Galassi, 1990).

World War I began to unsettle this equilibrium. Mechanization and chemical inputs lowered yield

risk; urban wages rose (Federico et al., 2019); inflation eased credit constraints (Molteni, 2024); and battlefield losses reduced family labor, eroding the insurance value of a fixed fifty–fifty split for tenants. But local institutions and social hierarchies prevented rapid change. Where sharecropping dominated, the same features that had supported cooperation—stable residence, close supervision, and dense rural ties—now gave rise to collective protest.

After the war, tensions erupted in the *Biennio Rosso* (1919–1920), with mass strikes and occupations (MLPS, 1921; MEN, 1924). Central Italy’s sharecroppers—best organized—pushed for a sixty–forty split and eviction protections; brief regional agreements conceded these demands, but then were withdrawn (Snowden, 2004). Violence followed. Landlord associations financed Fascist squads to dismantle unions and restore the old terms (Franzinelli, 2019). The pattern of conflict and repression closely followed the geography of *mezzadria*: unrest in the plains faded quickly, while in the hills—where contracts were rigid and tenants immobile—violence was sustained. By 1922 repression had reimposed the old rule by coercion. The economic equilibrium had vanished, but its social structure endured. Communities that experienced both mobilization and repression developed strong internal solidarity, while landlords’ alignment with Fascism reinforced political polarization. When democracy returned after the Second World War, these experiences reappeared as stable electoral patterns: the same central Italian regions that had once fought over the *mezzadria* became the core of Italy’s postwar “red belt” (Corbetta et al., 2009).

The sharecropping contract linked economic risk to political identity. It organized production under one set of primitives and generated collective action when those primitives changed. Theoretical models of sharecropping show that where risk is high and credit scarce, share contracts are efficient; when risk falls and outside options improve, tenants demand a larger share, and contractual rigidity breeds tension (Stiglitz, 1974; Newbery, 1977; Allen and Lueck, 1992). In central Italy these changes arrived abruptly with World War I, turning a long-lived insurance device into a distributive conflict. The same institutional and social features that had stabilized the countryside—close supervision, shared space, repeated interactions—now lowered coordination costs and enabled collective protest.

This paper combines new historical data and modern empirical tools to test this mechanism. We assemble a dataset harmonized to Italy’s 1921 administrative grid, covering 720 agrarian zones and 7,099 municipalities. The data link pre-war sharecropping intensity to Socialist vote shares in the elections of 1913, 1919, 1921, and 1924, and to left-wing voting in 1948, the first democratic election after Fascism. We also collect information on agrarian strikes and on Fascist violence, some recorded at a daily frequency. Our identification strategy combines three approaches. First, cross-sectional regres-

sions with rich geographic and socio-economic controls measure broad associations. Second, entropy-balanced comparisons match sharecropping zones to owner- or labor-dominant zones with identical pre-war characteristics. Third, a fuzzy morphology-based spatial regression discontinuity design exploits sharp terrain breaks between mountain and hill areas that altered the likelihood of sharecropping but not underlying political conditions.

Across designs, the evidence is consistent and sizable. Before World War I, sharecropping is unrelated to left-wing voting. From 1919 onward the association is large and persistent: a one-standard-deviation increase in pre-war sharecropping predicts roughly 0.18 SD higher Socialist votes in the interwar period and 0.35 SD higher left-wing votes in 1948. Entropy-balanced ATT estimates reproduce these gaps against both owners and day laborers. In the fuzzy spatial RDD, the border-induced shift in sharecropping yields large 2SLS effects on the 1948 left-wing vote. Mechanism evidence aligns tightly: zones with more sharecroppers experienced more rural strikes and targeted Fascist violence, and in the 1921 daily zone-by-day panel intimidation peaks precisely during the *San Martino* contract-renewal window.<sup>1</sup> The results fit a simple pattern of revolt, repression, and realignment.

The paper contributes to broader debates on how deep-rooted agrarian institutions shape development and politics. In the literature on the historical roots of contemporary outcomes, much attention has focused on how agricultural endowments and technology foster long-term cultural or economic differences (Alesina et al., 2011; Galor and Özak, 2016; Ang and Fredriksson, 2017; Ager and Ciccone, 2018; Ang, 2019; Buggle, 2020; Fouka and Schläpfer, 2020; Ang et al., 2021; Fiszbein et al., 2022). This study complements that perspective by identifying a specific contractual channel through which local agrarian organization influenced collective action and voting behavior. It also speaks to the political-economy literature on persistence and critical junctures by showing how institutional legacies can remain dormant until exogenous shocks render them politically salient (Banerjee and Iyer, 2005; Dell, 2010; Tabellini, 2010; Nunn and Wantchekon, 2011; Voigtländer and Voth, 2012; Acemoglu et al., 2022). World War I acted as a catalyst that transformed the latent structure of sharecropping into an axis of conflict. Finally, the analysis brings together Italian economic history and modern empirical methods. By combining archival data with spatial and temporal identification strategies, it recovers causal effects from an institutional landscape long described only qualitatively (Cohen and Galassi, 1990; Federico and Malanima, 2004; Mariella, 2023).

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<sup>1</sup>In many Italian rural areas—especially Tuscany, Emilia-Romagna, and the Marche—*fare San Martino* (11 November, St. Martin’s Day) marked the end of the agricultural year when sharecropping contracts were customarily terminated or renewed, accounts settled, and—if not reconfirmed—households changed farm (*trasloco*). This seasonal convention structured bargaining timing and mobility in mezzadria.

More broadly, the paper highlights how economic shocks interact with institutional rigidities. Contracts that once balanced incentives and insurance can, when conditions change, turn into mechanisms of extraction and coercion. When such contracts are embedded in local communities, their breakdown can generate not only conflict but lasting political divisions. The Italian experience shows how an agrarian institution designed for economic efficiency came to define collective identities and political loyalties that survived both Fascism and land reform.

The remainder of the paper details the framework and historical context (Section 3), the data (Section 4), baseline and matched estimates (Section 5), the spatial RDD (Section 5.2), mechanisms via daily violence timing (Section 6), and conclusions (Section 7).

### 3 Theoretical Framework

The relationship between sharecropping and political conflict can be understood by examining how economic institutions mediate risk, bargaining power, and collective action. Italy's *mezzadria* governed not only production but also the social and informational structures of the countryside. Its endurance over centuries reflected the equilibrium between incentive provision and insurance in an agrarian economy marked by high uncertainty, imperfect credit markets, and limited mobility. Yet this equilibrium was conditional on those very parameters. When war and industrialization changed them, the same institutional form that had once mitigated market failures became a source of grievance, mobilization, and ultimately, political realignment.

The economic logic of *mezzadria* can be represented as a simple risk-sharing model between a landlord and a tenant household endowed with labor but little liquidity (Stiglitz, 1974; Newbery, 1977; Allen and Lueck, 1992). The landlord provides land and capital; the tenant supplies labor and effort. Output for household  $i$  at time  $t$  can be written as

$$y_{it} = A_{it} e_{it}^{\alpha} \varepsilon_{it},$$

where  $A_{it}$  denotes productivity,  $e_{it}$  is tenant effort,  $\alpha \in (0, 1)$  measures diminishing returns to effort, and  $\varepsilon_{it}$  is a multiplicative shock with variance  $\sigma_t^2$ . The contract specifies a tenant's share  $s \in (0, 1)$  of output, leaving  $1 - s$  to the landlord. The tenant faces a local outside option  $w_t$  and a credit constraint or wedge  $\kappa_t \geq 0$ . If the landlord is less risk-averse than the tenant, the equilibrium share  $s^*$  trades off incentives and insurance: higher output risk or tighter credit markets justify a larger landlord share, while higher

outside options for tenants call for a larger tenant share. In comparative statics form,

$$\frac{\partial s^*}{\partial \sigma^2} > 0, \quad \frac{\partial s^*}{\partial w} < 0, \quad \frac{\partial s^*}{\partial \kappa} > 0.$$

Before 1914, Italian agriculture exhibited the conditions that made the fifty–fifty split roughly efficient. Risk was high, capital markets were shallow, and rural wages were low (Akerberg and Botticini, 2000; Federico and Malanima, 2004). Landlords, typically more risk-neutral and endowed with collateral, valued the stability of the half-share rule. Tenants valued the implicit insurance and the access to working capital that the contract provided. Under these parameters, *mezzadria* persisted as a second-best institution that reconciled incentive and insurance considerations while minimizing monitoring costs (Cohen and Galassi, 1990). Its cultural and legal codification—transmitted through notarial practice and customary law—further reinforced this equilibrium.<sup>2</sup>

The First World War disrupted each of these equilibrium parameters. Mechanization and the diffusion of fertilizers reduced output risk ( $\downarrow \sigma^2$ ); rapid industrialization and urbanization increased alternative employment opportunities ( $\uparrow w$ ); and inflation reduced the real value of debt, easing credit constraints ( $\downarrow \kappa$ ). These shifts lowered the tenant-optimal share relative to the fixed fifty–fifty division, turning the insurance premium embedded in the old contract into a transfer from tenant to landlord. The insurance value that once compensated for risk now overcompensated the less risk-averse party, and the rigidity of the arrangement made adjustment difficult. As a result, the postwar contract no longer maximized joint welfare. It preserved landlord authority but imposed visible inefficiencies and distributive losses on tenants.

Economic tension alone, however, does not automatically produce political mobilization. What made *mezzadria* distinctive was its social architecture. The contract linked economic production to daily supervision and co-residence, binding economic relations into an intensely personal form of hierarchy (Leonhardt, 2024). Each household’s livelihood depended on continuity of contract; eviction entailed not only income loss but the forfeiture of improvements accumulated across generations, terraces, vines, and livestock that could not easily be moved (Manfredini et al., 2025). This asset specificity increased the cost of exit and transformed local bargaining into an existential issue. At the same time, the spatial clustering of sharecropping households in hamlets that shared infrastructure and institutions, presses, mills, chapels, and schools, generated dense horizontal networks that reduced coordination costs (Mariella, 2022). The same social density that allowed landlords to monitor tenants also allowed tenants

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<sup>2</sup>Figure A2 testifies to the persistence of sharecropping between 1881 and 1921.

to coordinate among themselves when collective grievances emerged.

The political geography of postwar protest therefore followed the geography of *mezzadria*. When wartime changes reduced the insurance value of the contract, the discontent that arose was most concentrated in areas where the contract had been most entrenched. Sharecroppers' human and physical capital, their social networks, and the repeated face-to-face nature of their relationships created both the motive and the capacity for collective action. Unlike day laborers, who were mobile and atomized, or small proprietors, who lacked common grievances, sharecroppers were bound together in stable, observable communities. They could strike collectively, negotiate collectively, and be repressed collectively (Mariella, 2022). The annual renewal at *San Martino* provided a natural moment for confrontation, converting contractual renegotiation into political ritual.

Repression emerged endogenously from this institutional configuration. Landlords' associations in central Italy's sharecropping provinces coordinated financial and logistical support for Fascist squads that patrolled rural areas, destroyed cooperatives, and coerced tenants into renewing the traditional terms.<sup>3</sup> Violence was selective, concentrated, and economically rational from the standpoint of property defense. It substituted coercion for the paternalistic authority that had governed the old regime of supervision. The timing of violence, peaking during the *San Martino* renewal, underscored its contractual foundation. In this sense, repression was not an external political event imposed on the countryside, but a continuation of the contract's enforcement logic under new historical circumstances.

The aftermath of this sequence reshaped Italy's political geography. The restoration of the fifty-fifty rule after 1922 re-established formal order, but it did so through coercion rather than consent. The economic equilibrium had been rendered obsolete; its political and social residues persisted. Communities that had experienced collective mobilization and repression developed enduring solidarities, while landlords' alignment with Fascist violence entrenched opposing identities. When democratic politics returned after the Second World War, these historical experiences re-emerged as durable electoral cleavages. The *mezzadria* countryside, once defined by economic dependency, became a stronghold of left-wing political loyalty.

The framework developed here yields three testable implications that guide the empirical analysis. First, before the war, the prevalence of sharecropping should correlate primarily with agromorphological features such as ruggedness, slope, and soil quality, factors that limited scale and mechanization, rather than with political outcomes. Second, after 1918, zones with higher pre-war sharecrop-

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<sup>3</sup>Archival ledgers and prefectural reports document substantial payments for armed guards and punitive expeditions in affected provinces (Palla, 1986; Paul, 1989).

ping intensity should exhibit greater agrarian contention, as the shift in risk, wages, and credit differentially eroded the efficiency of the contract. Third, because repression followed the same spatial logic as contention, these same zones should display a persistent leftward alignment in subsequent elections.

These predictions provide the empirical structure for the rest of the paper. The analysis proceeds by documenting the historical geography of sharecropping, tracing its role in postwar conflict and Fascist repression, and measuring its long-term political imprint. The simplicity of the underlying model, grounded in standard theories of risk, credit, and incentives, allows the results to speak to broader contexts. Whenever economic contracts fuse insurance and authority within a rigid institutional framework, shocks that alter the underlying parameters can transform cooperation into confrontation, and confrontation into the foundations of enduring political cleavages.

## 4 Data

We assemble a novel dataset by harmonizing information from primary archival sources and official statistical publications. This section describes the units of observation, sampling frame, and main variables used in the empirical analysis. Detailed source notes and construction steps are provided in Online Appendix A for full replicability. We begin by outlining the construction of our key variable—sharecropping intensity (subsection 4.1)—and the historical electoral outcomes used as indicators of political preferences (subsection 4.2), before presenting the geographic and socio-demographic controls (subsection 4.3).

Our empirical analysis is conducted at the level of *agrarian zones*, the most disaggregated unit for which information on agrarian contracts is consistently available. An agrarian zone is defined as a cluster of contiguous municipalities within the same province sharing similar agro-ecological characteristics. We adopt the 1921 administrative geography—comprising 7,099 municipalities, 720 agrarian zones, 100 provinces, and 18 regions—as the reference system. When sources refer to years with minor boundary changes, we harmonize data to the 1921 grid using GIS overlay and proportional allocation. This framework enables consistent comparison of pre- and postwar outcomes despite shifting municipal borders and the creation of new provinces during the Fascist period.

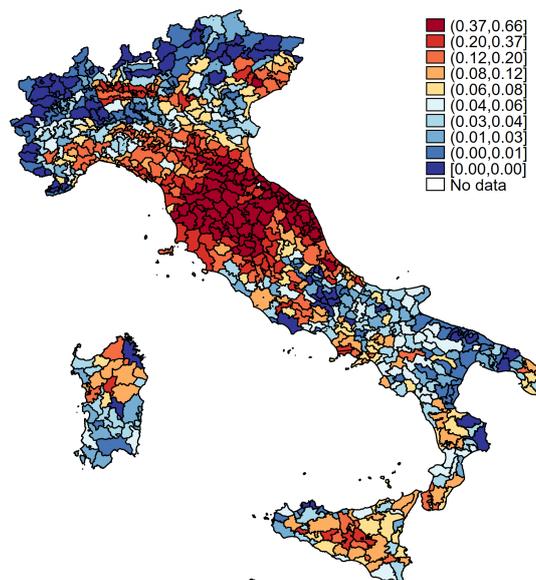
The dataset contributes to the growing literature linking agrarian institutions to political development by providing the first harmonized, subprovincial series of sharecropping intensity across interwar Italy. Existing studies have relied on provincial aggregates or qualitative regional typologies (Anselmi, 1990; Cohen and Galassi, 1990; Federico and Malanima, 2004); our dataset allows microregional variation in

contractual forms and political behavior to be systematically examined within provinces.

#### 4.1 Historical sharecropping intensity

Information on sharecropping comes from the 1921 Population and Agricultural Census, which we digitized from the original printed volumes (MAIC 1926). Our baseline measure is the share of the agricultural *labor* force whose household head was classified as a sharecropper—a labor-based indicator that directly captures the prevalence of sharecropping as an employment relation. We prefer a labor-based definition to a land-based one because it reflects the incidence of sharecropping as a social and contractual relationship rather than the extent of land under such contracts. Land-based indicators, available only for 1930, may overstate sharecropping in mixed-contract farms where landlords retained managerial control or combined tenancy arrangements. For robustness, however, we also consider (i) the number of sharecropper households relative to total population in 1921 and (ii) the proportion of agricultural land cultivated under sharecropping contracts in 1930 (ISTAT 1930).

Figure 1: Sharecroppers in Agricultural Employment, 1921



**Notes:** Sharecropping intensity is measured as the percentage of the agricultural labor force employed under sharecropping contracts in 1921, as reported in the Population Census (MAIC, 1926).

Figure 1 shows the strong concentration of sharecropping in central Italy: in most agrarian zones of Tuscany, Umbria, the Marche, and Emilia-Romagna, more than 40 percent of the agricultural labor force were employed under sharecropping contracts. The pattern fades gradually moving north toward

Lombardy and the Po Valley, where fixed-rent tenancy and wage labor predominated, and south toward Latium and the Mezzogiorno, where smallholder and day-labor systems were more common. A land-based measure from 1930 yields a nearly identical spatial distribution (see Figure A1).

## 4.2 Political outcomes

We proxy political preferences using election results for the lower chamber of the Italian Parliament (*Camera dei Deputati*). For the pre-Fascist period, we rely on municipal vote shares for the Italian Socialist Party (PSI) in the general elections of 1913, 1919, 1921, and 1924—years spanning the introduction of universal male suffrage and proportional representation (1919) and the first elections held under Fascist intimidation (1924). The data come from the official series *Elezioni alla Camera dei Deputati* (Corbetta et al. 2009), digitized by Acemoglu et al. (2022). As a postwar benchmark, we use the vote share of the Popular Democratic Front—the joint list of the Italian Communist Party (PCI) and the Socialist Party (PSI)—in the 1948 general election, the first fully competitive contest of the Republican era.

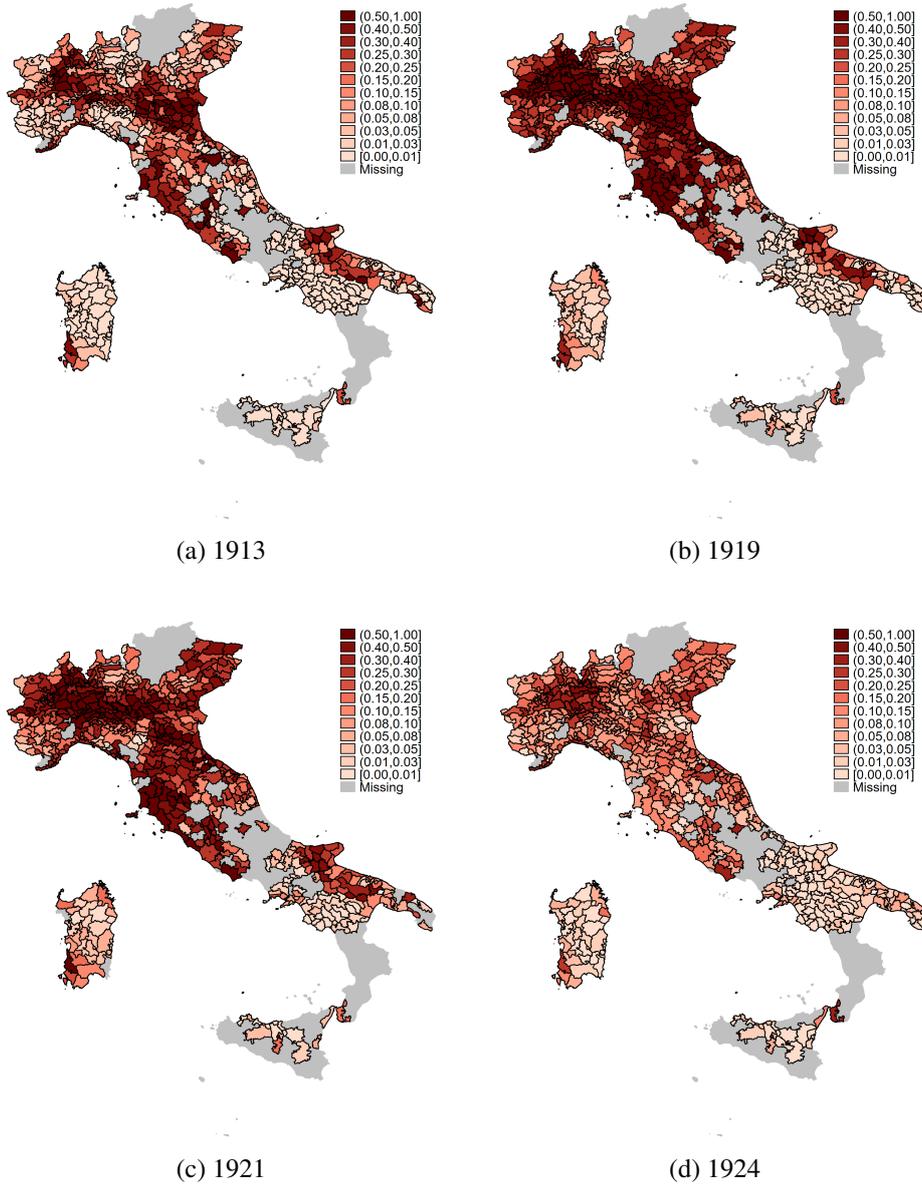
Figure 2 reveals a stable “red belt” extending from Turin through Lombardy to Emilia-Romagna and Tuscany, with smaller clusters in Liguria’s port towns, Sardinia’s mining districts, and parts of Latium and Umbria. By contrast, both the Mezzogiorno and the Alpine fringe exhibited limited support for the left. The maps also highlight two turning points: the 1919 surge following franchise and electoral-system reforms, and the partial retrenchment by 1924 amid Fascist repression and intra-left divisions. The 1913–24 and 1948 returns are available at the municipal level; we aggregate them to agrarian zones weighting by valid votes to match the sharecropping data. Figure 3 displays the spatial distribution of support for the Popular Democratic Front in 1948, showing a postwar pattern that largely replicated the pre-Fascist strongholds of the PSI.

## 4.3 Other historical variables and controls

Our estimation models include covariates that capture the geographic and demographic characteristics of each agrarian zone. To represent geomorphological variation, we include average elevation (Altitude), distance from the sea (Sea distance, km), the share of mountainous terrain (Mountainous, ISTAT classification), and terrain roughness, drawn from ISTAT and GIS computations. These controls account for geographic factors that influenced the organization of agriculture and, indirectly, political preferences.

We further control for socio-demographic characteristics. Specifically, we include population in 1911 to ensure that sharecropping intensity does not proxy for zone size. We also incorporate employ-

Figure 2: Vote Share for the Socialist Party, 1913–1924

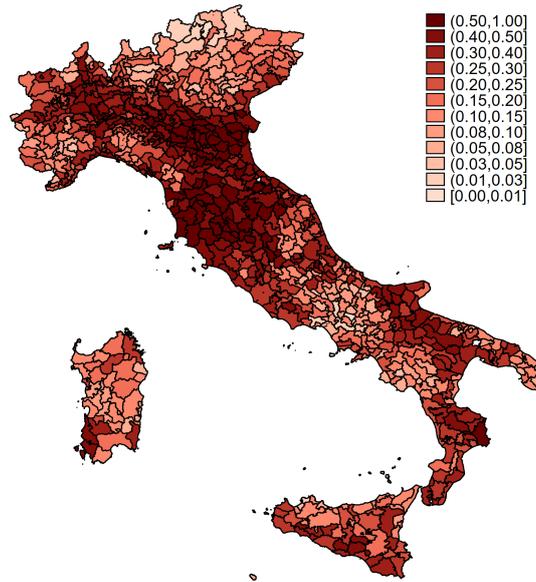


**Notes:** Agrarian-zone vote shares for the Socialist Party (PSI) in the 1913, 1919, 1921, and 1924 general elections. Data from *Elezioni alla Camera dei Deputati* (Corbetta et al. 2009), digitized by Acemoglu et al. (2022). Municipal returns are aggregated to agrarian zones weighting by valid votes.

ment shares in agriculture and manufacturing, measured in 1921 or 1951.<sup>4</sup> These variables mitigate concerns that estimated relationships reflect differences in workforce composition rather than contractual or institutional features.

<sup>4</sup>For pre-Fascist estimates we use 1921 employment shares, while we use 1951 employment shares for 1948 estimates.

Figure 3: Vote Share for the Popular Democratic Front, 1948



**Notes:** Percentage of valid votes cast for the Popular Democratic Front (PCI+PSI) in the 1948 general election. Municipal results aggregated to agrarian zones using valid-vote weights. Source: Corbetta et al. (2009).

## 5 Empirical Analysis

This section tests whether the historical prevalence of sharecropping shaped long-run political behavior. Our empirical strategy unfolds in three steps. First, we document the cross-sectional association between sharecropping intensity and left-wing voting through OLS regressions that include rich sets of geographic and socio-demographic controls. Second, to construct a clean counterfactual, we compare zones historically dominated by sharecropping with those dominated by a single alternative tenure regime, using entropy-balancing weights (Section 5.1). Third, we present quasi-experimental evidence from a spatial regression–discontinuity design that exploits abrupt terrain breaks (Section 5.2).

**Results.** Table 1 reports the cross-sectional association between sharecropping intensity and left-wing voting across five national elections (1913, 1919, 1921, 1924, and 1948). Two findings stand out. First, in the pre–World War I election of 1913, the coefficient on *Sharecropping* is small (0.092) and statistically indistinguishable from zero—consistent with our expectation that the institution only became politically salient after the war. Second, from 1919 onward, the relationship becomes both large and persistent: the effect more than triples in 1919, remains sizeable throughout the turbulent 1920s, and re-emerges even more strongly in 1948. In terms of magnitude, a one–standard-deviation increase in

sharecropping raises the Socialist vote share by about 0.18 SD in the interwar period and by roughly 0.35 SD in 1948. All specifications include the full set of geographic and demographic controls and employ Conley (50 km) spatially robust standard errors (Conley, 1999). The persistence of the results under this demanding specification suggests they are unlikely to be driven by omitted terrain or human-capital factors. Sample sizes vary across columns because some agrarian zones lack valid electoral returns in specific years; those zones are excluded on a column-wise basis.<sup>5</sup>

Table 1: Baseline Evidence

<i>Dependent Variable</i>	Socialist vote share				
	1913	1919	1921	1924	1948
Sharecropping 1921	0.092 (0.063) [0.075]	0.301*** (0.078) [0.192]	0.196*** (0.064) [0.156]	0.109*** (0.036) [0.159]	0.366*** (0.056) [0.345]
Geographic Controls	✓	✓	✓	✓	✓
Socioeconomic Controls	✓	✓	✓	✓	✓
Observations	557	557	525	557	557

Notes: OLS estimates. Column (1) uses the Socialist vote share in 1913 as the dependent variable; columns (2)–(4) repeat the specification for the Socialist vote shares in 1919, 1921, and 1924, respectively; column (5) takes the Popular Democratic Front vote share in 1948. *Sharecropping* is the percentage employed as sharecroppers over the total agricultural labor force in 1921. Geographic controls: altitude, mean terrain ruggedness, share of mountainous terrain, and distance to the sea. Socio-economic controls: log population (1911), and shares of agricultural and manufacturing employment (1921; and 1951 only when the outcome is measured in 1948). Observations are agrarian zones;  $N$  varies across columns because some zones lack valid electoral returns in the corresponding year (those zones are excluded column-wise). Standard errors, in parentheses, are computed à la Conley with a 50 km cutoff to allow for spatial correlation. Square-bracketed coefficients report standardized effects. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

The sharecropping coefficient for the 1919 election rises sharply to 0.301 and is significant at the 1% level (column 2). In standard-deviation terms (square-bracketed betas), this effect of 0.192 is more than twice the 1913 benchmark, indicating the sudden electoral mobilization of tenant families. The coefficient remains positive and significant in 1921 (0.196) and—although attenuated by Fascist intimidation and Socialist factionalism—still registers at 0.109 in 1924. The standardized impact ( $\approx 0.16$  SD) suggests that even under repression, the prevalence of sharecropping continued to shape vote choice.

Column (5) reveals the strongest association in the sample (0.366). Moving a zone from the 25th to the 75th percentile of 1921 sharecropping—an increase of about 16 percentage points—raises the Popular Democratic Front’s 1948 vote share by roughly 6 percentage points. Put differently, the estimate corresponds to about 0.35 standard deviations of the 1948 left-wing vote. Even though the contract was gradually phased out in many areas during the 1950s, its legacy remained clearly visible in postwar electoral outcomes. Taken together, Table 1 points to a clear temporal break—no effect before 1919, a

<sup>5</sup>In table B1 we restrict the sample to zones with complete election returns. Results are unaffected.

decisive effect thereafter—and a remarkable persistence of that effect over three decades. These dynamics align closely with the narrative in Section 3: once enfranchised, sharecroppers voted cohesively for parties promising contractual reform, and the cleavage forged during the *Biennio Rosso* and reinforced under Fascist repression remained a defining feature of local politics well into the Republican era.

**Robustness.** The association proves stable along four margins documented in the Online Appendix. (i) *Sample restrictions*—excluding one region at a time (Figure B1) or restricting the sample to zones observed in all elections (Table B1; Appendix B.1) leaves the pattern intact. (ii) *Alternative treatment measures*—using either the share of sharecroppers over population (1921) or the share of land farmed under sharecropping (1930)—yields comparable magnitudes across elections (Tables B2–B3; Appendix B.2). (iii) *Alternative specifications and weights*—population-weighted regressions reproduce the baseline coefficients (Table B6; Appendix B.3). (iv) *Inference*—the results remain robust to wider Conley cutoffs ( $t$ -statistics stable up to 500 km; Figure B2) and to clustering at the province level (Table B5; Appendix B.4).

## 5.1 Matching

OLS estimates compare areas with more sharecropping to a residual “non-sharecropping” group that mixes together owner-operated smallholdings, day-labor markets, and—rarely—fixed-rent tenancies. This generates an ill-defined counterfactual: differences in political behavior may reflect underlying regime composition rather than the presence (or absence) of sharecropping per se. To sharpen the comparison, we construct coherent treatment and control groups based on the dominant agrarian contract in each zone.

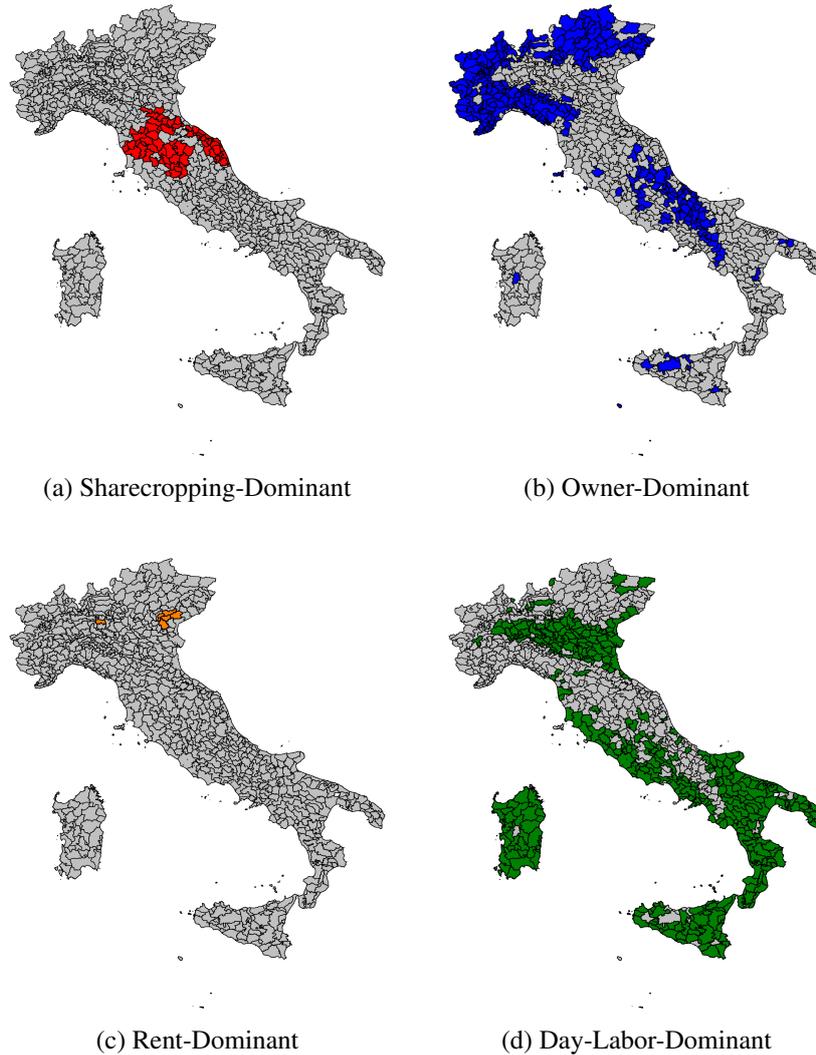
Using 1921 composition, we classify an agrarian zone as sharecropping-dominant if the share of sharecroppers is the modal category and at least 40%. Analogously, we identify owner-dominant (owner-operated), day-labor-dominant, and—where present—rent-dominant zones by applying the same rule to the other contracts. Figure 4 maps these four regimes across the country, showing that the dominant categories are geographically clustered and economically meaningful.<sup>6</sup>

For each comparison, we restrict the sample to the treated group (sharecropping-dominant) and one control pool (either owner-dominant or day-labor-dominant), excluding all other zones. We then compute entropy-balancing weights on the control pool following Hainmueller and Xu (2013), so that its covariate means match those of the treated group across the full set of baseline controls—geomorphology

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<sup>6</sup>Rent-dominant zones are extremely rare in our data; for this reason we do not use them as a primary control group in the matched comparisons.

Figure 4: Dominant Agrarian Contract



**Notes:** Dominant agrarian-contract regimes by agrarian zone (1921). Zones are classified as sharecropping-dominant, owner-dominant (farmers), day-labor-dominant, or rent-dominant when the corresponding contract is the modal category and accounts for at least 40% of the agricultural labor force. Zones that do not meet this dominance criterion (or ties) are left unclassified and are not used in the matched comparisons. The map is drawn on the 1921 agrarian-zone grid; contract shares are taken from the 1921 census-based composition described in Section 4.

(altitude, terrain ruggedness, mountainous share, distance to the sea), socio-economic characteristics (log population in 1911, and shares of agricultural and manufacturing employment in 1921), and pre-treatment political preferences (Socialist vote share in 1913). Balancing on the 1913 Socialist vote is crucial: it anchors pre-World War I political orientation, ensuring that post-1919 differences are not artifacts of pre-existing partisan geography. After weighting, we estimate ATT regressions where the treatment variable is a binary indicator equal to 1 for sharecropping-dominant zones and 0 for the selected control group; the same covariates enter the regression (doubly robust specification), and standard

errors are spatially robust (Conley, 50 km).

Table 2: Dominant-Tenure Matched Comparisons (Entropy Balancing)

<i>Dependent Variable</i>	Socialist vote share			
	<b>Sharecroppers vs. Owners</b>			
	1919	1921	1924	1948
Sharecropping	0.184*** (0.036) [0.362]	0.103** (0.046) [0.238]	0.033** (0.017) [0.143]	0.169*** (0.030) [0.428]
Geographic Controls	✓	✓	✓	✓
Socioeconomic Controls	✓	✓	✓	✓
Observations	246	233	246	246
	<b>Sharecroppers vs. Day Laborers</b>			
	1919	1921	1924	1948
Sharecropping	0.149*** (0.030) [0.206]	0.091*** (0.032) [0.161]	0.057*** (0.015) [0.199]	0.099*** (0.024) [0.215]
Geographic Controls	✓	✓	✓	✓
Socioeconomic Controls	✓	✓	✓	✓
Observations	317	299	317	317

Notes: Entropy-balanced matched comparisons of sharecropping-dominant agrarian zones against (i) owner-dominant zones (Panel A) and (ii) day-labor-dominant zones (Panel B). The treatment indicator equals 1 if, in 1921, sharecroppers are the modal contract and account for at least 40% of the agricultural labor force in the zone; it equals 0 for the relevant control pool. All other zones are excluded. Outcomes are the Socialist vote shares in 1913, 1919, 1921, and 1924, and the Popular Democratic Front vote share in 1948. Entropy-balancing weights are estimated on the control pool to reproduce the treated group's distribution of baseline geography (altitude, terrain ruggedness, mountainous share, distance to the sea), socio-demographics (log population in 1911, and agricultural and manufacturing employment shares), and pre-treatment political preferences (Socialist vote in 1913). Weighted regressions include the same covariates (doubly robust) and use spatially robust Conley standard errors with a 50 km cutoff. Observations are agrarian zones; sample sizes vary with data availability and the dominance criterion. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

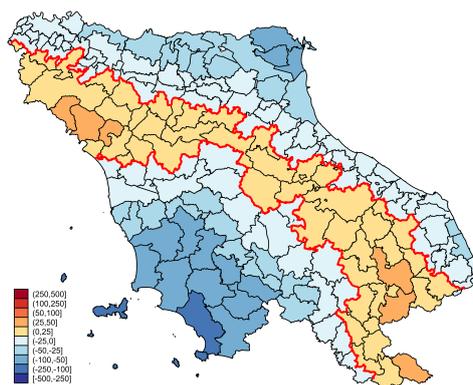
Table 2 reports estimates for two clean counterfactuals: sharecroppers versus owners (Panel A) and sharecroppers versus day-laborers (Panel B). In both cases, the treatment indicator is strongly associated with higher left-wing support from 1919 onward and remains sizeable in 1948, consistent with the cross-sectional patterns. The comparison with owners yields somewhat larger long-run differences in 1948, suggesting a particularly persistent cleavage when set against small-proprietor communities. By contrast, the comparison with day-laborers displays stronger interwar gaps (e.g., 1921), in line with a context where wage-labor markets and rural mobilization already shaped political behavior before the full postwar consolidation of the cleavage. Taken together, the two panels show that the choice of counterfactual matters substantively: owner-operated and day-labor zones represent systematically different control groups, and sharecropping-dominant areas are more left-leaning than both—with persistence particularly pronounced vis-à-vis owners and interwar strength especially marked vis-à-vis day-laborers.

**Robustness (Matching).** Online Appendix B.3 shows that matched effects are similar when we vary the dominance threshold used to define regimes: setting the cutoff to 50% (Table B4) leaves the substantive conclusions unchanged.

## 5.2 Spatial RDD

We complement the matching evidence with a geographic regression–discontinuity design that exploits the natural “cuts” where Central Italy’s mountain agrarian zones meet hill zones. Focusing on variation within high-sharecropping regions, we analyse the four central regions—Emilia-Romagna, Tuscany, Marche, and Umbria—each bisected longitudinally by the Apennines. Overlaying the official agrarian classification (plain–hill–mountain) on this morphology reveals two long borders—one on the Tyrrhenian side and one on the Adriatic—where mountain adjoins hill. As visualised in Figure 6, these borders are thin red lines along which the landscape class jumps while broader geographic and historical fundamentals vary smoothly. Our RDD hypothesis is that, in a small neighbourhood of those borders, potential outcomes and covariates evolve continuously and only the morphological class exhibits a discrete change. This induces an exogenous jump in the probability of adopting sharecropping (higher on the hill side than on the mountain side), which we use as an instrument in a fuzzy spatial RDD to identify the causal effect of sharecropping prevalence on the Socialist (Popular Democratic Front) vote in 1948. We work at the agrarian-zone level.

Figure 5: Distance from Borders

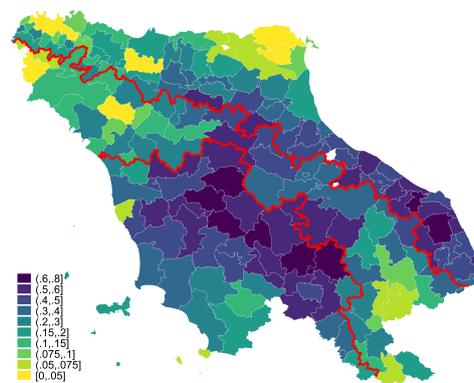


**Notes:** The figure plots the signed geodesic distance (km) from each agrarian zone to the nearest mountain–hill border. Distances are positive for zones on the mountain side and negative for zones on the hill side (0 at the border).

The running variable is the signed geodesic distance to the nearest mountain–hill border (positive on the mountain side). The forcing variable is not manipulable by economic or political actors in our period,

and the borders themselves reflect topographic transitions rather than administrative choices. Treatment is sharecropping prevalence in the zone; the discontinuity driver is the zone-class indicator  $Z_i = 1$  for mountain and 0 for hill. Because sharecropping is not deterministically assigned by zone class, the design is fuzzy: the first stage is the jump in sharecropping when crossing from hill into mountain. As anticipated, since we code mountain = 1 and hill = 0, and sharecropping is more prevalent on the hill side, the first-stage discontinuity is negative. Figures 5 and 6 map, respectively, the treated/untreated zones with their signed distance to the border, and the Popular Democratic Front vote share in 1948, while Figure C1 shades observations within the optimal bandwidth around each border.

Figure 6: RDD Sample



**Notes:** The figure plots the Popular Democratic Front vote share in 1948 (percent of valid votes) for agrarian zones in the RDD sample.

We estimate local-linear specifications with a triangular kernel and report bias-corrected point estimates and confidence intervals using Calonico–Cattaneo–Titiunik robust inference (CCT) (Calonico et al., 2014, 2020). Bandwidths are chosen via the optimal MSE-minimizing selectors. We pool the two borders but include border fixed effects to absorb any level differences across the Tyrrhenian and Adriatic cuts. Columns (1)–(3) of Table 3 follow a compact sequence: (1) baseline local-linear fuzzy RDD; (2) adding border FE; and (3) further adding the few baseline covariates exhibiting mild imbalance in narrow windows (see Appendix table C1). Implementation follows current best practice in geographic RD and modern bias correction for RD inference.

Panel A reports the first stage: moving from hill to mountain at the cutoff reduces sharecropping prevalence; estimates are stable when adding border FE (column 2) and when controlling for the small set of unbalanced covariates (column 3). Panel B combines the two into a 2SLS local average treatment effect of sharecropping on the Popular Democratic Front vote share in 1948 among compliers living near the borders. We focus on 1948 only in this RDD because pre-1948 election returns are missing for

Table 3: RDD Estimates

	<b>First stage: Sharecropping 1921</b>		
	(1)	(2)	(3)
RD_Estimate	-0.233*	-0.357**	-0.312**
	(0.124)	(0.159)	(0.131)
Robust P-value	0.053	0.035	0.030
	<b>2SLS: Left-wing vote share 1948</b>		
RD_Estimate	1.506*	0.883***	0.969***
	(0.706)	(0.255)	(0.284)
Robust P-value	0.087	0.003	0.004
Observations hill side	52	56	57
Observations mountain side	20	19	20
Polynomial Order	1	1	1
Boundary FE	×	✓	✓
Controls	×	×	✓

Notes: Local-linear fuzzy geographic RDD at the mountain–hill borders in Emilia–Romagna, Tuscany, Marche, and Umbria. The running variable is the signed geodesic distance (km) to the nearest mountain–hill border (positive on the mountain side; 0 at the border). Panel A reports the first stage (jump in sharecropping at the cutoff). Panel B reports 2SLS local average treatment effects of sharecropping on the Popular Democratic Front vote share in 1948 (percent of valid votes) among compliers near the borders. Estimates use a triangular kernel, MSE-optimal bandwidth selectors, and bias-corrected inference (CCT); two borders are pooled, and column (2) adds border fixed effects; column (3) further controls for baseline covariates exhibiting mild imbalance in narrow windows. Observations are agrarian zones within the optimal bandwidths around each border. Bias-corrected robust standard errors (CCT) in parentheses. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

several border-straddling zones, which would otherwise compromise the geographic window and comparability. This limitation does not affect the cross-sectional OLS and Matching analyses in Sections 4 and 4.1.

The RDD is deliberately local and asks whether, holding constant broader geography, the abrupt switch in morphology that shifts sharecropping also shifts the 1948 left-wing vote in the manner predicted by the baseline.

**Robustness (RDD).** Appendix C documents: (i) *Balance at the cutoff* for a wide set of pre-determined covariates (Table C1); and (ii) an *adjacency-only design* restricting to zones directly bordering the cutoff (Figure C2 and Table C2), which yields comparable first-stage and 2SLS effects. Together, these checks reinforce the local identification and the stability of the RDD estimates across design choices.

Taken together, the OLS, matching, and spatial RDD results provide convergent evidence that the historical geography of sharecropping exerted a persistent influence on local political behavior. Areas where tenant farming had been most prevalent consistently displayed stronger and more enduring support for left-wing parties across the twentieth century, even under changing institutional and economic

contexts. The next section turns to the mechanisms underlying this persistence—examining how the social structure, associational networks, and patterns of land reform rooted in the sharecropping system translated into long-run partisan alignment.

## 6 Mechanisms

### 6.1 Sharecroppers’ Polarization

We test our hypothesis implication that post-1918 agrarian contention concentrated in sharecropping areas. The analysis assembles annual counts of agrarian strikes by agrarian zone from the *Bollettini dell’Ufficio del Lavoro* issued by the *Ministero dell’Agricoltura, Industria e Commercio* between 1910 and 1920; the war years (1915–1918) are not observable in these sources. The dependent variable is the number of agrarian strikes recorded in a given zone–year. Table 4 reports cross-sectional regressions for a pre-war baseline (1913) and the immediate postwar peak (1920), relating strike intensity to local sharecropping prevalence while controlling for standard geographic and socioeconomic covariates. Subsequent columns add proxies for the broader conflict environment—industrial strikes in 1913 and own past agrarian strikes (1913). Inference is spatially robust.

Table 4: Sharecropper Polarization

<i>Dependent Variable</i>	Agrarian Strikes 1913		Agrarian Strikes 1920	
Sharecropping 1921	-0.018*	-0.018*	0.603**	0.675**
	(0.010)	(0.011)	(0.295)	(0.292)
	[-0.092]	[-0.096]	[0.160]	[0.179]
Industrial Strikes 1913		-0.026		0.832***
		(0.017)		(0.280)
		[-0.067]		[0.109]
Agrarian Strikes 1913				2.781***
				(1.018)
				[0.141]
Geographic Controls	✓	✓	✓	✓
Socioeconomic Controls	✓	✓	✓	✓
Observations	557	557	557	557

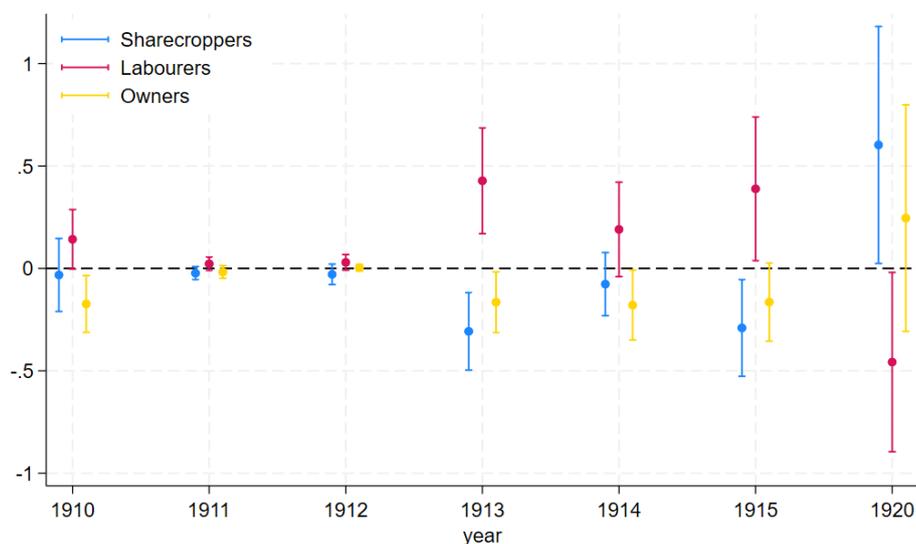
Notes: Cross-sectional OLS regressions at the agrarian-zone level. Dependent variable: number of agrarian strikes in a zone–year. Columns (1)–(2) take 1913 as the pre-war baseline; the remaining columns take 1920. The key regressor is *Sharecropping* (1921; percent of the agricultural labor force). Where indicated, proxies for the broader conflict environment (industrial strikes in 1913; agrarian strikes in 1913). All specifications include geographic controls (altitude, terrain ruggedness, mountainous share, distance to the sea) and socioeconomic controls (log population 1911, and agricultural and manufacturing employment shares in 1921). Municipal strike counts are aggregated to agrarian zones by summation. Standard errors, in parentheses, are computed à la Conley with a 50 km cutoff to allow for spatial correlation. Square-bracketed coefficients report standardized effects. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

Two results stand out in Table 4. First, on the eve of the war (1913), areas with more sharecropping

were not more contentious: the coefficient is small and negative (about  $-0.018$ ). Second, by 1920 the association flips sign and becomes large and precisely estimated: zones with higher pre-war sharecropping register substantially more agrarian strikes, with coefficients in the 0.60–0.68 range. The 1920 effect remains strong when conditioning on pre-war agrarian contention and on the pre-war industrial strike environment, consistent with a postwar polarization of conflict around sharecropping communities rather than a generic surge in unrest.

Figure 7 explores dynamics and composition without changing the dependent variable. We re-run the same specification used in column (3) of Table 4 across a grid that varies (i) the year in which strikes are measured—cycling through 1910–1914 and 1919–1920—and (ii) the key explanatory variable—alternating between the zone’s share of sharecroppers, the share of day-laborers, and the owners’ share. This produces twenty-one regressions in total. Two regularities emerge. Before the war, the share of day-laborers is the relevant predictor of agrarian strikes, while the share of sharecroppers shows no systematic link. After the war, the profile reverses: the share of sharecroppers becomes a strong positive predictor of strike incidence, whereas the predictive content of the laborers’ share attenuates.

Figure 7: Agrarian Strikes and Land Tenure



**Notes:** Coefficient estimates (points) with 95% confidence intervals from OLS regressions that vary the strike year (1910–1914; 1919–1920) and the key regressor (sharecroppers, day-laborers, owners’ share). All specifications replicate the controls in column (3) of Table 4 (geography and socioeconomic covariates) and use Conley standard errors with a 50 km cutoff. Municipal strike counts are aggregated to agrarian zones by summation.

Taken together, the table and the figure document a postwar polarization of agrarian contention around *mezzadria* communities. Before 1914, rural protest was primarily a laborers’ phenomenon; in the aftermath of the conflict, sharecroppers became the principal force behind strikes and bargaining

campaigns—consistent with a shift in grievances and bargaining power that brought sharecroppers from relative quiescence to organizational leadership.

## 6.2 Sharecroppers and Fascist Violence

Having documented a postwar polarization of rural contention around sharecropping communities, we now show that this polarization was met with targeted Fascist repression. The first step is a cross-sectional test that takes as dependent variable the *number of Fascist violent episodes* recorded in each agrarian zone during 1920–1922 (Franzinelli’s catalog). Table 5 reports that zones with a higher prevalence of sharecropping exhibit significantly more Fascist violence. The coefficient on *Sharecropping* is large and precisely estimated across specifications with rich geographic and socioeconomic controls; it remains robust when accounting for potential confounders such as the incidence of WWI veterans, the presence of landlords’ associations, and contemporary Socialist vote shares. In all cases, inference is spatially robust, and the pattern is consistent with paramilitary squads being deployed where postwar agrarian conflict was most intense.

Table 5: Sharecropping and Fascist Violence

<i>Dependent Variable</i>	Fascist Violence			
Sharecropping 1921	0.116*** (0.040) [0.170]	0.099** (0.042) [0.145]	0.136*** (0.040) [0.198]	0.094** (0.038) [0.138]
Veterans WWI		0.196** (0.090) [0.109]	0.154** (0.076) [0.086]	-0.003 (0.076) [-0.001]
Landlords’ Associations			0.114*** (0.025) [0.353]	0.082*** (0.024) [0.253]
Share Socialists 1919				0.151*** (0.030) [0.346]
Geographic Controls	✓	✓	✓	✓
Socioeconomic Controls	✓	✓	✓	✓
Observations	557	557	557	557

Notes: Cross-sectional OLS regressions at the agrarian-zone level. Dependent variable: number of Fascist violent episodes in 1920–1922 (Franzinelli). Key regressor: *Sharecropping* (1921; percent of the agricultural labor force). Specifications include geographic controls (altitude, terrain ruggedness, mountainous share, distance to the sea) and socioeconomic controls (log population 1911, agricultural and manufacturing employment shares). Additional columns control for WWI veterans, landlords’ associations, and Socialist vote in 1919. Standard errors, in parentheses, are computed à la Conley with a 50 km cutoff. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

We then move from levels to timing by exploiting daily variation in 1921. The panel is built at the agrarian-zone  $\times$  day level from the same violence dataset (936 dated episodes in 1921) and lever-

ages the custom of *fare San Martino*—11 November—when sharecropping contracts were traditionally terminated or renewed, often implying evictions and relocations. We construct a shift–share treatment that interacts zone sharecropping intensity with an indicator for the *San Martino* window, defined as 9–17 November.<sup>7</sup> Intuitively, places with more sharecroppers should experience a sharper, short-lived rise in tensions exactly when contracts could be renegotiated, raising the payoff to intimidation. The dependent variable in the panel is a binary indicator equal to 1 if at least one Fascist episode is recorded in a zone–day (baseline frequency 0.3%). Estimates with zone fixed effects, week fixed effects, and region×week fixed effects show that the interaction  $Sharecropping_z \times SanMartino_t$  is strongly positive and statistically significant, with estimates in the 0.014–0.021 range across FE stacks. A value of 0.021 on a 0.003 base implies a sevenfold increase during the window in high-sharecropping zones. Geographic and socioeconomic controls are interacted with week fixed effects throughout, allowing flexible weekly trends by covariate. Results are stable to alternative FE stacks and remain sizable relative to the mean.

Table 6: Sharecropping and Fascist Violence (Daily Panel, 1921)

<i>Dependent Variable</i>	Fascist Violence			
Sharecropping 1921 x San Martino (9-17 Nov.)	0.014** (0.006) [0.007]	0.021*** (0.008) [0.011]	0.021*** (0.008) [0.011]	0.021** (0.009) [0.010]
Sample Mean	0.003	0.003	0.003	0.003
Agrarian Zone FEs	✓	✓	✓	✓
Week FEs	✓	✓	✓	✓
Region FEs × Week FEs	×	✓	✓	✓
Geographic Controls × Week FEs	×	×	✓	✓
Socioeconomic Controls × Week FEs	×	×	×	✓
Observations	257,325	257,325	257,325	201,115

Notes: Zone–day panel regressions for 1921. Dependent variable: indicator for any Fascist violent episode in a zone–day (Franzinielli). The treatment window is *San Martino* (9–17 November). Main regressor:  $Sharecropping_z \times SanMartino_t$ , where Sharecropping is the 1921 share of the agricultural labor force. All specifications include zone and week fixed effects; columns with “Region FEs × Week FEs” add region-by-week dummies. Geographic and socioeconomic controls are interacted with week fixed effects. Standard errors, in parentheses, are computed à la Conley with a 50 km cutoff. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

Figure D2 probes specificity. Keeping the dependent variable fixed, we replace the sharecropping term in the interaction with the prevalence of other tenure forms. Those interactions are small and statistically indistinguishable from zero around *San Martino*, while the sharecropping interaction remains large and precise. This null for alternative contracts rules out a generic “November shock” and indicates that the *San Martino* spike is salient for sharecroppers only—consistent with Fascist squads timing repression to the contract cycle of sharecropping rather than to rural labor markets more broadly. Taken

<sup>7</sup>In the province of Bologna, contract closure followed *San Michele* (8 May). Accordingly, for agrarian zones in Bologna province the window is defined as 6–14 May.

together, the cross-section and the daily panel close the circle: where sharecroppers polarized, Fascist violence concentrated, and it did so exactly when the institutional calendar of sharecropping made coercion most effective.

**Robustness (Fascist Violence).** Online Appendix D shows: (i) a *narrower treatment window* (10–13 November) delivering similar effects (Table D1); and (ii) *placebo shifts* moving the window earlier or later, which yield no systematic effects outside the *San Martino* window (Figure D1).

The mechanism tests show how contractual arrangements translated into political behavior. Sharecropping areas experienced stronger postwar contention, more targeted repression, and a lasting shift in electoral support. Together, these findings link variation in agrarian institutions to subsequent patterns of conflict and alignment.

## 7 Conclusion

This paper has traced a contractual origin of interwar political polarization and repression in rural Italy. We argued that the geography of sharecropping (*mezzadria*) created a configuration of incentives and organization that intensified post-1918 agrarian contention, and that Fascist squads responded with targeted violence precisely when bargaining power shifted. We documented this revolt – repression – realignment sequence using three complementary designs: cross-sectional estimates linking the 1921 prevalence of sharecroppers to left-wing voting from 1919 through 1948 under rich spatially robust controls and balancing; a morphology-based spatial RDD validating the result at local borders; and a fine-grained zone-by-day analysis showing a sharp temporal concentration of Fascist violence during the renewal window only in sharecropping areas. Taken together, these findings reveal a contractual foundation for the rural political cleavage that both prefigured and survived the authoritarian turn.

The contribution is twofold. Substantively, we move beyond “shock-driven threat” narratives of the *Biennio Rosso* by identifying a structural locus of conflict: a widespread contractual regime that made collective action salient and credible for tenants while concentrating employer resistance. Methodologically, we combine spatial and temporal identification around an institutionally meaningful moment—the annual reset of *mezzadria* contracts—to show how micro-timing evidence can discipline broader historical claims about repression and political alignment. The convergence of cross-sectional, border, and event-time evidence strengthens the case that the observed patterns are not artifacts of unobserved geography, slow-moving socioeconomic gradients, or generic postwar turmoil.

Our results also clarify how early interwar cleavages relate to later political consolidation. The per-

sistence we document up to 1948 predates post-1950 land reform and clientelistic networks, indicating that multiple mechanisms layered over time helped shape Italy's electoral geography. Conflict and repression in the *mezzadria* countryside forged a left alignment that did not rely on distributive exchange; later institutions may have interacted with, rather than created, this foundation. Recognizing this stratigraphy of mechanisms is essential for interpreting long-run political persistence.

These findings have broader implications for the political economy of institutions. Contractual regimes organize risk, surplus, and authority within the farm, but they also structure outside options, associational capacity, and the returns to coercion. Where contracts reset periodically and bargaining power shifts discretely, windows of vulnerability arise in which organized violence can be especially effective. Similar contractual calendars in other agrarian settings—and, more generally, institutional routines that bunch renegotiation—may help explain when and where coercive actors can most efficiently target mobilized opponents.

We do not claim that *mezzadria* alone determined interwar outcomes. Our empirical designs absorb many geographic and socioeconomic correlates and pass a battery of spatial and timing falsification tests, but measurement error in historical exposure, archival underreporting of violence, and residual selection at broader spatial scales remain possible. The *San Martino* design sharpens temporal inference for 1921; extending comparable micro-timing strategies to other episodes and regions would further test the mechanism. Likewise, linking household-level tenure histories to organization and voting would illuminate the individual channels through which contracts map into politics.

More broadly, the analysis underscores how the microfoundations of political conflict can lie in the everyday organization of production. Contractual regimes that define who bears risk, who controls information, and when bargaining power shifts can leave durable imprints on political alignments long after the contracts themselves disappear. Tracing these institutional legacies across settings—whether in colonial plantations, mining concessions, or contemporary labor outsourcing—may reveal common patterns through which economic governance translates into collective action, repression, and long-run political persistence.

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## PLANTING THE SEEDS OF POLARIZATION: SHARECROPPING, AGRARIAN CONFLICT AND ENDURING POLITICAL DIVIDES

Paolo Buonanno    Giacomo Plevani

This Online Appendix accompanies the paper *Planting the Seeds of Polarization: Sharecropping, Agrarian Conflict and Enduring Political Divides*. It provides additional information on data sources, variable definitions, and empirical robustness checks that complement the main analysis.

### A Data and Context

*This section documents the historical sources and measures of sharecropping intensity used in the analysis. We present descriptive maps illustrating spatial patterns and persistence of sharecropping across Italian agrarian zones.*

#### A.1 Summary Statistics

**Table A1:** Summary Statistics

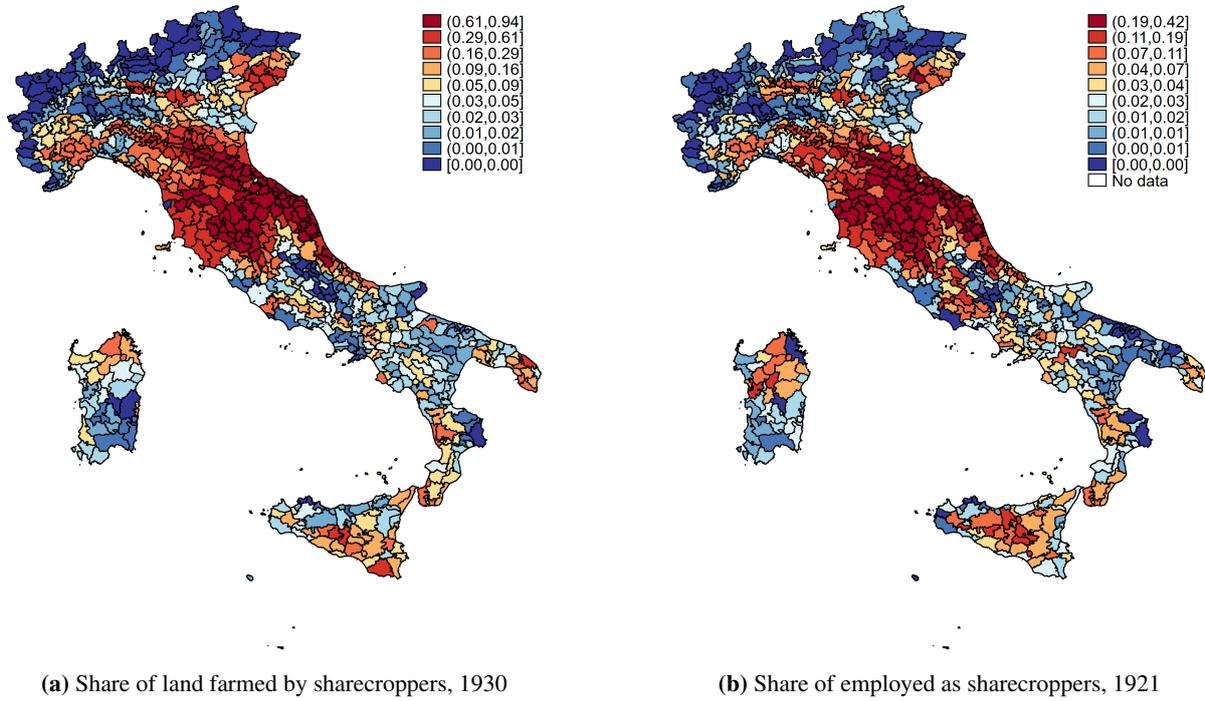
<i>Variable</i>	Observations	Mean	Std. Dev.	Median	Min	Max
Socialist 1913 (vote share)	557	0.154	0.188	0.065	0.000	0.861
Socialist 1919 (vote share)	557	0.295	0.239	0.260	0.000	0.907
Socialist 1921 (vote share)	525	0.270	0.191	0.254	0.000	0.775
Socialist 1924 (vote share)	557	0.118	0.104	0.098	0.000	0.508
Popular Democratic Front 1948 (vote share)	720	0.276	0.161	0.255	0.007	0.723
Sharecropping 1921 (agric. employment)	719	0.121	0.152	0.058	0.000	0.660
Sharecropping 1930 (surface)	720	0.171	0.247	0.052	0.000	0.943
Altitude (m)	720	361.0	286.1	314.2	0.5	1816.0
Terrain roughness	720	217.6	186.3	178.3	1.1	854.6
Mountainous terrain (share)	720	49.07	43.40	46.45	0.0	100.0
Sea distance (km)	720	57.34	50.39	45.90	0.0	214.7
Population 1911 (log)	557	8.114	1.001	8.079	5.722	13.20
Industrial employment 1921 (share)	557	0.090	0.081	0.065	0.000	0.558
Agricultural employment 1921 (share)	719	0.573	0.165	0.611	0.032	1
Agricultural employment 1951 (share)	720	0.597	0.179	0.639	0.037	0.945
Industrial employment 1951 (share)	720	0.246	0.143	0.202	0.014	0.810

*Notes:* Each row reports summary statistics across agrarian zones.

#### A.2 Historical Sharecropping Intensity

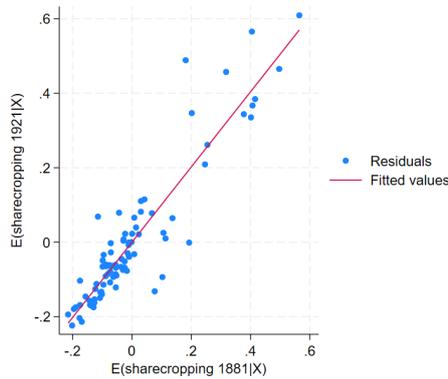
The main explanatory variable measures the prevalence of sharecropping contracts across agrarian zones. We reconstruct this using the 1921 agricultural census and the 1930 land-use survey, complemented by earlier data from 1881 to measure persistence.

**Figure A1: HISTORICAL SHARECROPPING INTENSITY**



*Notes:* The left panel shows the share of agricultural land farmed by sharecroppers in 1930 (ISTAT, 1930). The right panel shows the share of employed as sharecroppers over total population in 1921 (MAIC, 1926).

**Figure A2: Sharecropping Persistence**



**Notes:** Binned scatter of the share of employed as sharecroppers in 1881 and 1921, after partialling out baseline controls.

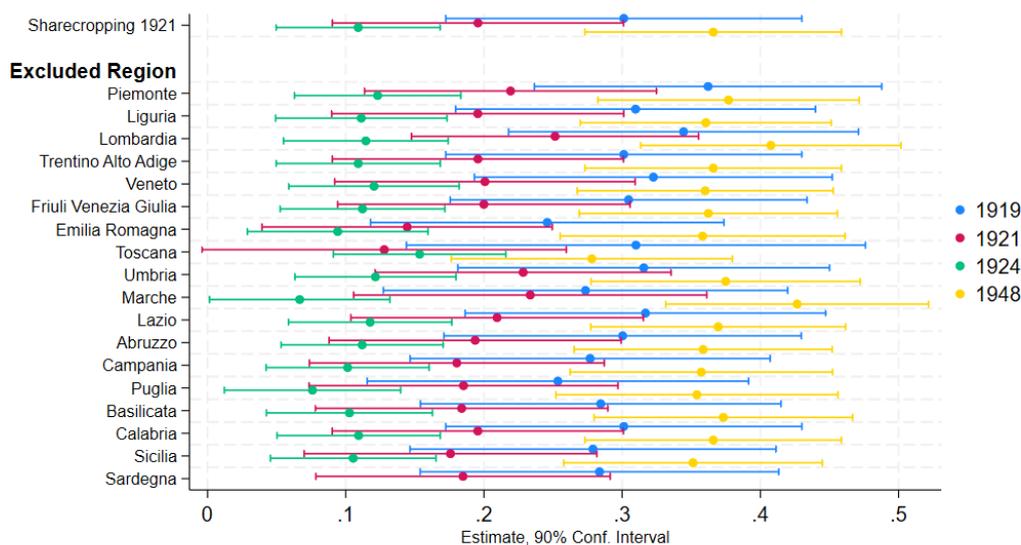
## B Robustness of Baseline Results

This section presents robustness checks for the baseline regressions in Table 1 of the paper. We explore the influence of sample restrictions, alternative measures of sharecropping, matching and weighting schemes, and different inference procedures.

### B.1 Sample Restrictions and Influence

We first verify that the main results are not driven by any individual region or by zones with incomplete electoral data. Figure B1 implements a leave-one-out procedure, while Table B1 restricts the sample to zones with complete election returns.

**Figure B1:** Region-by-Region Leave-One-Out



**Notes:** Each row shows the estimated coefficient for Sharecropping 1921 excluding the region specified. Baseline coefficients (Table 1) are in blue, red, yellow, and green.

**Table B1:** Baseline Evidence: Zones with All Election Data

<i>Dependent Variable</i>	Socialist vote share				
	1913	1919	1921	1924	1948
Sharecropping 1921	0.093 (0.064) [0.081]	0.288*** (0.078) [0.198]	0.196*** (0.064) [0.166]	0.101*** (0.036) [0.157]	0.359*** (0.058) [0.356]
Geographic Controls	✓	✓	✓	✓	✓
Socioeconomic Controls	✓	✓	✓	✓	✓
Observations	525	525	525	525	525

*Notes:* OLS estimates. See paper for variable definitions. Standard errors are Conley-corrected with 50 km cutoff. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

## B.2 Alternative Definitions of Sharecropping

**Table B2:** Baseline Evidence: Sharecroppers over Population

<i>Dependent Variable</i>	Socialist vote share				
	1913	1919	1921	1924	1948
Sharecropping 1921	0.193* (0.109) [0.086]	0.583*** (0.138) [0.206]	0.385*** (0.114) [0.170]	0.225*** (0.065) [0.182]	0.666*** (0.101) [0.348]
Geographic Controls	✓	✓	✓	✓	✓
Socioeconomic Controls	✓	✓	✓	✓	✓
Observations	557	557	525	557	557

*Notes:* Sharecropping measured as share of employed sharecroppers over population, 1921. Standard errors are Conley-corrected with 50 km cutoff. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

**Table B3:** Baseline Evidence: Share Land Farmed under Sharecropping

<i>Dependent Variable</i>	Socialist vote share				
	1913	1919	1921	1924	1948
Sharecropping 1930	0.096** (0.041) [0.127]	0.235*** (0.049) [0.243]	0.128*** (0.043) [0.166]	0.069*** (0.022) [0.164]	0.235*** (0.037) [0.360]
Geographic Controls	✓	✓	✓	✓	✓
Socioeconomic Controls	✓	✓	✓	✓	✓
Observations	557	557	525	557	557

*Notes:* Sharecropping measured as share of land farmed by sharecroppers in 1930. Standard errors are Conley-corrected with 50 km cutoff. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

## B.3 Matching, Weighting, and Dominance Thresholds

We evaluate robustness to alternative reweighing and dominance criteria. Using entropy balancing, we match sharecropping-dominant zones with comparable owner- and day-laborer-dominant zones under 50% thresholds. We also report population-weighted OLS regressions.

**Table B4:** Dominant-Tenure Matched Comparisons (Entropy Balancing, 50% dominance)

<i>Dependent Variable</i>	Socialist vote share			
	<b>Sharecroppers vs. Owners</b>			
	1919	1921	1924	1948
Sharecropping	0.134*** (0.040) [0.240]	0.016 (0.036) [0.035]	-0.037 (0.029) [-0.142]	0.186*** (0.032) [0.448]
Geographic Controls	✓	✓	✓	✓
Socioeconomic Controls	✓	✓	✓	✓
Observations	184	176	184	184
	<b>Sharecroppers vs. Day Laborers</b>			
	1919	1921	1924	1948
Sharecropping	0.133*** (0.035) [0.165]	0.064** (0.029) [0.101]	0.040** (0.020) [0.130]	0.139*** (0.028) [0.278]
Geographic Controls	✓	✓	✓	✓
Socioeconomic Controls	✓	✓	✓	✓
Observations	242	226	242	242

Notes: We replicate table 2 using 50% dominance threshold. Standard errors are Conley-corrected with 50 km cutoff. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

**Table B5:** Baseline Evidence: cluster province level

<i>Dependent Variable</i>	Socialist vote share				
	1913	1919	1921	1924	1948
Sharecropping 1921	0.092 (0.074) [0.078]	0.301*** (0.087) [0.200]	0.196** (0.081) [0.166]	0.109*** (0.039) [0.166]	0.366*** (0.066) [0.358]
Geographic Controls	✓	✓	✓	✓	✓
Socioeconomic Controls	✓	✓	✓	✓	✓
Observations	557	557	525	557	557

Notes: Standard errors, in parentheses, are clustered at province level. Square-bracketed coefficients report standardized effects. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

**Table B6:** Baseline Evidence: population weight

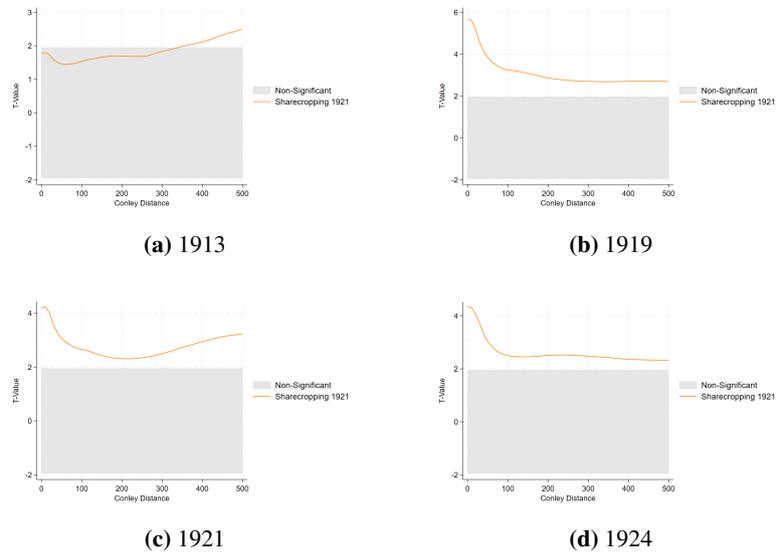
<i>Dependent Variable</i>	Socialist vote share				
	1913	1919	1921	1924	1948
Sharecropping 1921	0.067 (0.067) [0.054]	0.241*** (0.077) [0.154]	0.147** (0.070) [0.118]	0.038 (0.042) [0.055]	0.326*** (0.058) [0.308]
Geographic Controls	✓	✓	✓	✓	✓
Socioeconomic Controls	✓	✓	✓	✓	✓
Observations	557	557	525	557	557

Notes: OLS estimates. See paper for variable definitions. Observations are weighted by agrarian zone population in 1921. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

## B.4 Alternative Inference Methods

Finally, we assess robustness to spatial correlation assumptions by applying Conley (1999) standard errors at various cutoffs and clustering at the province level. Figure B2 illustrates the stability of t-values across spatial bandwidths.

**Figure B2:** Spatial Autocorrelation: Conley Threshold



Notes: Evolution of t-values using Conley SEs with increasing distance cutoffs (0–500 km).

## C Spatial RDD Validation and Robustness

*This section validates the morphology-based spatial regression discontinuity design. We check for balance in pre-determined covariates, visualize the local sample, and test sensitivity to alternative sample definitions.*

### C.1 Balance and Validity Checks

Table C1 reports discontinuities for key covariates across mountain–hill borders. Non-morphological variables are smooth, supporting the validity of the identification strategy.

**Table C1: Balance Tests**

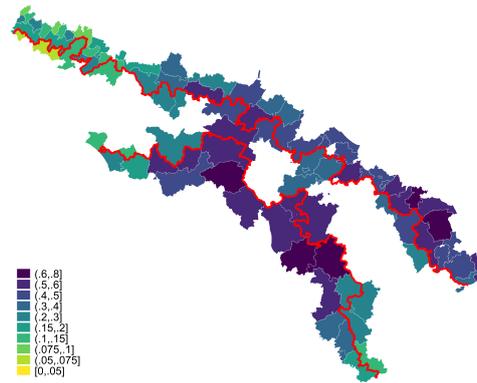
Optimal Bandwidth:	Variable-Specific		Benchmark	
	RD Estimate	Robust P-Value	RD Estimate	Robust P-Value
	(1)	(2)	(3)	(4)
Altitude	426.5409	0.0346	247.6112	0.0121
Ruggedness	92.8144	0.2643	84.9607	0.1074
Share of Mountains	31.4930	0.3342	36.8432	0.1452
Distance to the Sea	4.6531	0.9876	2.0066	0.9315
Share Arable Land	-0.1780	0.3520	-0.1814	0.3507
Wheat Suitability	2.4060	0.8044	19.5210	0.9623
Distance Headtown	-28.8077	0.6385	-35.9768	0.4820
Industrial Workers 1921	0.0197	0.9703	0.0031	0.8396
Literacy (1921)	0.0221	0.8570	0.0004	0.8396
Log Population 1911	1.0189	0.5233	0.2609	0.9373
Log Surface	-39.1751	0.6114	-16.3790	0.8747
Veterans WWI	0.0452	0.4027	-0.0011	0.8788
Agrarian Strikes 1920	1.2022	0.4514	0.9150	0.1002
Population Scattered Houses	-13952.3589	0.3658	-15252.7330	0.0236
Employment in Agriculture (1951)	35.7081	0.1130	28.0113	0.0019
Illiteracy (1951)	5.4194	0.6143	4.8659	0.4851
Employment in Industry (1951)	-29.3773	0.0798	-21.3842	0.0016
Landlords' Associations	-0.9111	0.0571	-0.3508	0.0631

Notes: Discontinuities across mountain–hill borders. Robust p-values computed using bias-corrected CCT inference.

### C.2 Visualization of the RDD Sample

We map the zones included in the optimal RDD bandwidth and highlight those adjacent to the morphology border.

**Figure C1: RDD Bandwidth**

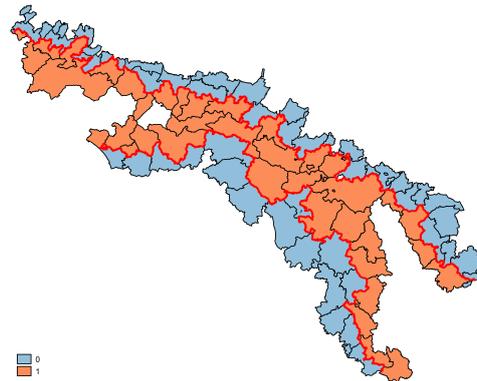


**Notes:** Zones within optimal RDD bandwidth.  
Outcome: 1948 Popular Democratic Front vote share.

### C.3 Sensitivity of RDD Estimates

Restricting the analysis to adjacent zones or varying the bandwidth yields consistent estimates, confirming that results are not driven by a specific subset of observations.

**Figure C2: Only Adjacent to Borders: Sample**



**Notes:** Treated (orange) and control (gray) zones adjacent to morphology borders.

**Table C2:** RDD estimates: Only Adjacent to Borders

	<b>First stage: Sharecropping 1921</b>		
	(1)	(2)	(3)
Mountain Zones	-0.140*** (0.033)	-0.141*** (0.033)	-0.142*** (0.028)
F stat	17.171	18.014	23.311

	<b>2SLS: Left-wing vote share 1948</b>		
	(1)	(2)	(3)
Sharecropping 1921	0.425* (0.222)	0.432** (0.208)	0.489** (0.195)
Observations	80	80	80
Boundary FE	×	✓	✓
Controls	×	×	✓

Notes: RDD. Observations are agrarian zones. Standard errors in parentheses are clustered to account for spatial correlation up to 50 km. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

## D Mechanisms and Timing of Violence

This section presents robustness checks for the zone–day panel analysis of San Martino celebrations in November 1921. We narrow treatment window around San Martino, implement a placebo shifts moving the window earlier or later and test contract heterogeneity.

### D.1 San Martino narrower Window

Table D1 reports daily panel regressions for the 10–13 November period. The interaction between sharecropping intensity and the San Martino window is positive and significant, indicating disproportionate violence in sharecropping zones.

**Table D1:** Sharecropping and Fascist Violence (Daily Panel, 1921: 10–13 Nov.)

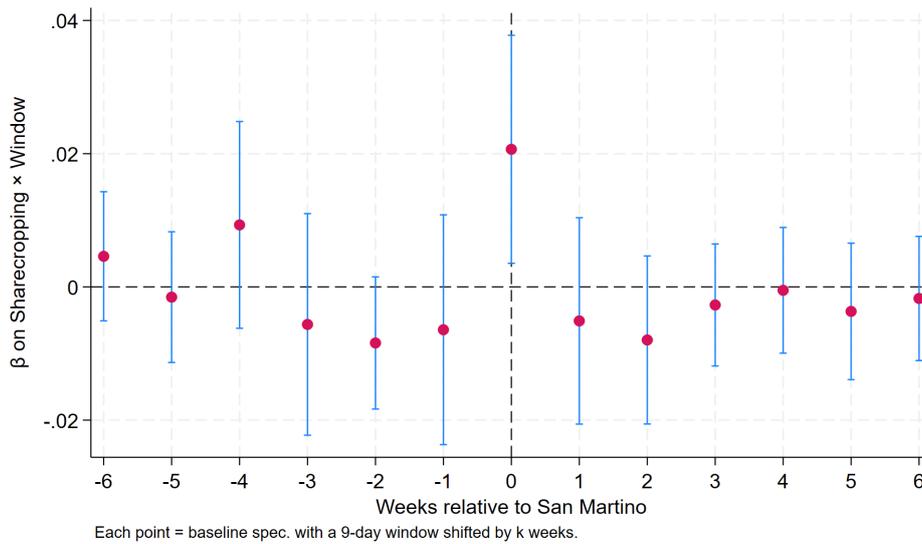
<i>Dependent Variable</i>	Fascist Violence			
Sharecropping 1921 x San Martino (10-13 Nov.)	0.036*** (0.013) [0.012]	0.041*** (0.013) [0.014]	0.041*** (0.013) [0.014]	0.041*** (0.015) [0.014]
Sample Mean	0.003	0.003	0.003	0.003
Agrarian Zone FEs	✓	✓	✓	✓
Week FEs	✓	✓	✓	✓
Region FEs × Week FEs	×	✓	✓	✓
Geographic Controls × Week FEs	×	×	✓	✓
Socioeconomic Controls × Week FEs	×	×	×	✓
Observations	257,325	257,325	257,325	201,115

Notes: Zone–day panel regressions for 1921. Standard errors are Conley-corrected (50 km cutoff). \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

### D.2 Placebo Timing Tests

To rule out spurious seasonal effects, we re-estimate the model shifting the San Martino window forward and backward by several weeks. Figure D1 shows that effects occur only around the true event date.

**Figure D1: Placebo Shifts of San Martino Window**

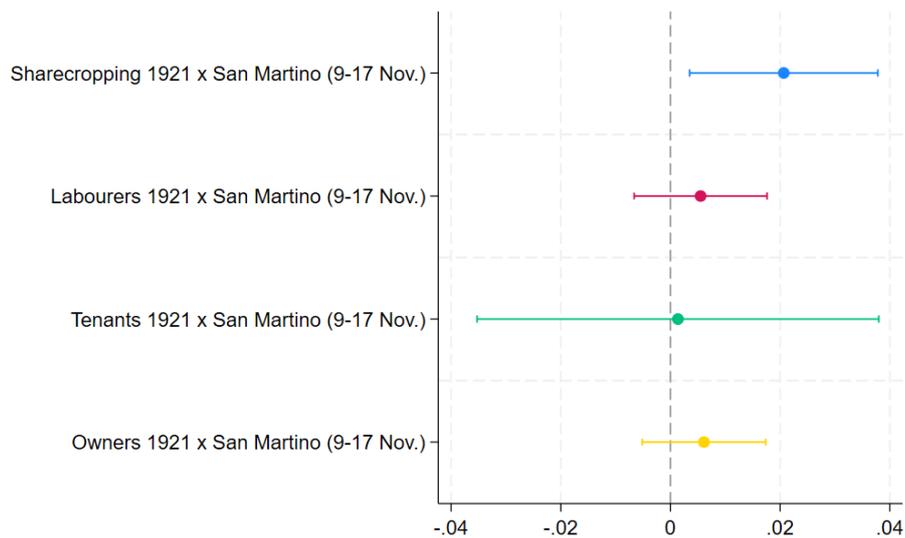


**Notes:** Each dot is  $\hat{\beta}_k$  from placebo regressions shifting the San Martino window by  $k$  weeks. 95% confidence intervals shown.

### D.3 Contract Heterogeneity

Finally, Figure D2 interacts the San Martino window with shares of alternative contracts. Only sharecropping intensity predicts Fascist violence, confirming targeted repression.

**Figure D2: Fascist Violence by Agricultural Contracts**



**Notes:** Coefficients from regressions interacting contract shares with San Martino window. SEs Conley-corrected (50 km cutoff).

**Summary.** Violence peaked in sharecropping zones during the *San Martino* period and was absent elsewhere. The results support the interpretation of repression as a mechanism reinforcing long-run political realignment.

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