The Legacies of Early Labor Mobilization: Evidence from Spain

Abstract

Legacies research has expanded rapidly in recent years, establishing numerous links between the past and contemporary political behavior. Using original data on early 20th-century labor organizations across Spanish municipalities, I document a positive long-term association between early organized labor and left-wing electoral support in 1977. This association spans regime changes, a civil war, and four decades of dictatorship, and is already evident in the 1936 elections. Several robustness tests, analyses of intermediate historical periods, and checks addressing spatial dependence support the main findings. Focusing on the conditions that sustain or erode these connections over time, I also examine whether the strength of this association varies across subsequent local trajectories, finding a weaker relationship in municipalities experiencing greater population growth. Historical accounts further illustrate how labor traditions could survive through family, workplace, and community ties. The article contributes to our understanding of the historical foundations of leftist political mobilization and the conditions shaping historical transmission, shifting the focus from identifying historical legacies to explaining variation in their long-term political relevance.

Keywords: legacies; transmission; labor mobilization; voting behavior

Introduction

A decade before the establishment of the Spanish Second Republic in 1931, the municipalities of Villa del Campo and Casas de Millan displayed sharply different levels of labor mobilization. Located 50 kilometers apart in western Spain, the two small rural towns had roughly 1,300 inhabitants each in 1920. While Villa del Campo had no registered labor organizations, more than 10 per cent of Casas de Millan's population belonged to the local farm laborers' society. Between 1920 and 1975, both towns lost nearly one-third of their residents. In Spain's first democratic elections after Francoism in 1977, left-wing parties obtained 0.5 per cent of the vote in Villa del Campo, compared to 48 per cent in Casas de Millan. This contrast suggests that early labor mobilization can remain politically relevant decades later.

The shadow of early labor mobilization seems less pronounced in other contexts. In the Madrid metropolitan area, the populations of Leganes and Mostoles, once rural villages, increased more than thirty-fold between 1920 and 1975. In 1920, whereas Mostoles had no formally organized labor, around 6 per cent of Leganes's population belonged to the local agricultural section of the *Unión General de Trabajadores* (UGT), the socialist trade union. In this case, despite these differences in early labor mobilization, leftist parties in both cities secured over 50 per cent of the total vote in the 1977 elections.

Does early labor mobilization remain associated with electoral behavior decades later? How does this association vary across different historical trajectories? To address these questions, I construct an original dataset combining historical, socioeconomic, and electoral information for over 7,500 Spanish municipalities. Drawing on multiple empirical strategies, I first document a robust long-run relationship between labor mobilization during the 1887-1920 period and voting patterns in the 1977 elections. I then analyze how this legacy varies across local contexts, finding a stronger relationship in municipalities experiencing less population growth and a weaker one in those experiencing greater growth.

These results are consistent with the interpretation that subsequent transformations may disrupt

the local environments through which legacies persist across generations. By situating legacies within the subsequent historical trajectories in which they are embedded, I propose a framework for understanding how the evolution of the local context may condition the relative importance of historical legacies. Building on previous research suggesting this possibility (Charnysh and Peisakhin, 2022; Voigtländer and Voth, 2012), I investigate how long-term demographic trajectories relate to historical persistence.

Spain makes a compelling case for analyzing legacy transmission due to its dramatic political and institutional transformations in recent history. From the late 19th century through 1977, the country was marked by a series of regime changes, a civil war, a 40-year dictatorship, and a democratic transition. These disruptions make Spain a particularly informative setting for analyzing whether and under what conditions legacies persist.

This article thus makes two contributions to the burgeoning literature on historical legacies and persistence. First, I investigate how early exposure to organized labor, rather than to political regimes and institutions or episodes of violence, relates to local political behavior several decades later. While seminal research has investigated the impact of early labor mobilization on interwar political regimes (Luebbert, 1987), the evolution of party systems (Bartolini and Mair, 1990; Lipset and Rokkan, 1967), and modern welfare states (Esping-Andersen, 1990), I document a long-term relationship with local electoral behavior. This, in turn, helps account for the long-standing electoral strength of left-wing parties in some regions and localities (for the Spanish case, see Domènech and Sánchez-Cuenca 2022; Rodon 2024; Villamil 2021), even long after the social and political decline of the labor movement. Because leftist victories tend to cluster in urban and industrial areas (Bartolini, 2000; Rodden, 2019), this work might also shed light on why left-wing parties secure comparatively high electoral support beyond contemporary urban and industrial centers.

Second, by looking at local demographic trajectories, this work analyzes whether the imprint of legacies varies across different local socioeconomic contexts. Although prior research has recognized that context matters for transmission (Charnysh and Peisakhin, 2022), its role in conditioning the relative strength of historical legacies has not been systematically examined. In this

way, my findings speak to recent work on the non-monotonic effect of historical legacies (Dinas and Palaiologou, 2024; Fouka and Voth, 2023; Ochsner and Roesel, 2024) and move beyond the literature's current emphasis on 'successful' historical legacies to investigate why some historical legacies appear more durable than others.

Early labor mobilization

Emerging in the late 19th and early 20th centuries as a response to the grievances arising from industrialization, the labor movement left lasting legacies. Organized labor not only fought to improve working conditions but also played a decisive role in the socialization, mobilization, and enfranchisement of the working classes. The creation of dense networks of sociability (e.g., trade unions, cooperatives, workers' clubs, etc.) was central to this process, as they provided members with a collective identity and channels for mobilization (Bartolini, 2000).[1] In the face of early political repression, the labor movement created self-contained social environments to isolate its members from outside influences, particularly the state and religious institutions (Bartolini, 2000; Lipset and Rokkan, 1967). This fostered a strong sense of solidarity and shared attitudes among its members (Bartolini, 2000: 22).

The political left tended to rely on these networks to build their party structures and mobilize its 'natural' electorate -the urban and industrial working classes (Amat et al., 2020; Boix and Magyar, 2023; Lipset and Rokkan, 1967; Przeworski and Sprague, 1986). Though mobilization in the economic sphere preceded overt political mobilization, the founders of national trade unions and social democratic parties were frequently the same individuals (Boix, 2012; Hedström et al., 2000). Political agitators also used existing associations to recruit new people (Bartolini, 2000). Across Western Europe, this organizational strength propelled the rise of leftist electoral mobilization and ensured its long-term stability (Bartolini and Mair, 1990).

Quantitative analyses investigating the early 20th century have consistently confirmed this

[1]These often hinged upon both pre-existing political traditions (Tilly, 2017; Thompson, 1971) and informal networks like craft groups or neighborhood affinities (Gould, 1993).

relationship. Using highly disaggregated data from Swedish local elections held between 1910 and 1918, Boix and Magyar (2023) confirm that trade unions and other civic associations were key to the electoral success of the Swedish Social Democratic Workers' Party. Similarly, Mor and Boix (2024) demonstrate that socialist parties nominated worker candidates in contexts of high unionization in England, Wales, Germany, and Norway before 1945. In pre-Civil War Spain, provinces with higher levels of labor associational density had higher vote shares for leftist federal republicans (Arnabat Mata, 2019: 383), whereas the socialist party was able to advance electorally only in places where its own trade union -the UGT- was active (Boix, 2012; Linz, 1967).

I argue that such dynamics also produced enduring political legacies. Past experiences, collective identities, and political memories can serve as templates for the present and tools for socialization, fostering mobilization and group identity (Anderson, 1991; Halbwachs, 1992; Putnam, 1994; Ranger and Hobsbawm, 1984). They might also influence how people interpret local conditions and the broader political landscape, increasing the likelihood of certain forms of collective action (Ternullo, 2024). In Spain and elsewhere, left-wing parties capitalized on the socialization and mobilization of the working classes by early organized labor. I further contend that these processes could leave lasting legacies, whose strength may vary with subsequent transformations of the local context.

Historical legacies and transmission

The literature on historical legacies analyzes the historical roots of current political behavior (e.g., Acharya et al., 2016b; Balcells, 2012; Charnysh and Peisakhin, 2022; Homola et al., 2020; Lupu and Peisakhin, 2017). Given the long intervals that often separate treatment and outcome variables, mechanisms of transmission are essential (Wittenberg, 2015). They are especially relevant insofar as people and their descendants can move from exposed to unexposed areas -and vice versa-, potentially leading to post-treatment sorting bias (Marbach, 2024). In short, the persistence of past experiences is inevitably affected by later developments or "layers of history" (Wimmer, 2023),

which might not only condition the outcome but also the process of transmission.

However, transmission mechanisms often remain under-specified. Most studies invoke intergenerational transmission through families, often without supporting empirical evidence (e.g., Guiso et al. 2016; Putnam 1994; Rozenas et al. 2017). In some cases, notions like 'path dependence' or 'outcome dependence' can suffice to explain transmission, but only when they are precisely defined and supported by historical evidence (Cirone and Pepinsky, 2022: 245). Moreover, most studies assume an average impact across units, neglecting the role of the local social context (Villamil, 2021). This is particularly striking given that legacies are documented even amid profound political upheavals and socioeconomic transformations.

Only a handful of studies examine contextual factors. Some studies analyze the importance of local networks and organizations, such as local Catholic churches in communist Hungary (Wittenberg, 2006) or underground left-leaning groups during Francoist Spain (Villamil, 2021). Others focus on long-term socioeconomic and demographic dynamics: higher levels of immigration and economic growth have been linked to lower persistence of cultural attitudes (Voigtländer and Voth, 2012), whereas ethnically similar communities appear to preserve political identities across generations (Charnysh and Peisakhin, 2022). These works implicitly presume that "major demographic disturbances or population movements weaken the transmission of historically rooted behavioral norms" (Charnysh and Peisakhin, 2022: 5) and that "local persistence partly reflects a lack of mobility" (Voigtländer and Voth, 2012: 1341).

Altogether, these studies suggest that local socioeconomic and demographic trajectories may affect the conditions under which historical transmission takes place. Nonetheless, research on this topic has not systematically explored how these local-level, long-term trajectories condition the relative weight of historical legacies. To address this gap, I examine whether the persistence of legacies varies across different local trajectories.

When do legacies matter?

From an intuitive theoretical perspective, historical legacies may persist more strongly in contexts where change and mobility over time are less prevalent. For instance, Giuliano and Nunn (2021) hypothesize that climatic stability is associated with greater persistence of cultural traits because established practices are less likely to be refined. In a methodological contribution to legacy studies, Marbach (2024) notes that migration between treatment and outcome may obscure and bias long-term findings. Classical sociology also emphasized the stability of the local context as key to historical transmission by observing that, contrary to what occurs "[i]n towns of the provinces which have been sheltered from the great currents of economic life" (...), "in large modern cities, (...), it is increasingly difficult for 'society' to retain in its memory so many familial lines" (Halbwachs, 1992: 143). What all these works share is the assumption that stable local contexts may facilitate historical transmission.

Beyond geographical and climatic characteristics, a pivotal factor shaping such stability is socioeconomic development. Nonetheless, the literature on historical legacies and transmission has addressed its role only tangentially (Charnysh and Peisakhin, 2022; Voigtländer and Voth, 2012). This matters because socioeconomic development may reshape the settings in which legacies operate, potentially altering both their transmission and relevance. For instance, the expansion of service industries may disrupt the occupational structures and workplace networks through which class-based identities were traditionally reproduced.

I therefore expect historical legacies to be less strongly associated with later political behavior where local communities have gone through greater socioeconomic transformation. Migration may alter not only the composition of local communities, but also the networks and ties through which shared norms and attitudes are transmitted. This intuition resonates with a classical sociological tradition associated with the work of Tönnies, Durkheim, and Simmel, who linked modernization and urbanization to the erosion of stable local social environments and solidarity rooted in close social ties (see also Halbwachs 1992).[2] In dynamic environments such as large cities and metropolitan

[2] An overview of this idea can be found in Bruhn (2011).

areas, exposure to new influences may change ingrained practices and norms. By contrast, where local communities have undergone fewer transformations, networks and socialization processes may remain more stable, allowing historical legacies to retain greater relevance.

This framework is particularly relevant to labor legacies. Left-wing parties tend to achieve greater electoral success in urban environments (Bartolini, 2000; Rodden, 2019), as well as among working-class constituencies (Arndt and Rennwald, 2016; Rennwald and Pontusson, 2021). In this way, later transformations and contemporary conditions may generate bases of left-wing mobilization that are less closely connected to local labor traditions.

For instance, the rapid expansion of the Madrid metropolitan area during the 1960s and 1970s was accompanied by poorly planned urban development and inadequate public services and infrastructure. These problems provided new grounds for collective mobilization -and potentially for left-wing support- around contemporary local grievances.[3] Such developments may draw on inherited traditions, including those brought by newcomers (see, for instance, Domènech 2012), while also creating sources of left-wing support less dependent on local labor heritage. Conversely, labor legacies may remain more influential where long-term stability has helped preserve the identities and networks associated with early organized labor. This suggests an alternative pathway for leftist mobilization grounded more strongly in historical continuity than in contemporary social and economic conditions.

Historical legacies do not operate in isolation but continually interact with subsequent historical developments. Their relevance may therefore depend on the extent to which later transformations reshape the local context and provide new bases for mobilization. This theoretical argument is summarized in Figure 1 and leads to two hypotheses concerning the long-term association between early labor mobilization and 1977 left-wing support and its variation across subsequent local trajectories.

H1: Municipalities with higher levels of early 20th-century labor mobilization show higher levels of support for left-wing parties in the long run.

[3]For a detailed account of neighborhood mobilization around housing and public services during the meteoric growth of the Spanish metropolitan areas, see, for instance, Bordetas Jiménez (2012) and Radcliff (2011).

H2: The association between early organized labor and left-wing support is stronger in municipalities with lower levels of long-term transformation.

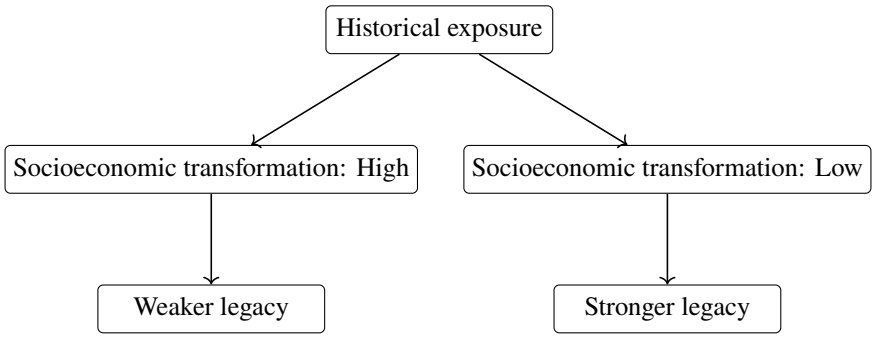


Figure 1. Historical legacies under alternative socioeconomic trajectories.

Notes: Historical exposure may arise from discrete events, enduring institutions, or gradual processes such as the development of organized labor. The diagram summarizes the expectation that the association between historical exposure and later political outcomes is weaker where subsequent socioeconomic transformation is greater.

Historical background

Organized labor socialized the working classes and created dense networks of organizations, laying the foundations for long-term electoral legacies. Yet the period between the initial waves of labor mobilization and the 1977 elections was marked by sweeping political and economic disruptions, potentially attenuating their long-term relevance. As in other Western European countries, the development of the labor movement is crucial for understanding the evolution of the party system and cleavage structure (Bartolini and Mair, 1990; Lipset and Rokkan, 1967).

Over the course of the nineteenth and the first third of the twentieth centuries, the uneven spread of industrialization resulted in sharp social tensions and regional imbalances, with Catalonia, Madrid, and the Basque Country leading this process (Maluquer, 2014). In the countryside, poverty and dependence on large landowners were pervasive, especially in the southern regions of the Peninsula (Carr, 2009; Tusell, 2012). Like their comrades in France and Italy, the Spanish working classes, ideologically imbued with Marxism and revolutionary anarcho-syndicalism (Bartolini,

2000: 78), started to organize and pose serious challenges to political and social stability.

The 1887 Law of Associations led to the proliferation of unions, cooperatives, and workers' clubs, fueling the political awareness and mobilization of peasants and industrial workers (Amat et al., 2020; Arnabat Mata, 2019). These organizations often offered a range of services such as financial aid, mutual assistance, and cultural and leisure activities.[4] Previously marginalized social groups developed shared values and durable ties, conferring upon them a collective identity to pursue common objectives. The founding of the Spanish Socialist Party in 1879, its affiliated union UGT in 1888, and the anarcho-syndicalist National Confederation of Labor (CNT in Spanish) in 1910 exemplify this foundational period.

The first major rupture came with Primo de Rivera's coup and subsequent dictatorship (1923-1930). His regime restricted the right of association and outlawed most labor organizations, except for the UGT, which the regime sought to co-opt into the new corporatist state (Tusell, 2012: 458). Following the first free municipal elections held by a transitional government in April 1931, the fall of the monarchy led to the establishment of the Second Republic (1931-1936), a period characterized by ambitious reforms, widespread political mobilization, and escalating political violence.

A second, more destructive disruption came after General Francisco Franco led a military coup that quickly spiraled into a full-scale civil war in July 1936. This brought an end to the Second Republic and ushered in an authoritarian regime that would last until 1977, which persecuted and dismantled independent labor organizations and replaced them with the state-controlled *Sindicato Vertical*. The regime sought to overturn the sociopolitical dynamics and informal networks that had sustained labor mobilization over the previous decades, interrupting the legal and institutional continuity of independent labor organizations (Prieto, 1993). Since underground union activity persisted during the Francoist regime (see, for instance, Gago Vaquero, 2014; Vega, 2013), the long-run association examined in this article is compatible with overlapping channels of transmission through families, communities, and informal networks.

As in much of Western Europe, the Spanish labor movement was central to the sociopolitical

[4]One example of the multi-functionality of local organizations in a Catalan village is described in Gavalda (1989). See also Guereña (2018).

incorporation of the working classes, leaving a lasting influence on the Spanish political system.

Data and variables

To evaluate the long-term relationship between historical labor mobilization, socioeconomic transformation, and left-wing voting, I analyze more than 7,600 municipalities in the baseline empirical specifications, covering over 94 per cent of municipalities with available electoral records in 1977.[5] Since Spain experienced rapid modernization and several regime changes during this period, this analysis constitutes a particularly informative case to explore long-term political legacies.

The main dependent variable is support for left-wing political parties in the first democratic elections after Franco's 40-year authoritarian rule, held in 1977. It is measured as the vote share -ranging from 0 to 1- received by all nationalist and non-nationalist left-wing parties.[6] Figure 2 maps the geographical distribution of left-wing support in 1977. Left-wing strongholds are predominantly concentrated in the southern half of the Peninsula, but important clusters also exist along the eastern coast, in the northern regions of Asturias and Aragon, and in Madrid.

[5]To deal with territorial changes between 1920 and 1977, such as mergers, separations, or boundary adjustments, I rely on the R package *muniSpain* developed by Fran Villamil (for an application, see Villamil, 2021), which combines municipality codes from the *Instituto Nacional de Estadística* with the list of municipal changes as compiled and corrected by Goerlich and Ruiz (2018).

[6]Table B3 includes a list of all the political parties included in the analyses.

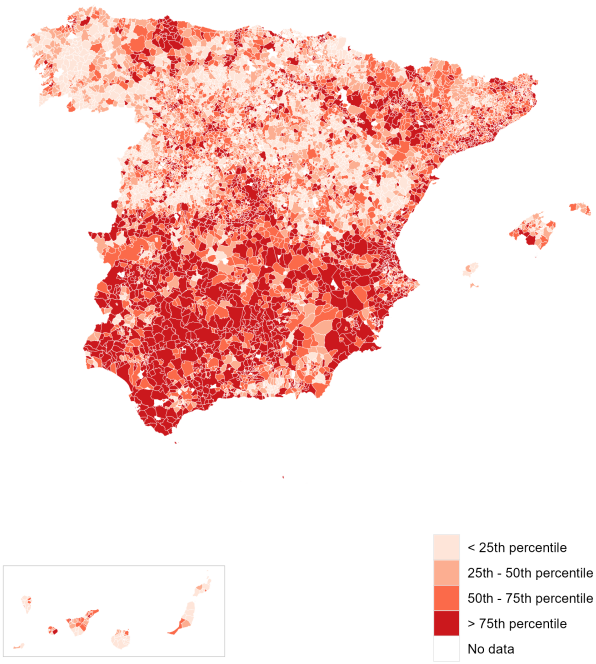


Figure 2. Spatial distribution of left-wing support in 1977.

The 1887 Law of Associations established the first general legal framework for the recognition of associations and serves as the starting point for the period examined here. I measure early labor mobilization as the logged number of members per 1,000 inhabitants belonging to labor organizations created between 1887 and 1920. This membership-based indicator, drawn from the *Instituto de Reformas Sociales*, captures the depth of engagement in organized labor more directly than the conventional measure of organizations per capita.[7] As robustness checks, I replicate all the analyses using labor organizational density in 1916, calculated as the logged number of labor organizations per 1,000 inhabitants in 1916.[8] Figures 3 and B1 map these two variables, with notable concentrations along the coast, in the northwest, and across the southern half of the Peninsula. Although the censuses include only formally constituted organizations, they remain the standard source for studying associational life in 20th-century Spain (see Arnabat Mata, 2019;

[7]The Social Reforms Institute was established in 1903 and played a pivotal role in the development of the modern social security system (Tusell, 2012). See Appendix A for more details.

[8]Both indicators are transformed as $\ln(1+x)$, using municipal population in 1920 as the denominator.

Guereña, 2018; Mayayo, 1995; Rubio, 1988).[9]

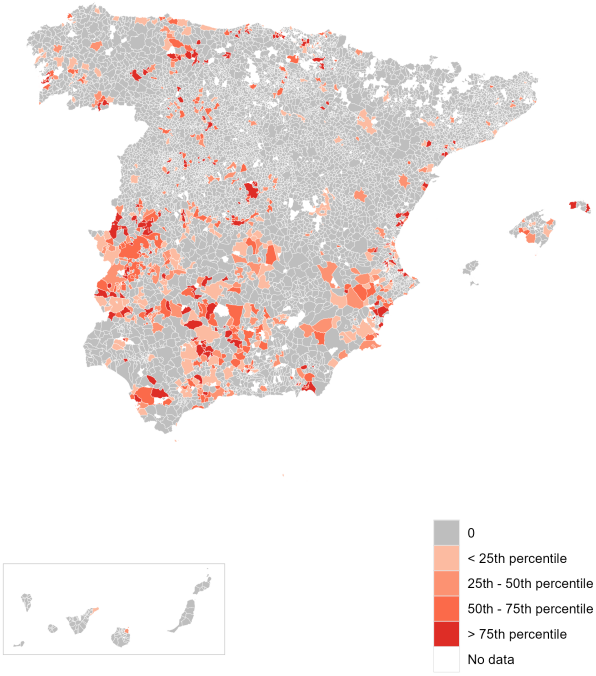


Figure 3. Members of labor organizations per capita in 1920.

Historically, industrialization and urbanization spurred labor mobilization by concentrating working-class populations, increasing the division of labor, and expanding education (Bartolini, 2000: 32-33). To proxy these structural characteristics, I use illiteracy rates, the presence of train stations, and logged population in 1900.[10] To account for the agrarian structure of a municipality, I include the share of cultivated land in 1900. Moreover, because earlier labor mobilization may have shaped subsequent associational development and leftist vote, I also control for the presence of a local branch of the International Workingmen's Association in 1872 using data from Termes (2000).

Later socioeconomic conditions are captured by logged population in 1975, the share of es-

[9]Some organizations may appear in both censuses. However, because the two indicators capture different dimensions of labor mobilization and are employed separately throughout the analyses, this overlap is not empirically problematic.

[10]Results are robust when employing 1860, 1887, and 1910 measures. I use 1900 as the baseline because, as shown in Figure B2, the creation of labor organizations skyrocketed in the early years of the 20th century.

tablishments in extractive industries and manufacturing in 1970, and logged population change between 1920 and 1975. In an additional exercise, I employ logged municipal budget per capita in 1958 to capture local fiscal capacity and broader economic conditions.[11] Finally, several geographical characteristics are included: elevation, ruggedness, and logged geodesic distance to the coast and to the provincial capital. These time-invariant attributes might have influenced both early labor mobilization and support for leftist parties. A comprehensive description of measurement, data sources, and descriptive statistics is provided in Table B1 and Table B2.

Taken together, the inclusion of these indicators allows me to evaluate the electoral legacies of early organized labor, as well as whether their imprint differs across different local socioeconomic trajectories.

Empirical strategy

I first run linear regressions with province-level fixed effects to analyze the long-term relationship between early labor mobilization and leftist vote in 1977.[12] To improve covariate balance between municipalities with and without historical labor mobilization, I also use matching procedures. Lastly, I assess the sensitivity of the findings to alternative specifications, consider alternative explanations, and account for spatial autocorrelation.

To examine the second hypothesis concerning uneven persistence, I interact labor mobilization measures with indicators of subsequent local transformation. In the absence of fine-grained data on municipal socioeconomic and migration trajectories, I use logged population change between 1920 and 1975 and between 1950 and 1975. Especially during the 1960s and early 1970s, a new phase of industrialization was accompanied by substantial population movements from rural areas to large cities (Goerlich Gisbert et al., 2015: 162; Silvestre Rodríguez, 2010: 124). This

[11] Information on municipal budgets was not digitized or preserved uniformly across Spain, implying that these data are available only for a subset of provinces for years around 1958.

[12] Geographical fixed effects are standard in persistence research when pre-treatment borders are exogenous (Homola et al., 2024; Pepinsky et al., 2024). I then use provinces, stable since 1833, rather than autonomous communities, established by the 1978 Spanish Constitution.

connection motivates the use of population change – particularly between 1950 and 1975 – as an indirect indicator of local socioeconomic transformation. Still, these measures reflect population growth or decline, but do not directly capture population turnover, changes in occupational structure, or the disruption of inherited community networks. Consequently, I can examine whether labor legacies differ across demographic trajectories without distinguishing the particular transmission processes involved. Complementary analyses examine variation across local fiscal capacity, providing additional evidence of heterogeneity across later socioeconomic conditions.

Baseline findings

Baseline results for the relationship between labor organizations and 1977 left-wing electoral support are presented in Table 1. To evaluate coefficient stability, I report sequential covariate inclusion: model (1) starts only with labor mobilization and province fixed effects, model (2) adds geographical controls, model (3) includes historical pre-treatment covariates, and model (4) further incorporates contemporary controls. The positive association between pre-1920 local labor organizations and leftist voting holds across the four models, even after controlling for geographical, historical, and contemporary factors. A similar association emerges when using labor organizational density in 1916 (Table C1 in the Appendix). Consistent with these baseline findings, early organized labor is negatively correlated with right-wing voting in 1977 (Table C2 in the Appendix).

Substantively, moving from no members to the 95th percentile of membership density is associated with an increase in left-wing support of about 2.7 percentage points, representing roughly 12 per cent of the mean left vote share. Similarly, moving from no labor organizations to the 95th percentile in organizational density is associated with an increase of about 2.1 percentage points, equivalent to approximately 9 per cent of the mean left vote share.[13]

Controls behave as expected: population size is positively correlated with left-wing support in the 1977 elections, while the opposite is true for right-wing voting (also shown in Table C2 in the Appendix). These findings are robust to alternative specifications of the key independent variables

[13] Since 90 per cent of municipalities report no members of labor organizations, I employ the 95th percentile.

and to accounting for the impact of wartime violence (see Tables C3 and C4 in the Appendix).

Table 1. Early labor mobilization and support for the Left in 1977

	(1)	(2)	(3)	(4)
Members of labor orgs. per capita (log)	0.020***	0.016***	0.008***	0.007***
	(0.002)	(0.002)	(0.002)	(0.002)
Province FE	✓	✓	✓	✓
Geographical controls		✓	✓	✓
Historical controls			✓	✓
Contemporary controls				✓
Mean DV	0.22	0.22	0.22	0.22
N	7,777	7,720	7,607	7,562
Within R^2	0.03	0.09	0.14	0.20

Notes: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Province fixed-effects regressions with standard errors clustered at the province level. Geographical, historical, and contemporary controls not shown.

Robustness checks

To assess the robustness of the baseline association, I carry out a series of analyses guided by three main concerns: pre-existing differences between municipalities, demographic changes between 1920 and the 1977 elections, and spatial dependence.

First, municipalities with a labor heritage were, on average, larger, more likely to have railway stations in 1900, and more likely to have hosted a local branch of the International Workingmen's Association in 1872. They also differed in literacy and geographical characteristics (Figure C1 in the Appendix). To improve comparability on observed pre-treatment characteristics, I implement Coarsened Exact Matching (CEM) and subsequently estimate regressions using CEM weights and including matched-stratum and province fixed effects.[14]

Table 2 displays the results for the CEM samples. Columns 1 and 2 include only matched-stratum and province FE, columns 3 and 4 add geographical and historical controls, and columns

[14]See Figure C1 in the Appendix for covariate balance. As a robustness check, I also implement one-to-one nearest-neighbor propensity score matching without replacement, using a caliper of 0.1 (see Figure C2 and Table C6), and results remain substantively similar.

5 and 6 additionally include contemporary controls. Both indicators of early labor mobilization remain positive and statistically significant across specifications, with municipalities with early organized labor having left-wing vote shares approximately 2.4-3.8 percentage points higher than their matched counterparts. In the full models, estimated differences are 2.4 percentage points for the presence of labor organizations in 1916 and 2.7 percentage points for recorded labor membership in 1920.

Table 2. Early labor mobilization and support for the Left in 1977: Coarsened Exact Matching

	(1)	(2)	(3)	(4)	(5)	(6)
Labor organization 1916	0.035***		0.031***		0.024***	
	(0.006)		(0.006)		(0.005)	
Members of labor organization 1920		0.038***		0.034***		0.027***
		(0.008)		(0.007)		(0.007)
Matched-stratum FE	✓	✓	✓	✓	✓	✓
Province FE	✓	✓	✓	✓	✓	✓
Geographical controls			✓	✓	✓	✓
Historical controls			✓	✓	✓	✓
Contemporary controls					✓	✓
Mean DV	0.22	0.22	0.22	0.22	0.22	0.22
N	5,744	4,707	5,744	4,707	5,744	4,707
Within R^2	0.02	0.01	0.04	0.05	0.10	0.09

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The dependent variable is the share of votes for the Left in 1977. All models are estimated on samples obtained through Coarsened Exact Matching, using matching weights and including matched-stratum and province fixed effects. Matching uses geographical and historical covariates only. Control coefficients are not shown. Standard errors clustered by province are reported in parentheses.

Along these lines, municipalities with stronger labor mobilization between 1887 and 1920 might simply have possessed denser pre-existing cultures of sociability. To assess this possibility, I incorporate two additional variables into the main models: the presence of patriotic liberal clubs during the 1820-1823 Liberal Triennium, and the presence of venues of informal sociability (e.g., theaters, circuses, bullrings, etc.) in 1862. Modeled after the political clubs of the French Revolution, patriotic clubs functioned as open forums for political discussions. Their primary objective was to consolidate the liberal regime by exercising the rights of assembly and association,

thereby conditioning the early stages of labor mobilization in Spain (Gil Novales, 1975).[15] Similarly, informal sociability spaces, such as cafes, theaters, and circuses, may constitute an additional historical source of political mobilization, as they were key in spreading political ideas throughout the 19th century (Ridgwell, 2025; Scott, 1998). Results, presented in Table C5 in the Appendix, show that the inclusion of these two measures of alternative pre-labor sociability does not alter previous findings.

I additionally conduct a series of regression analyses for both left-wing and right-wing parties, incorporating two measures of employers' associational activity.[16] Though employers' organizations were notably heterogeneous due to historical regional variation in land ownership structures (Beltrán Tapia et al., 2021), they were more prevalent in areas where right-wing parties and the Catholic Church were organizationally stronger (Aguilar et al., 2025). Figure C6 in the Appendix shows that employers' organizations behave as expected: they are positively associated with right-wing voting and negatively correlated with left-wing voting.

Second, recent scholarship argues that apparent long-term legacies may simply result from post-treatment demographic replacement rather than genuine historical persistence (Marbach, 2024, 2025). In the absence of individual migration histories and intergenerational data linking voters to historical exposure, I assess whether the baseline findings are sensitive to the inclusion of municipalities with particular demographic characteristics. I exclude municipalities with fewer than 1,000 inhabitants in 1977 and all provincial capitals (Table C7 in the Appendix), following evidence of their disproportionate exposure to internal migration between 1950 and 1980 (Goerlich Gisbert et al., 2015: 173-81). I also retain municipalities within the 5th-95th and 10th-90th percentiles of population change between 1920 and 1975 (Figure C3 in the Appendix.). The estimated association becomes slightly stronger in these trimmed samples, suggesting that the baseline findings are not driven by municipalities with extreme demographic changes.[17]

Third, spatial dependence constitutes another frequent concern in legacy studies (Abad and

[15]For instance, in September 1840, Barcelona's mutual aid society for weavers formally joined the city's patriotic society (Gil Novales, 1975: 8).

[16]Data come from the same censuses of associations compiled by the *Instituto de Reformas Sociales*.

[17]Nevertheless, these tests cannot rule out post-treatment sorting.

Maurer, 2021; Cirone and Pepinsky, 2022). In the context of this article, such dependence may arise as individuals and organizations often engaged in activities and actions beyond their own municipalities (Arnabat Mata, 2019). Workplaces and community networks also connected individuals and facilitated the diffusion of labor traditions and collective identities across neighboring municipalities and beyond (Vega, 2013; Ysàs, 2008). These connections may have contributed to the long-term continuity of local political cultures, consistent with the persistence of left-wing voting documented in Spain (Domènech and Sánchez-Cuenca, 2022; Maravall, 1982; Villamil, 2021).

I address this concern through two complementary exercises. First, following Kelly (2019), I use Conley standard errors allowing for spatial correlation in residuals at distance cutoffs of 25, 50, and 100 km. As seen in Table C8 in the Appendix, both indicators of early labor mobilization remain statistically significant across all cutoffs. Second, I add three controls measuring average labor mobilization in municipalities located within 0-10, 10-25, and 25-50 km.[18] Figure C4 shows that the coefficients on labor mobilization decline but remain positive with Conley standard errors at 50 km. Labor mobilization in nearby municipalities therefore does not fully account for the long-term association observed in the main analysis.

Intermediate evidence

Another recurrent criticism of legacy studies is the absence of intermediate evidence (Abad and Maurer, 2021; Cirone and Pepinsky, 2022). In Spain, this is especially important given the dramatic transformations occurring between 1920 and 1977. Using data from Rodon et al. (2026), I thus analyze the 1936 general elections, held months before the outbreak of the Spanish Civil War amid intense sociopolitical tensions. Figure 4 shows a positive association between early labor membership density and left-wing support, while employer membership density correlates negatively (see Table C9 for full results).[19] Conversely, early labor mobilization is negatively

[18]The averages are calculated separately for membership and organizational density, excluding the municipality itself. The three distance bands are included in the corresponding model.

[19]The parties included in the left-wing electoral bloc are listed in Table B4.

associated with support for the Right. Moreover, these patterns hold when using organizational density measured in 1916 (Figure C5 in the Appendix). Together, these findings document an association between early labor mobilization and electoral patterns as early as the Second Republic.

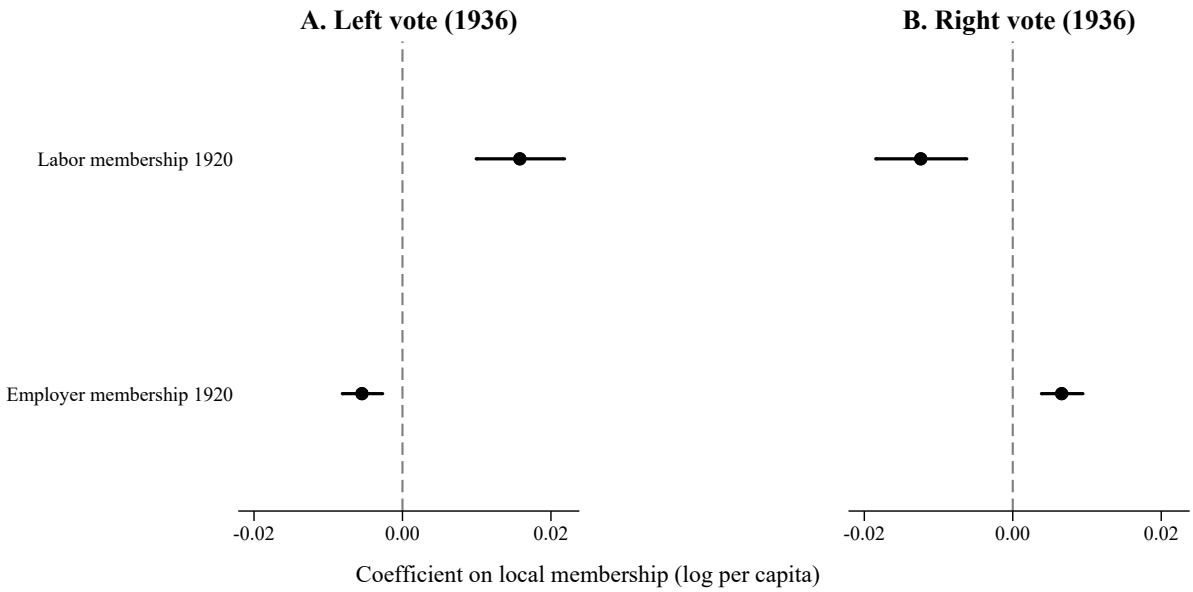


Figure 4. Labor and employer membership density and electoral support in 1936

Building on this intermediate evidence, I follow the sequential g-estimation method proposed by Acharya et al. (2016a) to assess the role of subsequent waves of political mobilization in the long-term association between early labor mobilization and left-wing support in the 1977 elections. Columns 1 and 4 of Table C10 exclude the mediator, columns 2 and 5 include it in an OLS specification, and columns 3 and 6 report the sequential g-estimation.

Panel A includes an indicator of labor mobilization during the Second Republic, measured by logged membership in the main socialist trade union at the time -the UGT. The inclusion of this mediator produces a modest reduction in the coefficients on both measures of early organized labor, which remain statistically significant at the 1% level in the sequential g-estimation models. This suggests that labor mobilization during the Second Republic plays a comparatively limited role in accounting for the long-term association between pre-1920 labor mobilization and 1977 left vote.

Panel B of Table C10 turns to leftist electoral support in 1936, a well-established predictor of

1977 leftist vote (Balcells, 2012; Maravall, 1982; Rodon, 2024). Including this mediator produces a more substantial attenuation, with the coefficient on labor organizations declining from 0.044 to 0.028 and that on the membership-based indicator falling from 0.008 to 0.004. Nevertheless, both remain statistically significant in the sequential g-estimation models. Consistent with the association documented in Table C9, these results suggest that left-wing electoral support in 1936 constitutes an intermediate link, but does not fully account for the association between early labor mobilization and leftist voting in 1977.

How legacies vary

How are labor legacies shaped by subsequent historical developments? I argue that their persistence depends on the long-term socioeconomic trajectories of local communities. In particular, the networks and collective identities forged by early organized labor may weaken in municipalities undergoing greater transformations over time. To examine an observable implication of this argument, I explore whether the relationship between early labor mobilization and 1977 voting behavior varies across municipalities with different trajectories of demographic change.

Table 3 analyzes whether the strength of the relationship between early organized labor and left-wing voting varies with net population change between 1920 and 1975, measured as the log population ratio.[20] While this measure captures demographic expansion or downturn, it does not directly capture changes in occupational structures, group composition, or local networks, potentially obscuring different degrees of change under similar population trajectories.

Column 1 reports the baseline specification, showing that early labor mobilization remains positively and statistically significantly associated with 1977 left-wing support. Column 2 introduces the moderator directly, while column 3 interacts labor mobilization with long-run population change. While the main coefficient remains positive, the interaction term becomes negative and statistically significant, indicating that the association between early organized labor and 1977 left-wing voting weakens as population growth between 1920 and 1975 increases. Column 4 further

[20]Results remain consistent when using different time periods: 1910-1975, 1910-1980, and 1920-1980.

examines whether the interaction is driven solely by municipalities with extreme population trajectories, yielding substantively similar estimates when excluding the top and bottom five percent of net population change.

Table 3. Early labor mobilization and heterogeneous persistence in 1977 left support

	(1)	(2)	(3)	(4)
Members of labor orgs. per capita (log)	0.008***	0.008***	0.009***	0.008***
	(0.002)	(0.002)	(0.002)	(0.002)
Population change, 1920–1975 (log)		0.049***	0.051***	0.055***
		(0.004)	(0.004)	(0.006)
Members × population change			-0.006***	-0.005*
			(0.002)	(0.003)
Geographical controls	✓	✓	✓	✓
Historical controls	✓	✓	✓	✓
Contemporary controls	✓	✓	✓	✓
Province FE	✓	✓	✓	✓
Mean DV	0.22	0.22	0.22	0.22
N	7,562	7,562	7,562	6,825
Within R^2	0.15	0.19	0.19	0.16

Notes: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Province fixed-effects regressions with standard errors clustered at the province level. All specifications include geographical, historical, and contemporary controls. Historical controls include population in 1900; population in 1975 is excluded from all specifications. Column (4) excludes municipalities in the top and bottom 5 percent of population change between 1920 and 1975.

Figure 5 plots this heterogeneity using the methodology proposed by Hainmueller et al. (2019), which relaxes linearity assumptions regarding the relationship between treatment, moderator, and outcome. Following their recommendations, I use three equal-sized bins corresponding to the terciles of the moderator variable (Hainmueller et al., 2019: 170). The resulting estimates show that labor legacies are substantially stronger in municipalities experiencing lower population growth and progressively weaker in municipalities undergoing greater population growth. Notably, the estimated relationship remains positive across most values of the moderator, although its magnitude clearly attenuates as population growth increases. When using labor organizational density instead of labor membership, the interaction coefficients are also negative but are not statistically significant (Table D1 and Figure D1 in the Appendix).

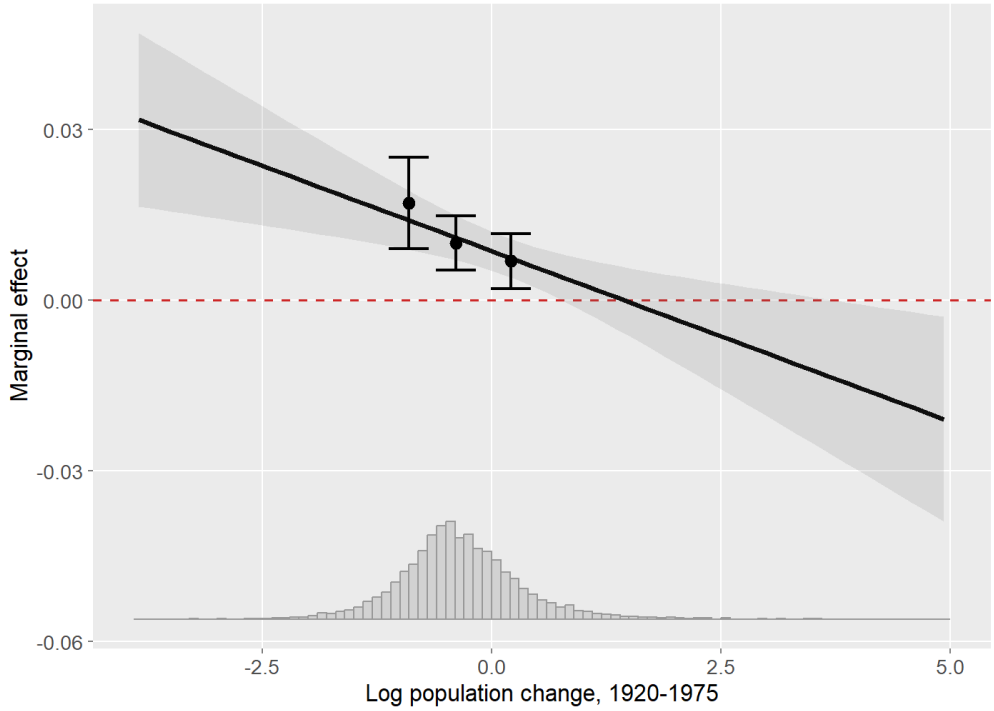


Figure 5. Early labor mobilization and left-wing support in 1977 conditional on population change between 1920 and 1975. Point estimates with 95% confidence intervals. Based on the estimates reported in Table 3 and the binning estimator proposed by Hainmueller et al. (2019).

To focus on the decades of intense internal migration preceding the democratic transition, I repeat the analysis using logged population change between 1950 and 1975. This interval includes the rural exodus and accelerated population concentration of the 1960s and early 1970s, alongside pronounced internal migration toward industrial centers (Goerlich Gisbert et al., 2015: 112). By doing so, I can explore whether the pattern also holds for demographic changes concentrated in the later decades of the dictatorship, which may have reshaped local communities and created new bases for political mobilization.

Results are presented in Figure 6, with the corresponding estimates reported in Table D2 in the Appendix. The pattern is very similar to that obtained using the 1920-1975 period, showing a weaker association in municipalities experiencing greater population growth. This negative interaction also holds when municipalities with extreme demographic changes are excluded (column 4 in Table D2).[21] These findings are consistent with the argument that greater population growth may weaken

[21] For labor organizational density, the interaction is negative but not statistically significant (Table D3 and Figure D2).

the relationship between labor traditions and subsequent electoral behavior, although they cannot distinguish the specific channels underlying this pattern.

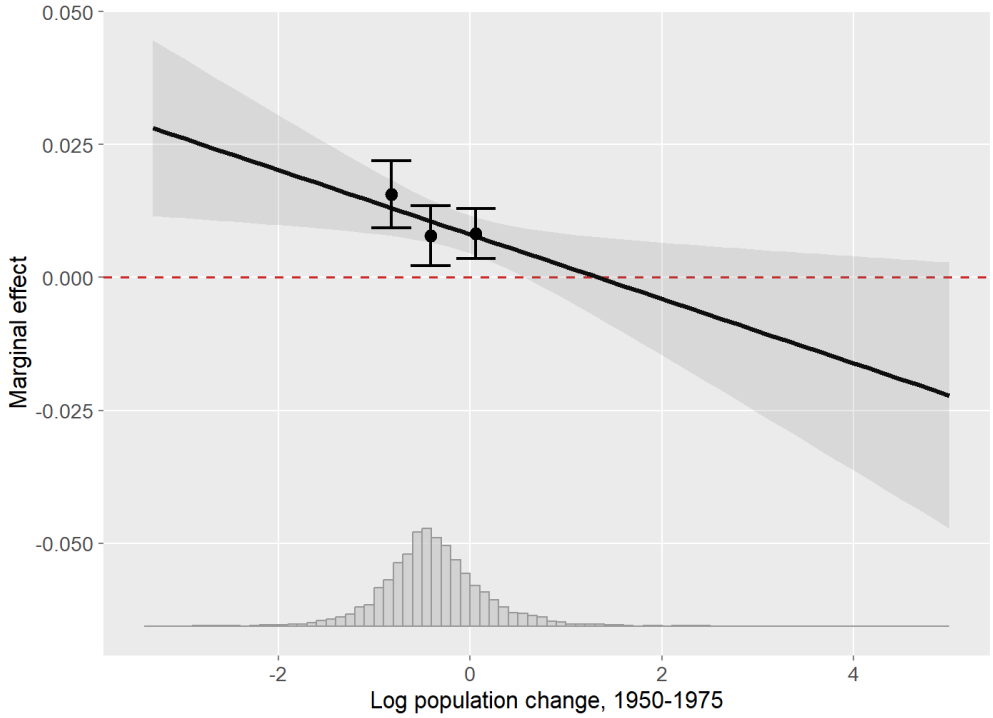


Figure 6. Early labor mobilization and left-wing support in 1977 conditional on population change between 1950 and 1975. Point estimates with 95% confidence intervals. Based on the estimates reported in Table D2 and the binning estimator proposed by Hainmueller et al. (2019).

In the Appendix, I extend this analysis in two ways. First, I examine whether similar patterns emerge when analyzing the relationship between early labor mobilization and 1977 right-wing voting (Figures D3 and D4 in the Appendix). In this case, the negative association is closer to zero in municipalities with greater population growth. Second, I examine whether the historical association also varies across levels of local fiscal capacity during the decades separating early labor mobilization from the 1977 founding elections.

To do so, I digitized data from provincial yearbooks published by the Spanish Statistical Office since the late 1950s. They provide extensive information on provinces' territorial, demographic, cultural, and socioeconomic characteristics at the local level, though only for selected years and provinces. As a result, the analysis is restricted to municipalities located in 12 out of Spain's 50

provinces (see Figure D5 in the Appendix). Within this subsample, I use municipal budget per capita in 1958 as a proxy for local fiscal capacity and an indirect indicator of economic conditions.[22]

The estimates point in the same direction as those employing population change: the interaction between early labor membership and municipal budget per capita becomes negative (Table D4 in the Appendix). The visualization of this heterogeneity, presented in Figure D6, similarly shows that the association between early labor mobilization and left-wing support is strongest in municipalities with low-to-intermediate levels of municipal budget per capita, whereas the relationship attenuates toward zero at higher levels of fiscal capacity. A clearer pattern emerges when I use labor organizational density, with smaller estimates at higher levels of municipal fiscal resources (see Table D5 and Figure D7 in the Appendix). The findings thus provide complementary evidence of heterogeneity across levels of local fiscal capacity.

Taken together, these findings indicate that the association between early organized labor and left-wing support is weaker in municipalities with greater population growth and higher fiscal capacity. These patterns are consistent with the broader argument that the electoral relevance of labor legacies depends on subsequent local developments. However, the aggregate evidence cannot distinguish between changes in population composition, the weakening of locally rooted identities, or the emergence of new bases of leftist mobilization.

The transmission of labor legacies: historical accounts

The empirical evidence documents a robust long-term relationship between early labor mobilization and left-wing voting in 1977, with stronger associations in municipalities experiencing less population growth. In this section I draw on historical accounts and examples of local commemorative practices to illustrate how this heritage could be preserved and transmitted through families, neighborhoods, workplaces, and collective memory.

Despite the dismantling of legally recognized independent labor organizations and systematic

[22]Municipal budgets may reflect political influences as well as local economic conditions. Although existing scholarship emphasizes that Franco's regime severely constrained local fiscal autonomy through centrally imposed budgets rather than through targeted political rewards or punishments (Cobo and López 2005: 5; González Madrid 2010: 47), these constraints cannot rule out political manipulation of municipal resources.

repression, labor identities could survive through informal relationships and practices, including family transmission, class-based solidarity, and neighborhood networks. Crucially, these channels were contingent on broader contextual conditions (Pérez, 2001: 188-191; Vega, 2008: 192). In places like the metropolitan areas of Madrid, Barcelona, or Bilbao, historically rooted political orientations were reworked by large-scale migration and social heterogeneity. Yet, especially where migrants from similar geographical backgrounds settled together, working-class practical knowledge and political traditions became embedded within broader and more heterogeneous forms of left-wing mobilization (Domènech, 2012). In this way, migration could reshape labor traditions while providing favorable settings for their reproduction.

This labor heritage also survived in communities across Asturias, the Basque Country, and southern Andalusia, where strong pre-Civil War labor traditions coincided with relatively stable local contexts. In these settings, families were embedded within communities sharing occupational and political experiences, thereby reinforcing the transmission of leftist political orientations.[23] In the mining valleys of Asturias, Vega (2014) finds that prewar class-based memories and identities were transmitted through shared values and practices that required little formal organization, with families and informal networks among co-workers and neighbors as central venues of memory-sharing and mutual support. In Bilbao's industrial towns, Pérez (2005) notes that multi-generational socialist families played a key role in preserving ideological continuity, whereas factories and bars facilitated the interaction between older militants and younger leaders.

The Nalon Valley in Asturias provides an illustrative case of this labor heritage and its subsequent public expression. Beginning in the late 18th century, the rise of the steel and coal mining industries over the following decades engendered a working class that later embraced socialist and anarcho-syndicalist ideologies (Shubert, 1987: 108; Vega, 2014: 228), playing a central role during the 1934 October Revolution (Shubert, 1987: 5). Despite harsh Francoist repression and a 97 per cent decline in coal employment since 1990 (MITyC, 2020), leftist electoral support across the five valley municipalities averaged 46.35% between 1977 and 2019, compared with 36.73% nationally.

[23]This resonates with work by Charnysh and Peisakhin (2022), who demonstrate that political identities are most likely to persist when families are surrounded by like-minded communities.

Notably, even in the context of a Just Transition Agreement (JTA), mining communities continued to support the Spanish Socialist Party in the 2019 general elections (Bolet et al., 2024).[24]

Later commemorative practices further illustrate the public recognition and institutionalization of this memory after the democratic transition. In the Nalon Valley alone, three museums are devoted to interpreting different aspects of its industrial history: the Samuño Valley Mining Ecomuseum, located in the parish of Ciaño within the municipality of Langreo; the Steelworks Museum (MUSI), situated in La Felguera; and the Mining Museum (MUMI), located in San Martín del Rey Aurelio. Their collections and exhibits offer visitors insights into the environment that shaped local occupational identities. Consistent with historical evidence documenting their key role in fostering protest (Vega, 2014: 234), tours at both the Mining Museum and the Ecomuseum include visits to the bath houses, where workers not only prepared for their shifts but also coordinated collective action. Through school programs and guided visits, these institutions facilitate first-hand knowledge of local history and its transmission to subsequent generations.

Local monuments serve as another channel through which collective memory is publicly expressed (Ochsner and Roesel, 2024). In Langreo, a monument with a commemorative plaque dedicated to mining workers stands prominently in a public park (Figure E1 in the Appendix). In nearby Mieres, two monuments reinforce this legacy, embedding this mining heritage in everyday life. The first statue, the "Monument to the Retired Miner", depicts an older miner handing his lamp to a younger successor, symbolizing intergenerational continuity. The second, the "International Monument to the Miner", erected to commemorate all miners who lost their lives underground, was inaugurated following a mining tragedy in 1995 in the same municipality (Figures E2 and E3, respectively). These monuments thus incorporate the mining past and narratives of continuity into the public space.

Local celebrations also sustain the public visibility of this heritage. Each year on December 4th, the feast day of Santa Barbara, patron saint of miners, the International Monument to the Miner

[24]This contrasts with other former mining regions where coal phase-out has been related to reduced voting intention and political interest in former UK mining communities (Abreu and Jones, 2021), an increased Republican vote in the US (Egli et al., 2022), and declining electoral support for the SPD in Germany (Stutzmann, 2025).

becomes the centerpiece of a gathering organized by a local miners' association, attracting major trade unions and political representatives.[25] In addition to this, the Mine Timbering Competition, held annually since the 1940s in Sama de Langreo and supported by public funding, continues to sustain this legacy (El Comercio, 2024).[26]

These commemorative practices illustrate how labor heritage becomes embedded in local memory and identity. The conversion of former mining sites into museums, the construction of commemorative monuments, and the preservation of annual traditions give past experiences institutional and cultural expression (Halbwachs, 1992). These "sites of memory" (Nora, 1989) not only materialize the past, but may also help reproduce collective identities over time. Far from functioning as a mere repository of history, heritage is a way for communities to assert and articulate their identities and values in the present (Smith, 2006). Taken together, these historical accounts and commemorative practices complement the quantitative evidence by illustrating plausible channels through which labor traditions could survive repression and remain publicly visible beyond the socioeconomic conditions in which they developed.

Conclusions

Organized labor constituted a defining feature of political life throughout much of the 20th century. The long shadow of late-19th and early-20th-century labor mobilization on most Western European political regimes and party systems is well established (Bartolini, 2000; Bartolini and Mair, 1990; Lipset and Rokkan, 1967). This article shows that early labor mobilization is also associated with electoral behavior at the local level in Spain, persisting through profound regime changes and socioeconomic transformations. In municipalities where the labor movement had a foothold in the early 20th century, the political left remained stronger in 1977. Importantly, early labor mobilization

[25] In 2024, the regional socialist president, himself a native of the Nalon Valley, attended and publicly reaffirmed the mining identity of Asturias. See: actualidad.asturias.es/....

[26] Similar practices exist both in Spain (Ahora León, 2025) and internationally, including the Durham Miners' Gala in northeast England (Tomaney, 2020), or the Miners' Parade in Saxony, formally recognized as Germany's intangible cultural heritage (German Commission for UNESCO, 2016).

is negatively associated with right-wing electoral support, and its positive association with left-wing voting remains after accounting for alternative forms of local sociability. Evidence from the 1936 elections additionally documents an intermediate association between early organized labor and support for leftist parties before the dictatorship.

Labor organizations provided settings for working-class mobilization, political socialization, and the transmission of shared identities and values. However, their electoral legacies vary across subsequent local trajectories, with weaker associations in municipalities experiencing greater population growth, both over 1920-1975 and over 1950-1975. Complementary analyses using municipal budget per capita in 1958 to proxy for local fiscal conditions provide additional evidence of heterogeneity. These findings suggest that the strength of historical legacies differs across local contexts. More broadly, this could also help explain why leftist parties in Spain and elsewhere maintain their electoral strength in contexts of socioeconomic stagnation.

The results consequently speak to ongoing debates on persistence. Legacies are neither uniform nor equally persistent, and their political relevance may vary with later developments that can neutralize, preserve, or amplify them. In this way, the article engages with what Abad and Maurer (2021) describe as "anti-persistence" and aligns with recent work highlighting the non-monotone effect of the past (Fouka and Voth, 2023; Dinas and Palaiologou, 2024; Ochsner and Roesel, 2024). This notion extends well beyond the Spanish case by motivating closer attention to the subsequent local trajectories alongside which legacies persist or weaken.

Methodologically, this article combines large-N quantitative analyses with historical accounts of transmission through families, neighborhoods, workplaces, and later commemorative practices. While the aggregate analyses cannot directly test these micro-level transmission mechanisms, these accounts illustrate how they may operate in practice. Together, these analyses connect contextual differences in the strength of electoral legacies with plausible transmission channels. Future work should systematically investigate this interplay, ideally using individual migration histories and intergenerational data to distinguish changes in the composition of local communities from the transmission of identities and the emergence of new bases of political mobilization.

Overall, historical persistence should be understood not as static continuity, but as a dynamic process in which historical factors interact with subsequent transformations to produce different degrees of persistence and change.

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Appendix

A The *Instituto de Reformas Sociales* and its data

In the late nineteenth and early twentieth centuries, initial steps were taken towards creating a statutory body to draft labor legislation and regulate the capital-labor conflict in Spain. First came the Social Reforms Commission, established in 1883 and operating until 1903, when the Social Reforms Institute was founded by Royal Decree. Its aim was to establish a neutral collegiate body to mediate social conflicts between employers and workers. It also undertook the inspection of workplaces and labor relations, where the Social Reform Boards played a crucial role (Marín, 2014; Rubio, 1988).

These Boards were established in 1900 to ensure compliance with emerging social legislation (i.e., concerning child labor and women's employment) and gained significant influence and participation from workers after a 1904 royal order clarified their constitution and norms (Rubio, 1988). They were established in all municipalities with industry or other economic activities involving both employers and workers, and where they were requested by either party (Marín, 2014). The boards comprised employers and worker representatives (usually six each with respective alternates), the local mayor as president, the parish priest, and the municipal doctor.

Eligibility for board membership required registration in any worker or employer society within the board's territorial scope. In areas without these organizations, employers and workers were convened by local authorities to elect the representative members. Elections were often manipulated or fraudulent, leading the disadvantaged party (frequently the workers) to appeal to the respective provincial governments. Common complaints included failure to notify parties in advance, exclusion of particular organizations, or inclusion of inappropriate societies, such as an employer-influenced worker organization (Rubio, 1988). Disagreements over what defined a worker association were frequent, and the 'workerist' thesis eventually prevailed, hence leaving aside organizations (i.e, Catholic circles and mixed societies) whose working-class character was questioned.

Through their participation in these boards, both groups sought to consolidate their hegemony within their respective areas. Elections engaged thousands of individuals, involving assemblies, candidate proposals, and negotiation between associations to secure representation (Marín, 2014). Overall, they were effective to the extent that the most relevant employer and workers organizations were present, signaling their strong grip on the world of labor (Marín, 2014).

The Institute and the local boards were also tasked with the organization and publication of labor and other social statistics: strikes, cost of living, labor market reports, industrial courts' reports, and censuses of organizations. From 1904 to 1920, the Associations section published four statistical compilations on the local presence of organizations: the 1904 Statistics on Savings, Cooperative, and Prevision Institutions, the 1904 workers' association Statistics, the 1916 Census of Professional Associations, and the 1920 Social Electoral List. The last two have been digitized for the first time for this article.

1916 Census of Professional Associations

The 1916 census was published for the renewal of the elective part of the Institute and the Social Reform Boards, capturing the number of registered associations up to June 30, 1916. On this occasion, it did not report the number of members per association and data were collected directly by assistants and statistical delegates of the Institute and the general registers of the provincial governments to comply with the 1887 Law of Associations. The preamble to the census notes that it is possible that many non-professional institutions established under a different regime may have been left out of the census. Nevertheless, according to Arnabat Mata (2019), this seems to be the most comprehensive statistical source of the time, with more than 19,000 registered associations divided into different categories. By formally registering in this census, organizations secured voting rights in the elections for the formation of the Local Boards of Social Reforms. Table A1 shows the broad types of associations whose information was gathered in 1916.

Table A1. Types of organizations (1916)

	Count	%
Workers' societies	7032	36.87
Employers' societies	6583	34.51
Savings, cooperative, and prevision institutions	4759	24.95
Mixed societies	548	2.87
Unclassified	151	0.79
Total	19073	100

Table A2. Types of labor organizations (1916)

	Count	%
Professional trade unions	4743	67.45
Mutual aid societies	960	13.65
Cooperatives	502	7.14
Political societies	351	4.99
Educational and recreational societies	335	4.76
Federations of societies	118	1.68
Savings banks	23	0.33
Total	7032	100

Table A3. Types of employer associations (1916)

	Count	%
Agricultural and rural credit unions	2537	38.54
Other agricultural and livestock societies	1645	24.99
Guilds, industrial and derived societies	1384	21.02
Irrigation communities	497	7.55
Chambers of commerce, industry, and navigation	125	1.90
Agricultural chambers	115	1.75
Mercantile and industrial circles	107	1.63
Farmers' communities	102	1.55
Economic societies of friends of the country	51	0.77
Seamen's councils	20	0.30
Total	6583	100

1920 Social Electoral List

This list records employers' and workers' associations in existence on October 30, 1919 and reports the number of members per association. These entities applied for inclusion to obtain voting rights in the elections for representatives of employers and workers who were to form part of the Institute of Social Reforms. These elections, nevertheless, were not held until 1923. Moreover, the document includes a Regulation of the electoral system for representatives and alternates of the Social Reforms Institute.

Table A4. Associations by type (1920)

	Associations	Members
Employers' entities	2392 (54.05%)	623544 (53.01%)
Workers' entities	2033 (45.94%)	552557 (46.98%)
Total	4425	1176101

Organizations were divided into workers' and employers' entities, each of which was in turn subdivided into the same broad groups: 1) mining, salt mines, quarries, and groundwater, and iron and steel factories and metallurgy; 2) metalworking; 3) textile, clothing, hat-making industries, and luxury industries; 4) transportation industries together with production and transmission of physical forces; 5)construction industries, woodworking, and furniture manufacturing; 6) general agriculture, livestock farming, and forestry and agricultural industries; 7) food industries, and 8) chemical, electrical, and industries related to literature, sciences, and arts (together with industries not included in the previous groups). As shown in Table A5, workers' associations are more distributed across the different types compared to employers' associations, in which almost 80 per cent of organizations and members belong to agriculture-oriented groups.

Table A5. Labor organizations by type (1920)

	Organizations	Members
Unclassified	396 (19.48%)	113176 (20.48%)
Agriculture in general	325 (15.99%)	86640 (15.68%)
Commerce	164 (8.07%)	69140 (12.51%)
Construction industries	208 (10.23%)	48770 (8.83%)
Transportation industries	162 (7.97%)	50267 (9.09%)
Clothing and hat-making industries	172 (8.46%)	34499 (6.24%)
Mining, salt mines, quarries, and ground-water	149 (7.33%)	60682 (10.98%)
Food industries	94 (4.62%)	19178 (3.47%)
Woodworking	91 (4.48%)	14041 (2.54%)
Metalworking	75 (3.69%)	17450 (3.16%)
Industries related to literature, arts, and sciences	65 (3.20%)	10223 (1.85%)
Textile industries	31 (1.52%)	3521 (0.64%)
Furniture manufacturing	26 (1.28%)	6381 (1.15%)
Production and transmission of physical forces	19 (0.93%)	4280 (0.77%)
Forestry and agricultural industries	18 (0.89%)	9136 (1.65%)
Chemical industries	17 (0.84%)	1643 (0.30%)
Electrical industries	7 (0.34%)	791 (0.14%)
Luxury, watchmaking, and toyshop	7 (0.34%)	2282 (0.41%)
Livestock	7 (0.34%)	458 (0.08%)
Total	2033	552557

B Description of main variables

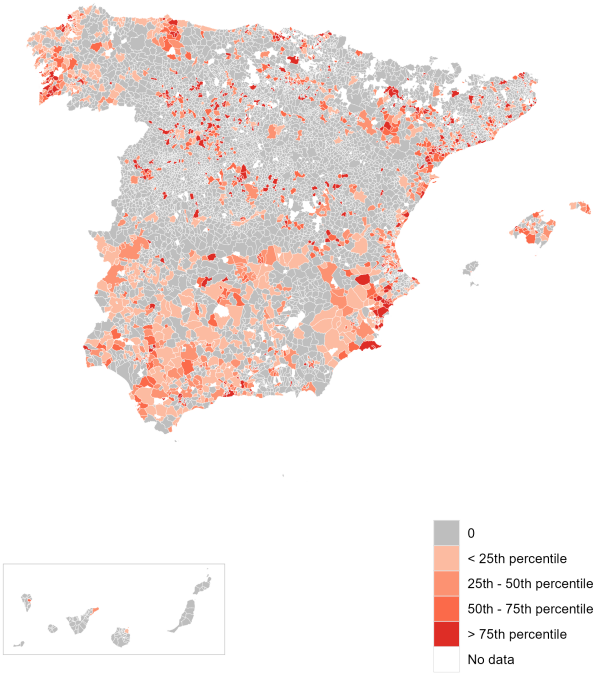


Figure B1. Labor organizations per capita in 1916.

Table B1. Description of variables and sources

Variable	*Description*	*Source*
Electoral outcomes		
Leftist vote 1977	Vote share obtained by left-wing parties in the 1977 general elections.	Author's elaboration from official electoral records of the *Ministerio del Interior*.
Right-wing vote 1977	Vote share obtained by right-wing parties in the 1977 general elections.	Author's elaboration from official electoral records of the *Ministerio del Interior*.
Leftist vote 1936	Vote share obtained by left-wing parties in the 1936 general elections.	Rodon et al. (2026).
Right-wing vote 1936	Vote share obtained by right-wing parties in the 1936 general elections.	Rodon et al. (2026).
Historical labor mobilization		
Members of labor organizations per capita (log)	Natural logarithm of one plus labor organization members per 1000 inhabitants in 1920.	Author's elaboration from the 1920 social electoral census published by the *Instituto de Reformas Sociales* (IRS).
Labor organizations per capita (log)	Natural logarithm of one plus labor organizations per 1000 inhabitants in 1916.	Author's elaboration from the 1916 census of professional associations published by the IRS.
Members of employer organizations per capita (log)	Natural logarithm of one plus employer organization members per 1000 inhabitants in 1920.	Author's elaboration from the 1920 social electoral census published by the IRS.
Employer organizations per capita (log)	Natural logarithm of one plus employer organizations per 1000 inhabitants in 1916.	Author's elaboration from the 1916 census of professional associations published by the IRS.
UGT members per capita 1932 (log)	Logarithm of UGT members per 1000 inhabitants in 1932.	Aguilar et al. (2025).
Historical controls		
Population 1900 (log)	Logarithm of municipal population in 1900.	*Explorador Social*.
Illiteracy rate 1900	Percentage of illiterate population in 1900.	*Explorador Social*.
Railway stations 1900 (0/1)	Presence of railway stations within the municipality in 1900.	*Explorador Social*.
Cultivated land (share)	Cultivated area divided by total municipal area in the early 1900s, with both areas expressed in the same units. Values exceeding one are treated as missing.	Author's elaboration from Rodriguez-Lopez et al. (2025).
Postwar and socioeconomic transformation variables		
Population 1975 (log)	Logarithm of municipal population in 1975.	INE population census.
Population change 1920–1975 (log)	Logarithm of the ratio of municipal population in 1975 to municipal population in 1920.	Author's elaboration from municipal population figures in *Explorador Social*.
Population change 1950–1975 (log)	Logarithm of the ratio of municipal population in 1975 to municipal population in 1950.	Author's elaboration from municipal population figures in *Explorador Social*.
Manufacturing establishments 1970 (share)	Number of manufacturing establishments divided by the total number of establishments in the municipality in 1970.	Author's elaboration from the 1970 Census of Premises published by the INE.
Extractive industry establishments 1970 (share)	Number of establishments in extractive industries divided by the total number of establishments in the municipality in 1970.	Author's elaboration from the 1970 Census of Premises published by the INE.
Municipal budget per capita 1958 (log)	Logarithm of municipal budget per capita in 1958.	Author's elaboration from provincial statistical yearbooks published by the INE.
Female widowhood rate 1940	Share of female widowed population in 1940.	*Explorador Social*.
Population change 1930–1940	Relative change in municipal population between 1930 and 1940: $(P_{1940} - P_{1930})/P_{1930}$.	Author's elaboration from municipal population figures in *Explorador Social*.
Pre-treatment sociability variables		
First International section (0/1)	Binary indicator for the presence of a section of the First International in the municipality.	Author's elaboration from Termes (2000).
Patriotic liberal clubs (0/1) 1820–1823	Binary indicator for the presence of patriotic liberal clubs during the Liberal Triennium.	Author's elaboration from Gil Novales (1975).
Binary indicator for the presence of informal sociability buildings in 1862.	Author's elaboration from Ministerio de la Gobernación (1862)	
Geographic controls		
Distance to the coast (log)	Logarithm of geodesic distance to the nearest coastline.	Oto-Peralías (2026).
Distance to provincial capital (log)	Logarithm of geodesic distance to the provincial capital.	Oto-Peralías (2026).
Roughness (log)	Logarithm of terrain ruggedness.	Oto-Peralías (2026).
Mean elevation (log)	Logarithm of average municipal elevation.	Oto-Peralías (2026).

Table B2. Municipal-level summary statistics

	Obs	Mean	Std. Dev.	Min	Max
Leftist vote share 1977	7990	0.22	0.14	0.00	0.78
Leftist coalition vote share 1936	7517	0.36	0.21	0.00	1.00
Right coalition vote share 1936	7588	0.54	0.21	0.00	1.00
Labor orgs. per capita 1916 (log)	7800	0.14	0.41	0.00	9.17
Members of labor orgs. per capita 1920 (log)	7800	6.28	27.84	0.00	531.91
UGT members per capita 1932 (log)	7294	1.24	1.99	0.00	7.77
Presence of patriotic liberal clubs 1820–1823	8123	0.02	0.14	0.00	1.00
Presence of informal sociability buildings 1862	8122	0.04	0.14	0.00	1.00
Distance to the coast (log)	8113	4.32	1.31	-1.40	5.88
Distance to provincial capital (log)	8094	3.61	0.71	-8.83	5.43
Roughness (log)	8078	-0.62	1.03	-6.17	2.15
Mean elevation (log)	8105	1.65	0.90	-4.61	3.18
International Workingmen's Association 1872	8115	0.02	0.15	0.00	1.00
Illiteracy rate 1900	8115	61.35	16.54	7.26	97.35
Population 1900 (log)	7786	6.99	1.06	4.34	13.20
Presence of railway stations 1900 (0/1)	8115	0.17	0.38	0.00	1.00
Share of cultivated land 1900	8016	0.34	0.24	0.00	1.00
Share of establishments in manufacturing 1970	7972	0.16	0.11	0.00	1.00
Share of establishments in extractive industries 1970	7972	0.0007	0.0070	0.0000	0.2634
Population 1975 (log)	8114	6.74	1.53	2.40	14.99
Population change 1920–1975 (log)	7799	-0.33	0.70	-3.84	4.93
Population change 1950–1975 (log)	7891	-0.37	0.56	-3.31	5.00
Municipal budget per capita 1958 (log)	1823	4.98	0.46	2.95	7.08

Notes: Variables are measured at the municipal level. Statistics use all available non-missing observations for each variable; the number of observations varies due to differences in data availability. All vote shares are expressed on a 0–1 scale. Establishment shares use total establishments as the denominator. Municipal budget per capita uses the 1958 budget, expressed in pesetas, divided by population in 1960; budget data are available only for a subset of provinces in the 1958 provincial statistical yearbooks. Statistics are rounded to two decimal places, except for the share of establishments in extractive industries, which is reported to four decimal places.

Table B3. List of left-wing parties running in the 1977 general elections

Abbreviation	Name (English)	Name (Spanish / Catalan / Basque / Galician)
PSOE	Spanish Socialist Workers' Party	Partido Socialista Obrero Español
PCE	Communist Party of Spain	Partido Comunista de España
PSP-US	Popular Socialist Party – Socialist Unity	Partido Socialista Popular – Unidad Socialista
EC-FED	Left of Catalonia – Democratic Electoral Front	Esquerra de Catalunya – Front Electoral Democràtic
FDI	Democratic Left Front	Frente Democrático de Izquierdas
ASDCI	Democratic Socialist Alliance	Alianza Socialista Democrática
AET	Workers' Electoral Group	Agrupación Electoral de Trabajadores
EE	Basque Country Left	Euskadiko Ezkerra
FUT	Front for Workers' Unity	Frente para la Unidad de los Trabajadores
ESB	Basque Socialist Party	Euskal Sozialistak Batasuna
PSG	Galician Socialist Party	Partido Socialista Galego
BNPG	Galician National-Popular Bloc	Bloque Nacional-Popular Galego
PSOE-H	Spanish Socialist Workers' Party – Historical	Partido Socialista Obrero Español (Histórico)
CUPS	Popular Unity for Socialism Candidacy	Candidatura de Unidad Popular Socialista
CCIA	Centre Independent Aragonese Candidacy	Candidatura Aragonesa Independiente de Centro

Table B4. Parties and candidates included in the left-wing electoral bloc in 1936

Abbreviation	Name (English)	Name (Spanish / Catalan / Galician / Basque)
PSOE	Spanish Socialist Workers' Party	Partido Socialista Obrero Español
PCE	Communist Party of Spain	Partido Comunista de España
POUM	Workers' Party of Marxist Unification	Partido Obrero de Unificación Marxista
PS	Syndicalist Party	Partido Sindicalista
IR	Republican Left	Izquierda Republicana
UR	Republican Union	Unión Republicana
PRF	Federal Republican Party	Partido Republicano Federal
ERC	Republican Left of Catalonia	Esquerra Republicana de Catalunya
EV	Valencian Left	Esquerra Valenciana
PG	Galicianist Party	Partido Galeguista
ANV	Basque Nationalist Action	Acción Nacionalista Vasca
II	Left-wing independents	Independientes de izquierda

Source: Rodon et al. (2026).

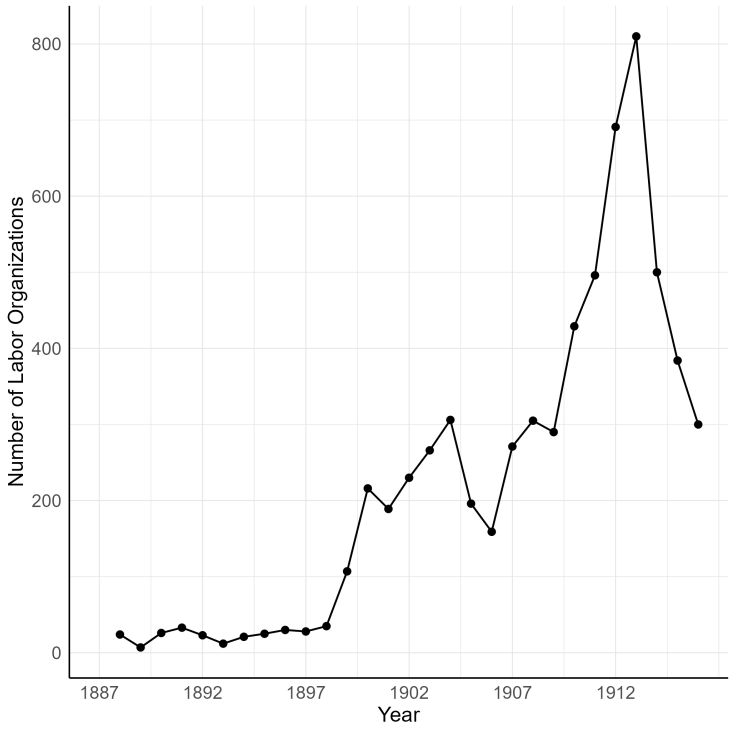


Figure B2. Creation of labor organizations per year

C Baseline results

Table C1. Early labor mobilization and support for the Left in 1977

	(1)	(2)	(3)	(4)
Labor orgs. per capita (log)	0.091***	0.072***	0.043***	0.032***
	(0.010)	(0.009)	(0.007)	(0.006)
Province FE	✓	✓	✓	✓
Geographical controls		✓	✓	✓
Historical controls			✓	✓
Contemporary controls				✓
Mean DV	0.22	0.22	0.22	0.22
N	7,777	7,720	7,607	7,562
Within R^2	0.03	0.09	0.15	0.20

Notes: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Province fixed-effects regressions with standard errors clustered at the province level. Geographical, historical, and contemporary controls not shown.

Table C2. Early labor mobilization and support for right-wing parties in 1977

	(1)	(2)	(3)	(4)
Labor orgs. per capita (log)	-0.027***		-0.020***	
	(0.006)		(0.006)	
Members of labor orgs. per capita (log)		-0.006***		-0.005***
		(0.002)		(0.002)
Province FE	✓	✓	✓	✓
Geographical controls	✓	✓	✓	✓
Historical controls	✓	✓	✓	✓
Contemporary controls			✓	✓
Mean DV	0.40	0.40	0.40	0.40
N	7,607	7,607	7,562	7,562
Within R^2	0.08	0.08	0.10	0.10

Notes: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Province fixed-effects regressions with standard errors clustered at the province level. Geographical, historical, and contemporary controls not shown.

Table C3. Early labor mobilization and support for the Left in 1977

	(1)	(2)	(3)	(4)
Labor organization 1916	0.029***		0.022***	
	(0.005)		(0.005)	
Members of labor organization 1920		0.027***		0.025***
		(0.008)		(0.007)
Province FE	✓	✓	✓	✓
Geographical controls	✓	✓	✓	✓
Historical controls	✓	✓	✓	✓
Contemporary controls			✓	✓
Mean DV	0.22	0.22	0.22	0.22
N	7,607	7,607	7,562	7,562
Within R^2	0.15	0.14	0.20	0.20

Notes: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Province fixed-effects regressions with standard errors clustered at the province level. The labor mobilization indicators are binary. Geographical, historical, and contemporary controls not shown.

Table C4. Early labor mobilization and support for the Left in 1977 controlling for Civil War violence

	(1)	(2)	(3)	(4)
Labor orgs. per capita (log)	0.041***		0.031***	
	(0.007)		(0.006)	
Members of labor orgs. per capita (log)		0.008***		0.007***
		(0.002)		(0.002)
Population change 1930-1940	0.068***	0.068***	-0.008	-0.010
	(0.013)	(0.014)	(0.016)	(0.016)
Female widowhood rate 1940	0.002***	0.002***	0.003***	0.003***
	(0.001)	(0.001)	(0.001)	(0.001)
Province FE	✓	✓	✓	✓
Geographical controls	✓	✓	✓	✓
Historical controls	✓	✓	✓	✓
Contemporary controls			✓	✓
Mean DV	0.22	0.22	0.22	0.22
N	7,606	7,606	7,561	7,561
Within R^2	0.15	0.15	0.20	0.20

Notes: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Province fixed-effects regressions with standard errors clustered at the province level. Geographical, historical, and contemporary controls not shown.

Table C5. Early labor mobilization and support for the Left in 1977 with pre-treatment sociability

	(1)	(2)	(3)	(4)
Labor orgs. per capita 1916 (log)	0.045***		0.034***	
	(0.007)		(0.006)	
Members of labor orgs. per capita 1920 (log)		0.009***		0.008***
		(0.002)		(0.002)
Informal sociability buildings 1862	-0.027***	-0.029***	-0.029***	-0.030***
	(0.009)	(0.009)	(0.008)	(0.008)
Patriotic liberal clubs 1820-1823	-0.039***	-0.041***	-0.036***	-0.037***
	(0.013)	(0.013)	(0.012)	(0.012)
Province FE	✓	✓	✓	✓
Geographical controls	✓	✓	✓	✓
Historical controls	✓	✓	✓	✓
Contemporary controls			✓	✓
Mean DV	0.22	0.22	0.22	0.22
N	7,607	7,607	7,562	7,562
R^2	0.15	0.15	0.20	0.20

Notes: $^{*}\ p < 0.1, ^{**}\ p < 0.05, ^{***}\ p < 0.01$. Province fixed-effects regressions with standard errors clustered at the province level. Geographical, historical, and contemporary controls not shown.

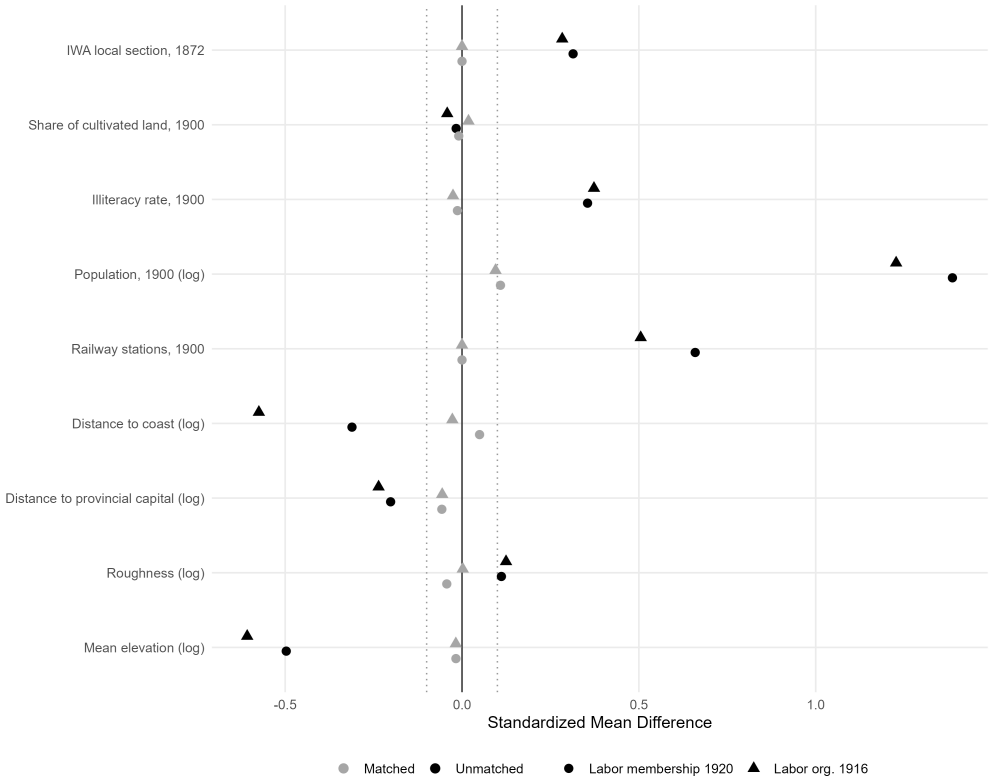


Figure C1. Covariate balance before and after Coarsened Exact Matching (CEM)

Notes: The figure reports standardized mean differences between municipalities with and without labor organizations in 1916 or labor organization members in 1920, before and after coarsened exact matching (CEM). Matching uses the historical and geographical covariates shown, with eight equal-width bins for logged population and four for the remaining continuous covariates; binary covariates are matched exactly. Post-matching differences incorporate CEM weights. Dotted lines mark standardized mean differences of ± 0.1.

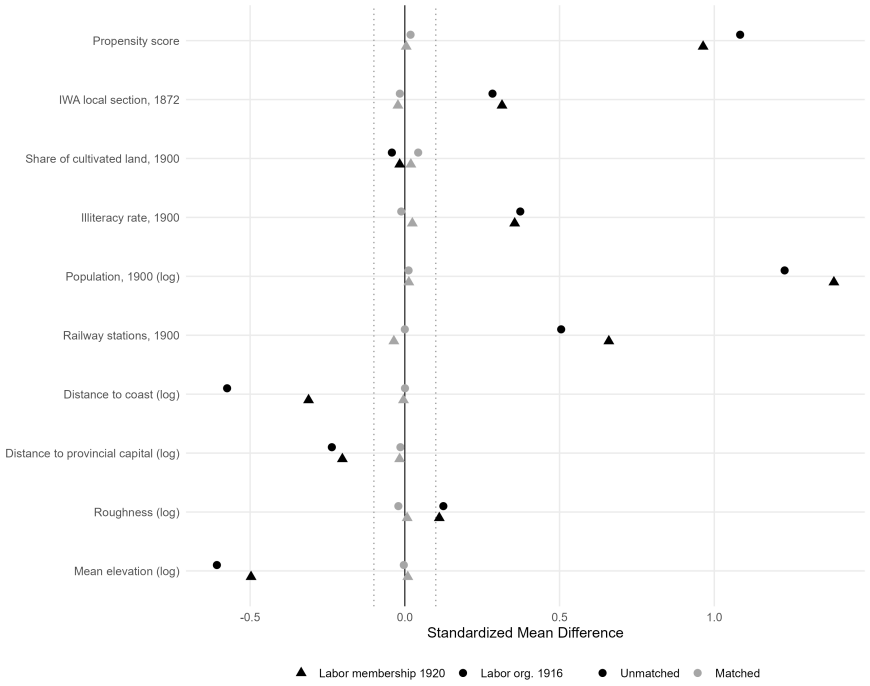


Figure C2. Covariate balance before and after Propensity Score Matching

Notes: The figure reports standardized mean differences between municipalities with and without labor organizations in 1916 or labor organization members in 1920, before and after propensity score matching. Propensity scores are estimated separately for each treatment using a probit model with the historical and geographical covariates shown. One-to-one nearest-neighbor matching is performed without replacement, with a caliper of 0.1 standard deviations of the estimated propensity score. Dotted lines mark standardized mean differences of ± 0.1.

Table C6. Early labor mobilization and support for the Left in 1977: Propensity Score Matching

	(1)	(2)	(3)	(4)	(5)	(6)
Labor organization 1916	0.043***		0.047***		0.040***	
	(0.009)		(0.008)		(0.009)	
Members of labor organization 1920		0.053***		0.061***		0.053***
		(0.011)		(0.010)		(0.010)
Matched-pair FE	✓	✓	✓	✓	✓	✓
Geographical controls			✓	✓	✓	✓
Historical controls			✓	✓	✓	✓
Contemporary controls					✓	✓
Mean DV	0.27	0.31	0.27	0.31	0.27	0.31
N	2,198	1,130	2,198	1,130	2,198	1,130
Within R^2	0.05	0.07	0.19	0.19	0.24	0.28

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The dependent variable is the share of votes for the Left in 1977. All models are estimated on samples obtained through one-to-one nearest-neighbor Propensity Score Matching without replacement, using a caliper of 0.1 standard deviations of the propensity score. Propensity scores are estimated using a probit model with geographical and historical covariates. All models include matched-pair fixed effects. Geographical, historical, and contemporary controls are not shown. Standard errors clustered at the province level are reported in parentheses.

Table C7. Early labor mobilization and support for the Left in 1977: excluding provincial capitals and small municipalities

	(1)	(2)	(3)	(4)
Labor orgs. per capita (log)	0.061***		0.047***	
	(0.014)		(0.013)	
Members of labor orgs. per capita (log)		0.010***		0.007***
		(0.002)		(0.002)
Province FE	✓	✓	✓	✓
Geographical controls	✓	✓	✓	✓
Historical controls	✓	✓	✓	✓
Contemporary controls			✓	✓
Mean DV	0.29	0.29	0.29	0.29
N	3,152	3,152	3,139	3,139
Within R^2	0.10	0.10	0.16	0.16

Notes: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Province fixed-effects regressions with standard errors clustered at the province level. Geographical, historical, and contemporary controls not shown. Provincial capitals and municipalities with fewer than 1,000 inhabitants are excluded.

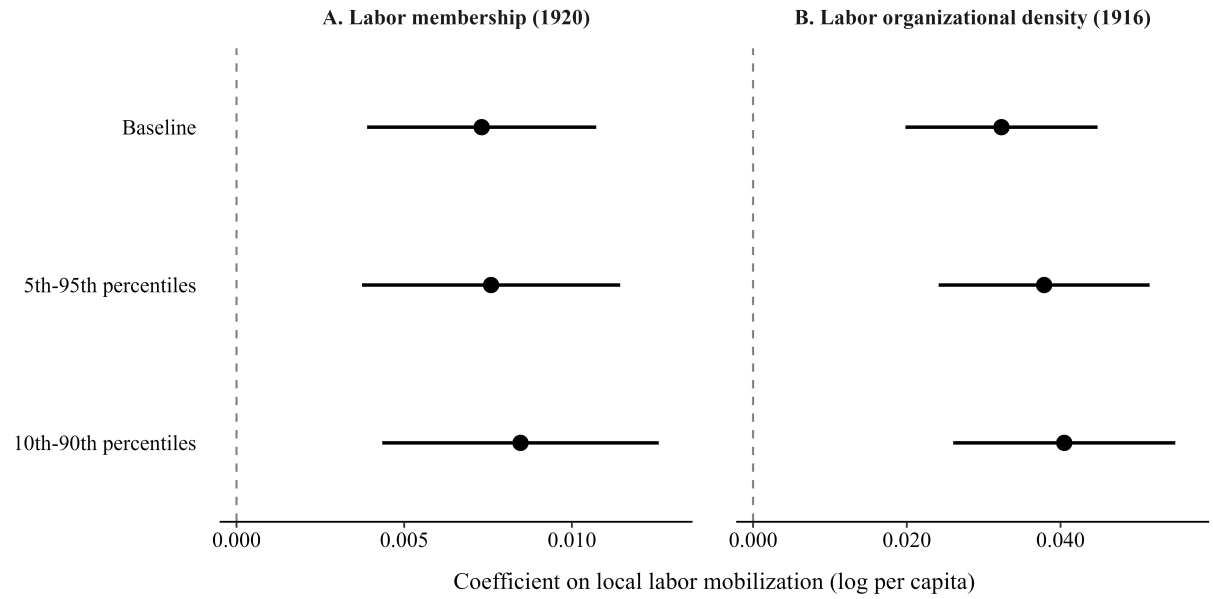


Figure C3. Early labor mobilization and left-wing voting in 1977: excluding extreme demographic-change municipalities

Notes: Points represent coefficients on local labor membership (Panel A) and labor organizational density (Panel B). Horizontal lines indicate 95% confidence intervals based on standard errors clustered by province. Circles represent samples retaining municipalities between the 5th and 95th percentiles of population change between 1920 and 1975; diamonds retain municipalities between the 10th and 90th percentiles. All models include province fixed effects and geographical, historical, and contemporary controls. Horizontal scales differ across panels.

Table C8. Early labor mobilization and left-wing voting: Conley SE

	(1)	(2)	(3)	(4)
Panel A. Labor membership				
Members per capita (log)	0.007***	0.007***	0.007***	0.007***
	(0.0017)	(0.0015)	(0.0017)	(0.0017)
Panel B. Labor organizational density				
Labor organizations per capita (log)	0.032***	0.032***	0.032***	0.032***
	(0.0062)	(0.0056)	(0.0063)	(0.0066)
Geographic controls	✓	✓	✓	✓
Pre-treatment controls	✓	✓	✓	✓
Post-treatment controls	✓	✓	✓	✓
Province fixed effects	✓	✓	✓	✓
SE	Province cluster	Conley	Conley	Conley
Distance cutoff		25 km	50 km	100 km
Observations	7,562	7,562	7,562	7,562

Notes: The dependent variable is the left-wing vote share in 1977. Both panels use the fully controlled specification and the same sample. Within each panel, only the variance estimator changes across columns. Standard errors are reported in parentheses. Conley corrections use a uniform kernel and spherical distances. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

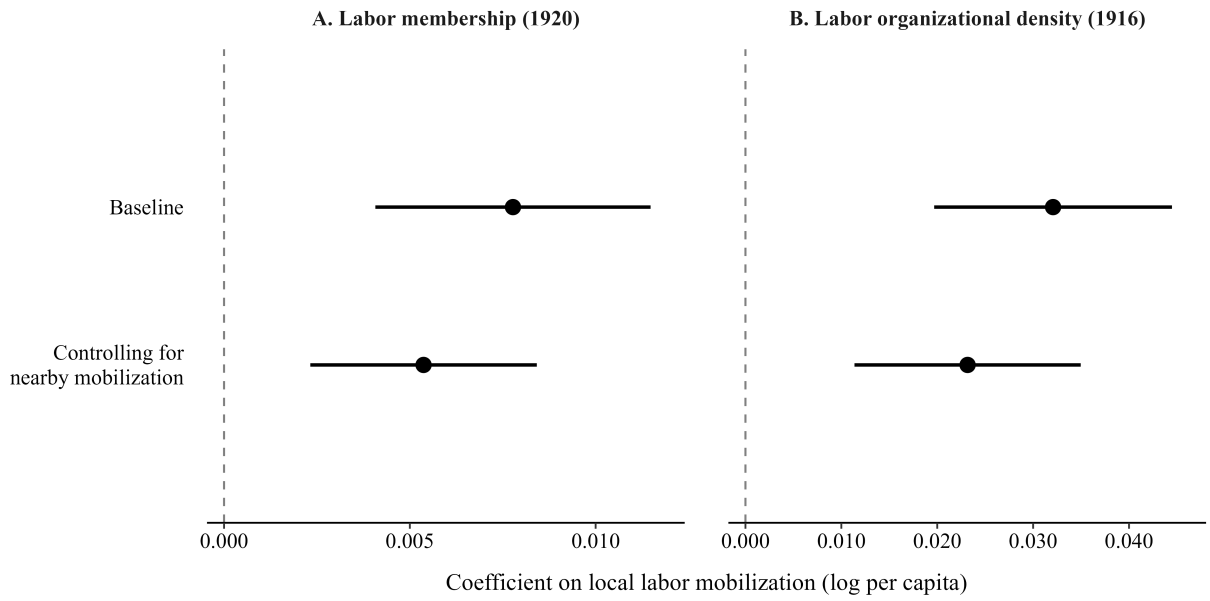


Figure C4. Local labor mobilization and left-wing voting in 1977: robustness to nearby mobilization

Notes: Points represent coefficients on local labor membership (Panel A) and labor organizational density (Panel B). Horizontal lines indicate 95% confidence intervals based on Conley standard errors with a uniform kernel and a 50 km cutoff. Circles represent the baseline specification; diamonds additionally control for average labor mobilization in other municipalities within three distance bands: 0–10, 10–25, and 25–50 km. Both specifications use the same estimation sample and include province fixed effects and geographical, historical, and contemporary controls. Horizontal scales differ across panels.

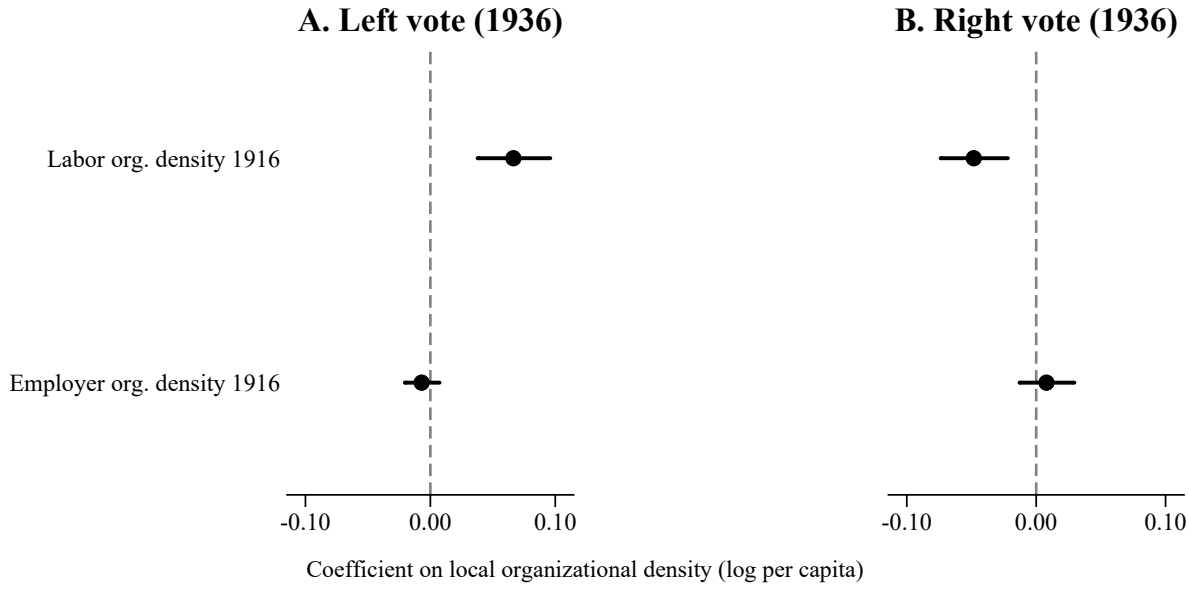


Figure C5. Labor and employer organizational density and electoral support in 1936

Table C9. Early labor and employer mobilization and electoral support in 1936

	Left vote (1)	Right vote (2)	Left vote (3)	Right vote (4)
Members of labor orgs. per capita (log)	0.0158***	-0.0124***		
	(0.0029)	(0.0030)		
Members of employer orgs. per capita (log)	-0.0055***	0.0066***		
	(0.0013)	(0.0014)		
Labor orgs. per capita (log)			0.0665***	-0.0482***
			(0.0143)	(0.0127)
Employer orgs. per capita (log)			-0.0070	0.0080
			(0.0067)	(0.0104)
First International presence	0.0125	-0.0242*	0.0119	-0.0242**
	(0.0117)	(0.0121)	(0.0108)	(0.0111)
Illiteracy rate 1900	0.0007	-0.0012**	0.0007	-0.0013**
	(0.0005)	(0.0005)	(0.0005)	(0.0005)
Population 1900 (log)	0.0331***	-0.0269***	0.0335***	-0.0265***
	(0.0047)	(0.0049)	(0.0044)	(0.0046)
Railway station 1900	0.0489***	-0.0371***	0.0512***	-0.0391***
	(0.0081)	(0.0078)	(0.0083)	(0.0078)
Share of cultivated land	-0.0332	0.0306	-0.0361	0.0339
	(0.0307)	(0.0334)	(0.0313)	(0.0336)
Population change 1920–1930	0.0452**	-0.0439**	0.0423**	-0.0418*
	(0.0206)	(0.0216)	(0.0206)	(0.0215)
Constant	0.0631	0.8411***	0.0596	0.8387***
	(0.0646)	(0.0819)	(0.0620)	(0.0780)
Province FE	✓	✓	✓	✓
Geographical controls	✓	✓	✓	✓
Provinces	49	50	49	50
N	7,166	7,231	7,166	7,231
Within R^2	0.0885	0.0576	0.0854	0.0537

Notes: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Province fixed-effects regressions with standard errors clustered at the province level in parentheses. Each model includes both labor and employer mobilization indicators. Geographical controls include log distance to the coast, log distance to the provincial capital, log elevation standard deviation, and log mean elevation.

Table C10. Early labor movement and leftist support: sequential g-estimation

	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Second Republic labor mobilization						
Labor orgs. per capita (log)	0.041***	0.037***	0.037***			
	(0.008)	(0.007)	(0.007)			
Members of labor orgs. per capita (log)				0.008***	0.007***	0.007***
				(0.002)	(0.002)	(0.002)
UGT members per capita (log)		0.008***			0.008***	
		(0.001)			(0.001)	
Province FE	✓	✓	✓	✓	✓	✓
Geographical controls	✓	✓	✓	✓	✓	✓
Historical controls	✓	✓	✓	✓	✓	✓
Bootstrapped SEs			✓			✓
Model	OLS	OLS	Seq. g-est.	OLS	OLS	Seq. g-est.
Mean DV	0.223	0.223	0.223	0.223	0.223	0.223
N	7069	7069	7069	7069	7069	7069
Provinces	50	50	50	50	50	50
R^2	0.38	0.39		0.38	0.39	
Panel B: Second Republic leftist vote (1936)						
Labor orgs. per capita (log)	0.044***	0.028***	0.028***			
	(0.007)	(0.005)	(0.005)			
Members of labor orgs. per capita (log)				0.008***	0.004**	0.004**
				(0.002)	(0.002)	(0.002)
Leftist vote share 1936		0.247***			0.248***	
		(0.013)			(0.013)	
Province FE	✓	✓	✓	✓	✓	✓
Geographical controls	✓	✓	✓	✓	✓	✓
Historical controls	✓	✓	✓	✓	✓	✓
Bootstrapped SEs			✓			✓
Model	OLS	OLS	Seq. g-est.	OLS	OLS	Seq. g-est.
Mean DV	0.225	0.225	0.225	0.225	0.225	0.225
N	7162	7162	7162	7162	7162	7162
Provinces	49	49	49	49	49	49
R^2	0.39	0.48		0.39	0.48	

Notes: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The dependent variable is leftist vote share in 1977. Both electoral vote shares are measured on a 0–1 scale. Columns (1) and (4) exclude the mediator; columns (2) and (5) include it; columns (3) and (6) report sequential g-estimation. The mediators are logged UGT membership per capita in 1932 (Panel A) and leftist vote share in 1936 (Panel B). OLS standard errors are clustered by province; sequential g-estimation standard errors use 1,000 province bootstrap replications. Each group of three models uses the same complete-case sample. All models include province fixed effects. Geographical controls are logged distances to the coast and provincial capital, logged roughness, and logged mean elevation. Historical controls are International Workingmen's Association presence in 1872, illiteracy and logged population in 1900, railway station presence in 1900, and cultivated land share in 1900. Mean DV refers to the original outcome. In this additive linear specification, OLS including the mediator and sequential g-estimation yield identical treatment coefficients.

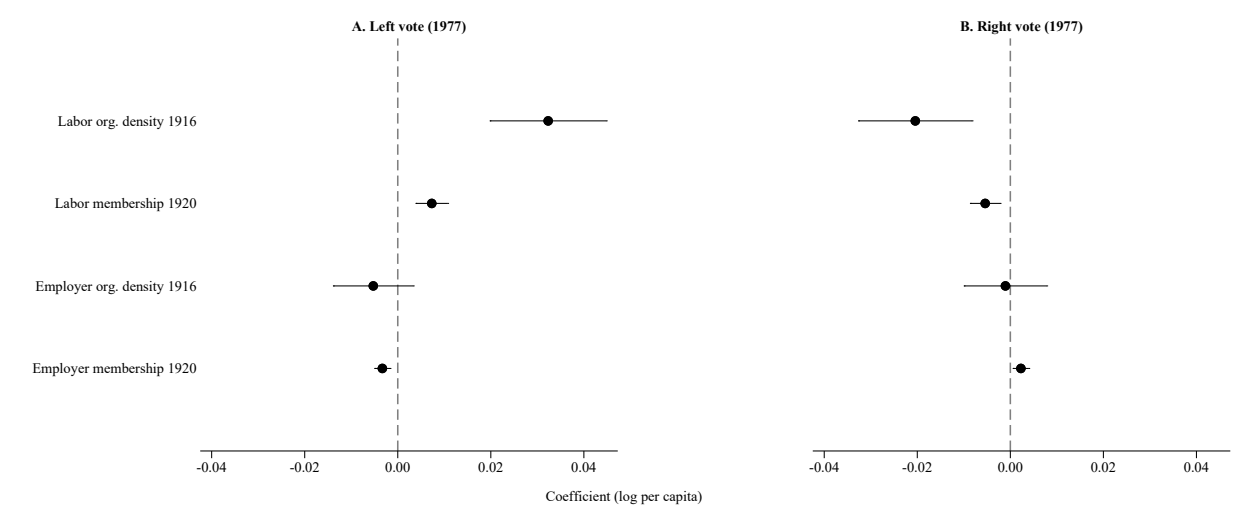


Figure C6. Voting patterns in 1977 by type of organization.
Notes: Points represent coefficient estimates; horizontal lines indicate 95% confidence intervals. Models include province fixed effects and historical and contemporary controls.

D Heterogeneous legacies

Table D1. Early labor mobilization and heterogeneous persistence in 1977 left support

	(1)	(2)	(3)	(4)
Labor orgs. per capita (log)	0.043***	0.035***	0.033***	0.034***
	(0.007)	(0.007)	(0.007)	(0.008)
Population change, 1920–1975 (log)		0.048***	0.049***	0.054***
		(0.004)	(0.004)	(0.006)
Labor orgs. × population change			-0.011	-0.022
			(0.010)	(0.015)
Geographical controls	✓	✓	✓	✓
Historical controls	✓	✓	✓	✓
Contemporary controls	✓	✓	✓	✓
Province FE	✓	✓	✓	✓
Mean DV	0.22	0.22	0.22	0.22
N	7,562	7,562	7,562	6,825
Within R^2	0.15	0.19	0.19	0.16

Notes: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Province fixed-effects regressions with standard errors clustered at the province level. All specifications include geographical, historical, and contemporary controls. Historical controls include population in 1900; population in 1975 is excluded from all specifications. Column (4) excludes municipalities in the top and bottom 5 percent of population change between 1920 and 1975.

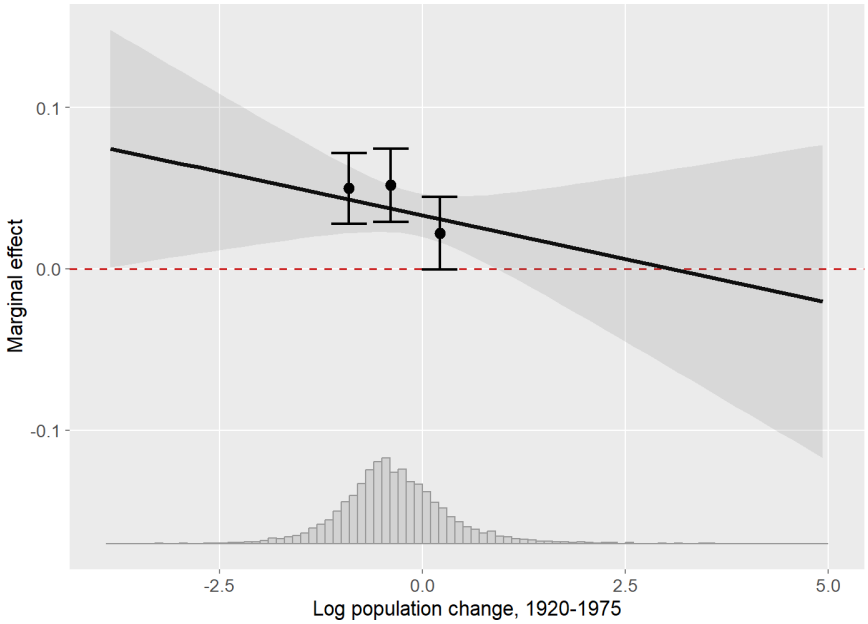


Figure D1. Early labor mobilization (organizational density) and left-wing support in 1977 conditional on population change between 1920 and 1975. Point estimates with 95% confidence intervals. Based on the estimates reported in Table D1.

Table D2. Early labor mobilization and heterogeneous persistence in 1977 left support: population change, 1950–1975

	(1)	(2)	(3)	(4)
Members of labor orgs. per capita (log)	0.007***	0.007***	0.007***	0.006***
	(0.002)	(0.002)	(0.002)	(0.002)
Population change, 1950–1975 (log)		0.023	0.025	0.034**
		(0.015)	(0.015)	(0.015)
Members × population change			-0.007***	-0.009***
			(0.002)	(0.003)
Geographical controls	✓	✓	✓	✓
Historical controls	✓	✓	✓	✓
Contemporary controls	✓	✓	✓	✓
Province FE	✓	✓	✓	✓
Mean DV	0.22	0.22	0.22	0.22
N	7,561	7,561	7,561	6,821
Within R^2	0.20	0.20	0.20	0.16

Notes: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Province fixed-effects regressions with standard errors clustered at the province level. All specifications include geographical, historical, and contemporary controls. Column (4) excludes municipalities in the top and bottom 5 percent of population change between 1950 and 1975.

Table D3. Early labor mobilization and heterogeneous persistence in 1977 left support: population change, 1950–1975

	(1)	(2)	(3)	(4)
Labor orgs. per capita (log)	0.032***	0.032***	0.030***	0.030***
	(0.006)	(0.006)	(0.006)	(0.009)
Population change, 1950–1975 (log)		0.022	0.022	0.031**
		(0.015)	(0.015)	(0.015)
Labor orgs. × population change			-0.010	-0.018
			(0.012)	(0.018)
Geographical controls	✓	✓	✓	✓
Historical controls	✓	✓	✓	✓
Contemporary controls	✓	✓	✓	✓
Province FE	✓	✓	✓	✓
Mean DV	0.22	0.22	0.22	0.22
N	7,561	7,561	7,561	6,821
Within R^2	0.20	0.20	0.20	0.16

Notes: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Province fixed-effects regressions with standard errors clustered at the province level. All specifications include geographical, historical, and contemporary controls. Column (4) excludes municipalities in the top and bottom 5 percent of population change between 1950 and 1975.

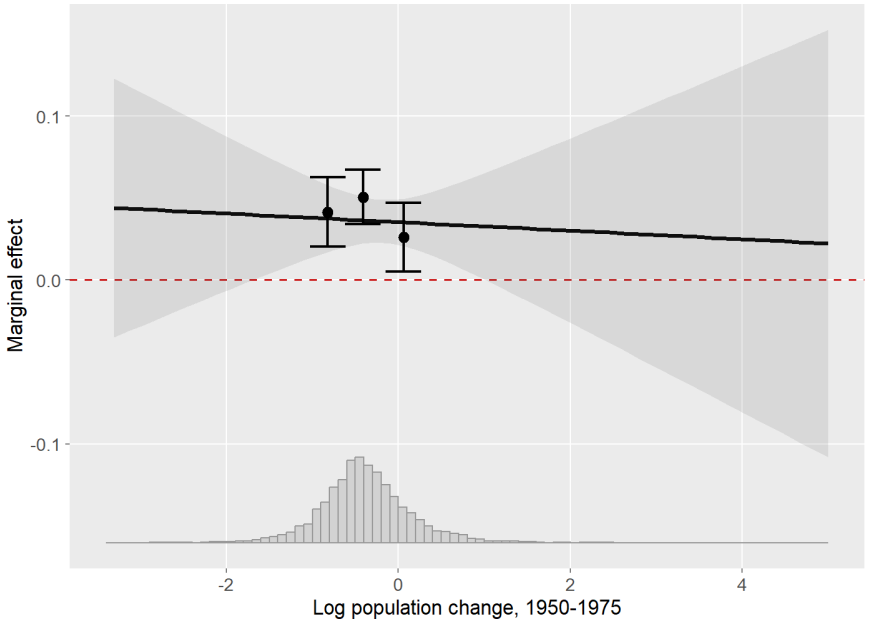


Figure D2. Early labor mobilization (organizational density) and left-wing support in 1977 conditional on population change between 1950 and 1975. Point estimates with 95% confidence intervals. Based on the estimates reported in Table D3.

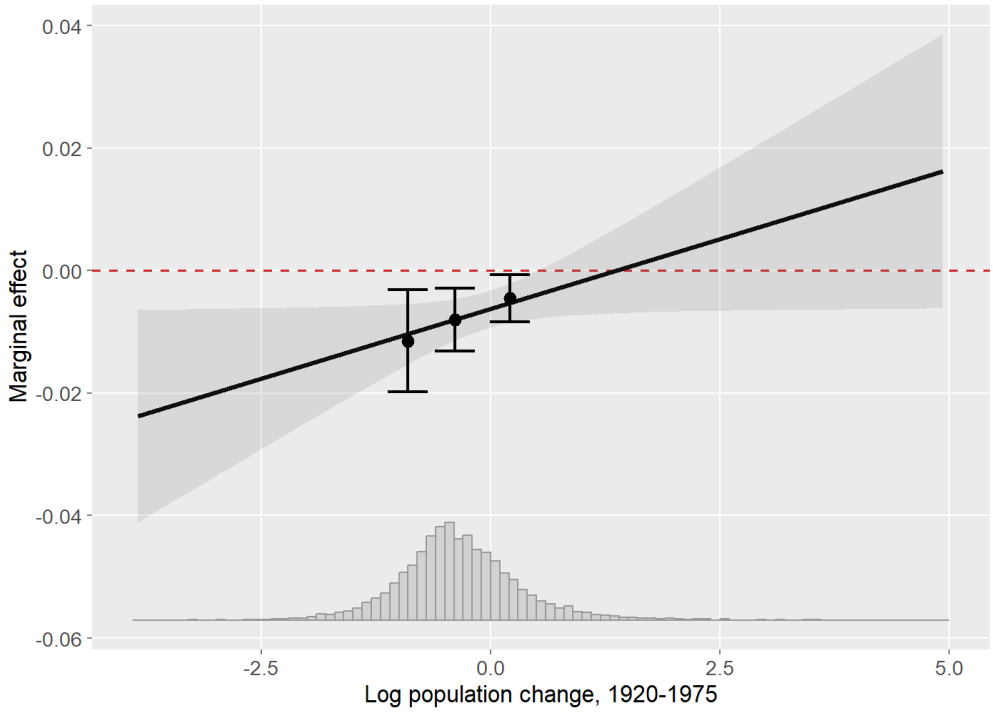


Figure D3. Early labor mobilization (membership-based) and right-wing support in 1977 conditional on population change between 1920 and 1975. Point estimates with 95% confidence intervals. Based on the binning estimator proposed by Hainmueller et al. (2019).

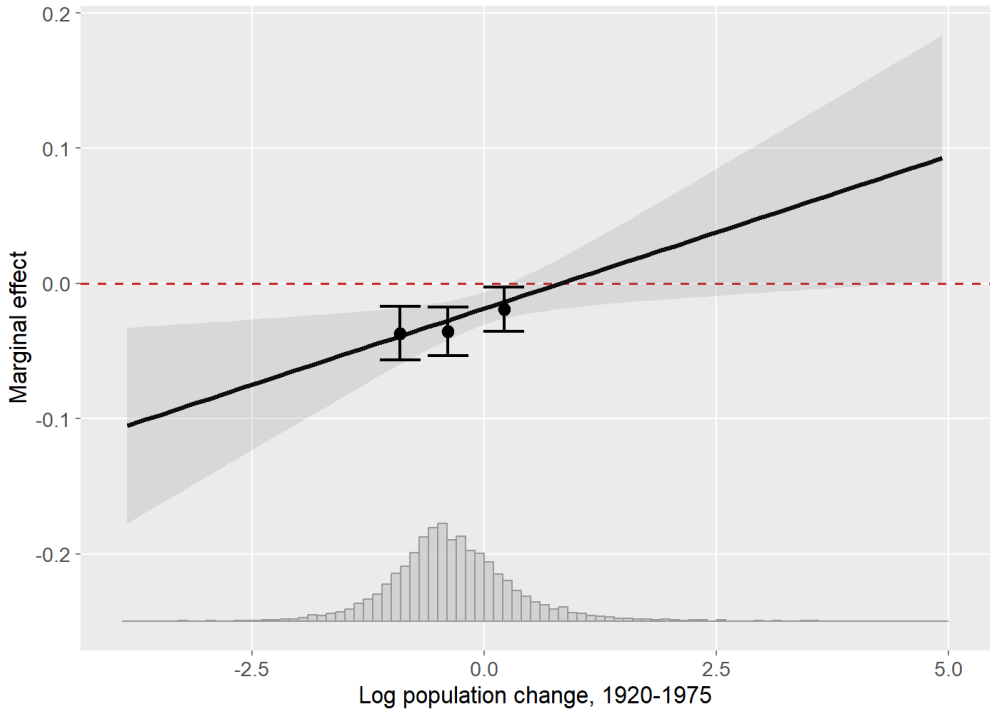


Figure D4. Early labor mobilization (organizational density) and right-wing support in 1977 conditional on population change between 1920 and 1975. Point estimates with 95% confidence intervals. Based on the binning estimator proposed by Hainmueller et al. (2019).

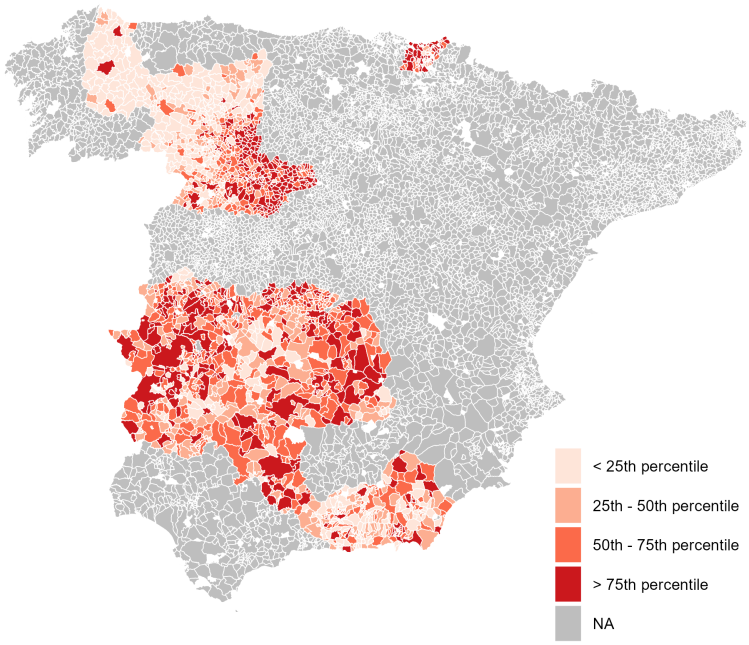


Figure D5. Distribution of municipal budget per capita in 1958.

Table D4. Early labor mobilization and heterogeneous persistence in 1977 left support

	(1)	(2)	(3)	(4)
Members of labor orgs. per capita (log)	0.010***	0.010***	0.069**	0.059
	(0.003)	(0.003)	(0.030)	(0.033)
Municipal budget per capita, 1958 (log)		-0.001	0.005	0.005
		(0.009)	(0.011)	(0.011)
Members × municipal budget			-0.012*	-0.010
			(0.005)	(0.006)
Geographical controls	✓	✓	✓	✓
Historical controls	✓	✓	✓	✓
Contemporary controls	✓	✓	✓	✓
Province FE	✓	✓	✓	✓
Mean DV	0.25	0.25	0.25	0.24
N	1,772	1,772	1,772	1,689
Within R^2	0.21	0.21	0.21	0.19

Notes: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Province fixed-effects regressions with standard errors clustered at the province level. All specifications include the full set of geographical, historical, and contemporary controls. Column (4) excludes municipalities in the top and bottom 5 percent of population change between 1920 and 1975.

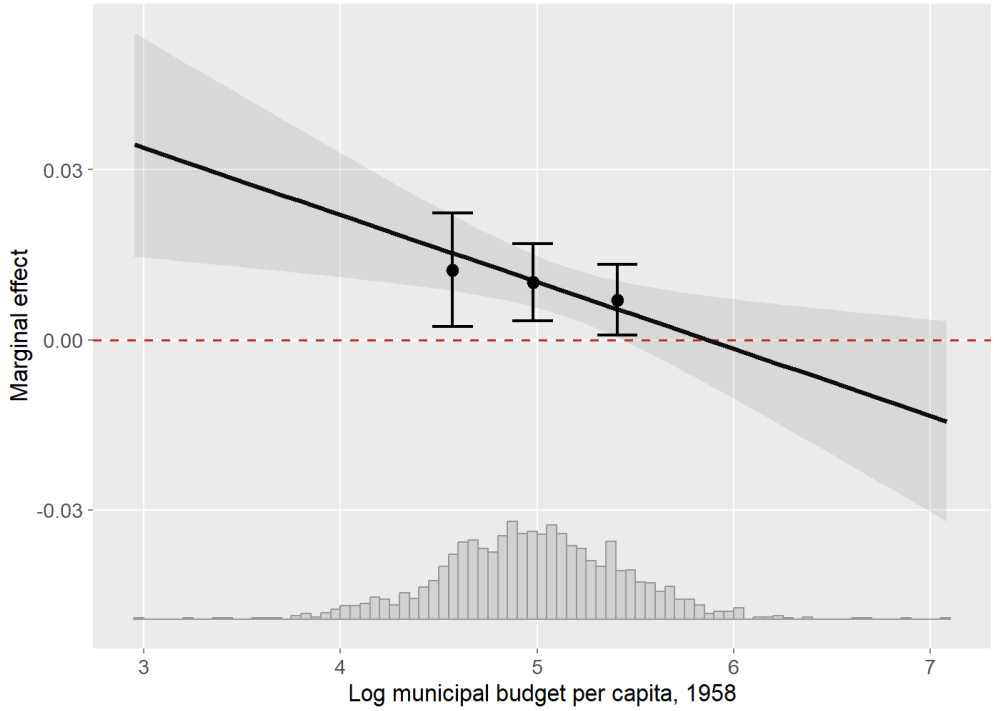


Figure D6. Early labor mobilization (membership-based) and left-wing support in 1977 conditional on municipal budget. Point estimates with 95% confidence intervals. Based on the estimates reported in Table D4.

Table D5. Early labor mobilization and heterogeneous persistence in 1977 left support

	(1)	(2)	(3)	(4)
Labor orgs. per capita (log)	0.035**	0.035**	0.369**	0.356*
	(0.015)	(0.015)	(0.144)	(0.167)
Municipal budget per capita, 1958 (log)		-0.000	0.005	0.005
		(0.009)	(0.010)	(0.010)
Labor orgs. × municipal budget			-0.065**	-0.062*
			(0.028)	(0.033)
Geographical controls	✓	✓	✓	✓
Historical controls	✓	✓	✓	✓
Contemporary controls	✓	✓	✓	✓
Province FE	✓	✓	✓	✓
Mean DV	0.25	0.25	0.25	0.24
N	1,772	1,772	1,772	1,689
Within R^2	0.21	0.21	0.21	0.18

Notes: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Province fixed-effects regressions with standard errors clustered at the province level. All specifications include the full set of geographical, historical, and contemporary controls. Column (4) excludes municipalities in the top and bottom 5 percent of population change between 1920 and 1975.

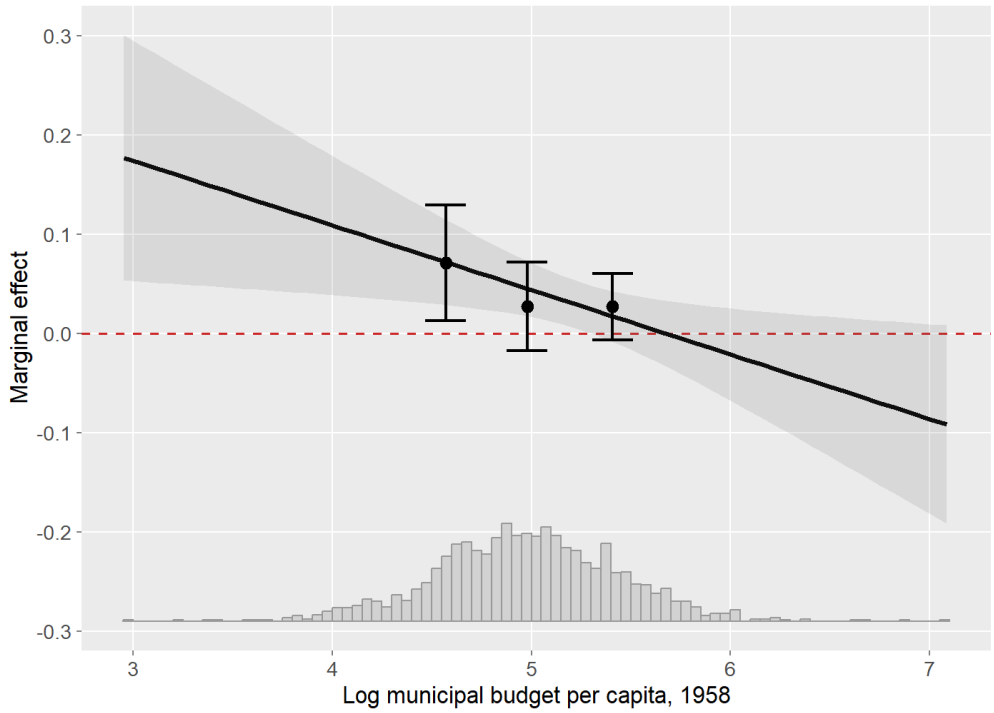


Figure D7. Early labor mobilization (organizational density) and left-wing support in 1977 conditional on municipal budget. Point estimates with 95% confidence intervals. Based on the estimates reported in Table D5.

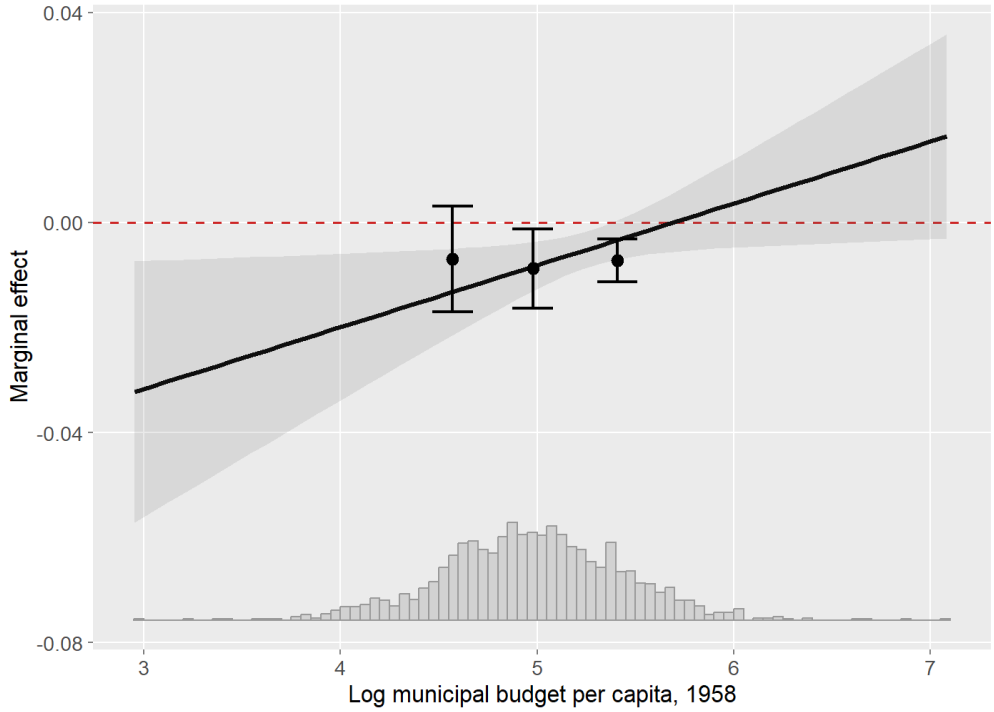


Figure D8. Early labor mobilization (membership-based) and right-wing support in 1977 conditional on municipal budget. Point estimates with 95% confidence intervals.

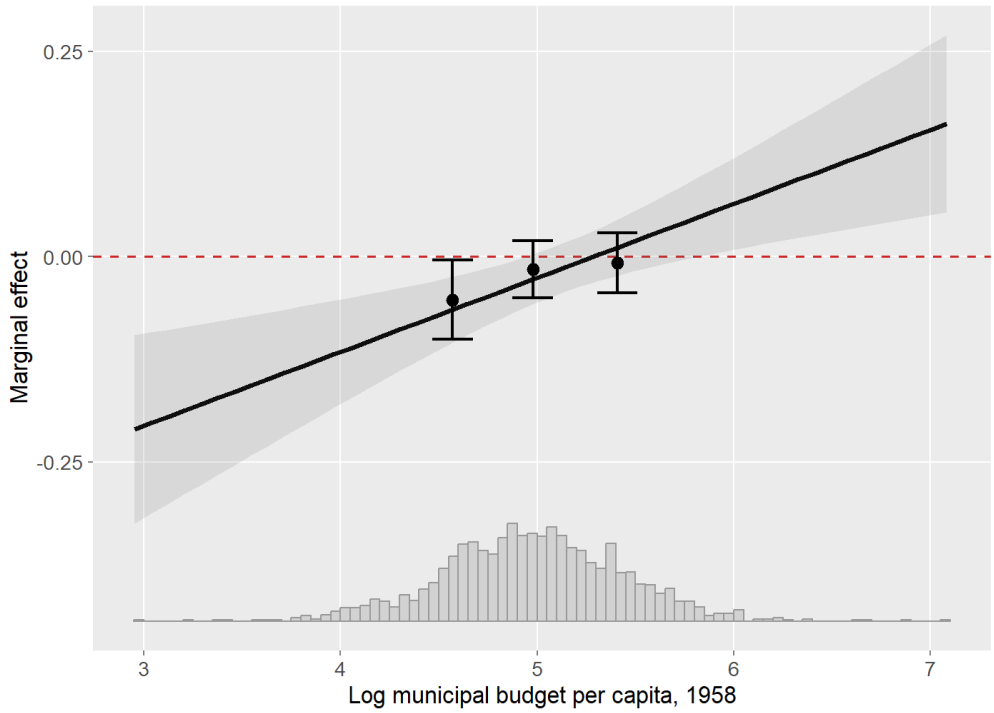


Figure D9. Early labor mobilization (organizational density) and right-wing support in 1977 conditional on municipal budget. Point estimates with 95% confidence intervals.

E Public commemoration of miners



Figure E1. Monument to the miner. Langreo, Asturias.



Figure E2. Monument to the Retired Miner. San Francisco de Turón, Mieres, Asturias.



Figure E3. International Monument to the Miner. Mieres, Asturias.