Research Paper

Land reform and rural conflict. Evidence from 1930s Spain

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ABSTRACT

Re-distributive policies are often used by governments to forestall conflict. This paper analyzes the evolution of rural conflict in a region of 1930s Spain in which fast transfers of land using temporal expropriations were aimed at reducing poverty and mitigate conflict. Using a subset of exogenous land transfers, we document that these transfers did not reduce conflict. If anything, they increased some types of conflicts for several months after implementation. The short run increase in conflict is consistent with two potential side effects of land reforms. First, land reforms can boost the collective action of beneficiaries. Second, poorly designed reforms can reduce the incomes of beneficiaries.

1. Introduction

Land reforms can have undoubted positive benefits on agricultural economies. They can reduce peasant underemployment, increase investment, and intensify the use of land (Lipton, 2009). However, land reforms, by creating very clear groups of winners and losers fighting over an immobile and illiquid asset, can also tear societies apart. This fact often severely limits the productivity-enhancing benefits of land reform (Mason, 1998; Albertus, 2021; Alston et al., 2000; Simmons, 2004).

In addition to its salience, land reforms are difficult to implement. Typically deployed by low-capacity states in agrarian economies, the potential for policy mistakes in land reform is high, while their deployment is often incomplete (Hirschman, 1963; Bardhan and Mookherjee, 2010; Albertus, 2015; Albertus and Popescu, 2020). Defective design and poor enforcement can increase conflict in the short run (Finkel et al., 2015; Finkel and Gehlbach, 2021; Alston et al. (2000)). Land reform can be connected to diffuse property rights, which are also associated with higher levels of conflict (de Janvry and Sadoulet, 2011; Lipton, 1993, 2009; Murphy and Rossi, 2016).

In this paper, we study land reform in 1930s Spain, one of the classic land reforms of interwar Europe. The historical assessment of Spain's land reform is almost overwhelmingly negative. Spanish reformers were ineffective at transferring land from the big landowners to the landless, while at the same time managed to fatally polarize Spain's rural areas leading to a civil war in 1936–1939 (Malefakis, 1970; Simpson and Carmona, 2020). According to this view, it was the glacial pace of land reform that brought

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the radicalization of the landless peasants, turning them into a revolutionary class. At the same time, the threat of expropriation pushed most landowners, including small- and medium-sized ones, towards rightist parties that were openly hostile to the democratic Republic.

Despite the centrality of land reform in the narrative of Spain's democratic breakdown, very few studies have tried to assess quantitatively the impacts of land reform on rural conflict. Domenech and Herreros (2017) studied conflict levels in a very unequal Southern region in Spain (Andalusia) in which land reform stalled. They found that rural conflict levels intensified around the time of the passing of land reform. At the same time, however, where land reform was deployed faster, there was a small reduction in rural conflicts.

This paper extends Domenech and Herreros (2017) to the case study of a region in which land reform was deployed quickly, the region of Extremadura (composed of two provinces, Badajoz and Cáceres). The legal means used to re-distributive lands were however idiosyncratic. Since it was obvious that the deployment of the September 1932 land reform law would take many months, if not years, the government passed several legal short cuts to give land to the landless peasants, especially land that was considered poorly or not intensively cultivated.

We analyze whether land re-distribution decreased rural conflict relative to a control group of untreated municipalities. We have collected data on recorded instances of rural conflict at the municipal level from April 1931 (start of the democratic period in Spain) to the beginning of the civil war (July 1936). This period includes two waves of land occupations, one more uneven in late 1932 and early 1933, and a more comprehensive one in March 1936.

We concentrate on the complete sequence of occupations starting in late 1932 and early 1933 and finishing in the Autumn of 1935. We exploit the fact that a majority of municipalities reported land occupations in 1936 to construct a group of treated municipalities with land occupations in 1933 and 1936 and a control group of municipalities with occupations only in 1936. In many municipalities, the government legalized previous land invasions. To guarantee exogeneity, we discard these municipalities, and we exploit the decision of the government prefect in the region (Luis Peña Novo) to extend land seizures to municipalities without a history of spontaneous land invasions. By performing an event-study analysis, we show that the prefect's land seizures were associated with an increase in certain types of conflicts, especially petty theft, attacks on landowners' assets, and strikes. This effect is particularly strong in the short run and weakens seven or eight quarters after the start of land occupations.

Our results speak to various literatures. Firstly, our work relates to the vast literature on property rights and conflict (González, 2012). The type of intervention discussed here created diffuse and contested property rights. Diffuse property rights have been linked to greater levels of conflict and violence (André and Platteau, 1998; Alston et al., 2000; Fenske, 2014; Castañeda-Dower and Pfütze, 2015, 2020; Fetzer and Marden, 2017).

Secondly, our results are related to the literature on the short- and long-run effects of agricultural reforms. This literature stresses the very negative effects of collectivist reforms as opposed to more individualistic reforms (Lin, 1990; Naumenko, 2021). In addition, land reforms have potentially serious disruptive impacts on rural capital and labor markets, reducing the incomes of poor peasants in the short run (Guinnane and Miller, 1997; Ramseyer, 2015). Here we focus on the short run effects of reforms.

Finally, our paper has implications for the historical literature on political regimes in interwar Europe. Luebbert (1991) considered that the message that land reform created more conflicts and fueled landless peasants' radicalism convinced family farmers to support the authoritarian Right in countries like Italy, Germany, or Spain. We find that reform is occasionally associated with short run increases in conflict. If short run bursts of conflict contributed to cement the counter-reform coalition, our findings would support Luebbert's thesis.

2. Historical background

2.1. Land reform in Spain

Sharp agrarian inequalities have characterized Spain's modern history (Malefakis, 1970; Díaz del Moral, 1973). In the 19th century, while land reforms, market forces, and structural change reduced agrarian inequalities in the North-Western European economies, Spain, like other Southern European economies, maintained high levels of inequality and widespread rural poverty, especially in the center and South-West of the country (Simpson and Carmona, 2020).

These sharp and long-lasting agrarian inequalities were the source of social conflict and violent demands for re-distribution. Since the 1880s, landless laborers turned to revolutionary ideologies, adopting Anarchism in the early 20th century and, later, Socialism (Díaz del Moral, 1973; Maurice, 1990; Kaplan, 1977). Rural laborers mobilized in 1903 and in 1918–1920 in intense strike waves demanding union recognition, which were finally crushed by the government. With an agricultural crisis in 1930 and 1931, peasant conflicts resurfaced in the South. In the autumn of 1931, a government elected by universal suffrage began to prepare a law of land reform which, after a prolonged debate in congress, was finally passed on September 1932. Spain was no different than other interwar European democracies passing land reform laws (Luebbert, 1991).

However, as argued by Malefakis (1970), land reform in Spain was to fail spectacularly in meeting the high hopes of the mass of landless peasants. The holdings of the grandee aristocratic families, which could be expropriated without compensation, were too limited to accommodate the approximately one million landless families. For the rest, the compensations to be paid to expropriated landowners delayed land reform. After the general election of November 1933, political support for land reform weakened. In the Autumn of 1934, the Republican government turned towards the Right, reversing land reform in 1935. The election of February 1936 elected a Popular Front government of Leftist parties, which gave a renewed push to land reform. Yet, in July 1936 a civil war

started thwarting all land reform plans. In rebel-controlled areas, landless peasants were repressed. In Republican-controlled areas, collectivization was the norm in many cases.

Under the land reform law of 1932, the government managed to settle 12,260 families on 118,837 ha between 1933 and 1935 (Robledo, 2022: 229), much less than it was anticipated. These meager results contrast with the quick advances made using alternative means like the temporary expropriations. The decree of intensification of cultivation of November 1932 and the decree of social uses of land passed by the Popular Front in March 1936 allowed for fixed-term seizures of land in exchange of a rental payment determined by the yearly income estimated by the Land Registry for each farm. These decrees justified seizures in municipalities with high rural unemployment and widespread poverty. Table A.1. in the on-line appendix underlines the key dates.

Under temporary occupation schemes, land reform made some progress. By using the 1932 decree, the government settled 40,000 families in around 120,000 ha. Similarly, the 1936 decree settled around 110,000 families in about half a million hectares between March and July 1936. Extremadura alone, the region studied in this paper, concentrated about 80% of settlers in 1933–35 and 70% in 1936. All in all, Republican governments managed to mobilize around 600,000 ha of land and settled almost 120,000 landless families. With an estimated census of landless families of almost one million, the Republican governments only settled permanently less than 1% of landless families and slightly above 10% using temporary occupation schemes.

2.2. Temporary occupations schemes in Extremadura

Extremadura is a landlocked region with special soil and climate characteristics and abundant land situated in the southwest of Spain. Given its poor soils and very low population density, dry farming was complemented with sheep and pig rearing. Land was cultivated in long four-year rotations, with much land used for purposes other than agriculture like pasture and trees, especially cork oaks. In these four-year rotations, each plot was used two years for pasture, one year it was left fallow, and cultivation in the fourth.

Most of the land was owned by large landowners. In Cáceres, the largest landowners controlled almost 60% of all land. In Badajoz, this proportion was 40% (Carrión, 1975). Furthermore, both provinces, especially Cáceres, had the largest concentrations of land owned by the Grandee aristocracy (Robledo, 2012).

In October 1932, the government passed a decree to intensify agriculture in Badajoz to alleviate rural unemployment (*Gaceta de Madrid*, October 23 1932, p. 522). Under this decree, suitable farms could be seized and given to landless peasants. After the passing of the decree, it was extended first to the provinces of Cáceres, Cádiz, Seville, Málaga and Granada and Cáceres and, later, to Toledo, Ciudad Real, Jaén and Salamanca.

Starting in the winter of 1932 and 1933, the initial settlement plans were expected to end by September 1934 (see table A.1 for the chronology of events). Initially, the Institute of Agrarian Reform (henceforth, IRA) focused the land occupations in the province of Badajoz, but the General Prefect for the region of Extremadura, Luis Peña Novo, quickly expanded the occupation schemes to municipalities in the province of Cáceres. The starting date of the settlements shows that these plots could not be immediately planted with wheat and suggests settlers occupied the plot left fallow in the 4- year rotations.[1] The first cereal harvest was supposed to be collected in the summer of 1934. Because they could not yield a high enough income in the short run, these settlements must have provided small increments in income: as chickpeas and watermelons could be sown and beneficiaries could receive wages in exchange for work performed in the plot. In addition, the settlers hoped settlements gave them the right to claim that plot in the future. In many spontaneous collective invasions, the leader would give a list of names (occasionally typed) to the police when the rural police chased them from the lands as a basis for future claims on expropriated lands (*El Debate*, January 28 1933, p. 5).

Pro-reform political parties lost the general election of November 1933. A more rightist government led by the Radical Party was formed. Although the group representing the interests of landowners was now stronger, land reform was not initially reversed, and the government started to expropriate the lands of Grandee aristocrats. A law passed on February 11 1934, guaranteed settlers could stay in the occupied fields until the first of August and suspended all judicial procedures against the settlers (*Gaceta de Madrid*, 47, February 16 1934, p. 1274–75). Another law passed on December 21 1934, allowed settlers to stay in the occupied farms until July 31 1934, (*Gaceta de Madrid*, 363, December 29 1934, p. 2540). It was not until August 1935 that a law would be passed derogating most of the pro-landless laws and decrees of 1932. In the autumn of 1935, those settled under the decrees of intensification were evicted (Carrión, 1973: 132). However, the evidence on this episode is surprisingly thin.

The Popular Front was a coalition of leftist parties and center-left republicans that won the general election of the February 16 1936,. With almost immediate effect, land reform and intensification of cultivation was back in the agenda. On March 3 1936, the so-called *Yuntero* decree was passed allowing evicted settlers to go back to the lands from which they had been evicted.[2] On March 20, the government passed a decree allowing the IRA to expropriate lands temporarily (*Gaceta de Madrid*, 88, 28th March 1936, p. 2470). As a result of these, a much wider wave of land occupations swept the municipalities of Extremadura starting on March 25 of 1936, settling 114,343 peasants on 573,190 ha (Malefakis, 1970, p. 378). The Civil War started roughly four months later.

2.3. Prefect Peña Novo's land occupations

We exploit the type of implementation to tease out the channels linking settlements with rural conflict. There were two very different types of temporary land occupations in Extremadura. Firstly, we have the occupations managed and financed by IRA. Typically, but not always, these followed previous land invasions and they are not the focus of this article.

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[1] On the timing of wheat sowing, *Boletín Oficial de la provincial de Cáceres*, January 23 1933, p. 2.

[2] *Yuntero* means owner of a yoke, typically for mules or oxen.
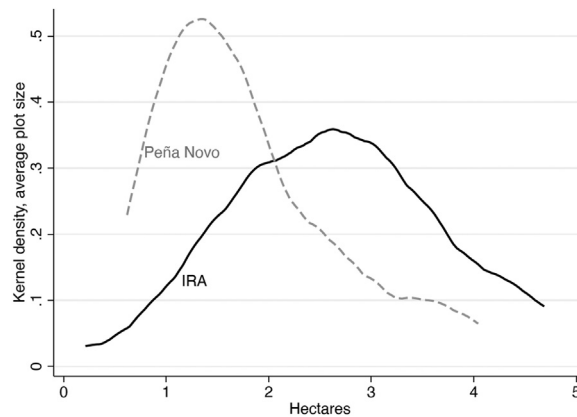
Fig. 1. Kernel density distributions of plot sizes in the IRA and Peña Novo settlements. This figure gives the kernel density functions of average plot size of settlements in municipalities by type of intervention (black: IRA intervention, solid: Prefect Peña Novo, dashed gray). Notes: observations have been trimmed to exclude the outliers.

In contrast, we focus on the land occupations initiated by the Prefect of Extremadura, Luis Peña Novo, in the province of Cáceres. In this case, the land occupations started a bit later, typically at the end of January 1933 (see Appendix C for the exact timing of the various types of settlements). Compared to the IRA, Peña Novo had more autonomy in selecting the settlements and his settlements did not typically follow previous land invasions. 25 out of 79 municipalities with IRA settlements had experienced collective invasions before the decree of intensification of cultivation was passed in November 1932. In contrast, of the 60 intervened by Peña Novo, only 6 had recorded previous land invasions.

In addition, the Peña Novo settlements were smaller and were deployed on worse land. As can be seen from Fig. 1, the average size of plots in the Peña Novo settlements was around 1.8 ha, while those of the IRA were 2.65.[3] To put these numbers into perspective, the mayor of Mérida (Badajoz) designed a plan to settle unemployed peasants on plots of roughly 6.4 ha (*El Socialista*, November 30 1932, p. 6).[4] The insufficient size of allocated plots strongly suggests that there were too many landless peasants in relation to the available land (Simpson and Carmona, 2017).[5] This problem was more acute in the Peña Novo settlements. Therefore, we should expect more conflicts in the Peña Novo settlements, especially in the case of Petty theft and Vandalism.

More importantly, the small size of plots suggests that Extremadura's land occupations were not designed to create independent family farms. In the initial meetings between Prefect Peña Novo, mayors, and landowners, it was agreed that the state would provide the settlers with the yokes and necessary equipment, seeds, and, critically, cash "in proportion to the tasks to be performed on the plot." This meant settlers were to receive 300 *pesetas* per plot in the first month of occupation and the rest corresponding to 75% of the value of the work done on the plot (*El Socialista*, December 22 1932, p. 6). Similarly, in the Mérida plan, settlers were to be paid a salary of 5 *pesetas* per day, on top of receiving the share of the harvest obtained.

Because many of the settlers were laborers under probably severely underfunded union-run *alojamiento* schemes, their vulnerability to changes in labor market conditions must have been high. An IRA agronomist discussed how in 1934 in the municipality of Trujillo (Cáceres) "Peña Novo settlers, as they are commonly known, have been relegated to the condition of rural laborers (Riesco, 2006, 270)." In 1934, another report informed that in Navalmoral de la Mata "the intensity of unemployment is worse than in January 1933, because neither tenants nor owners offer any lands to rural laborers (Riesco, 2006, 270)."

3. Rural conflict in Extremadura and potential impacts of land reform

3.1. Rural conflict in Extremadura

As in many other agrarian societies, access to landownership stratified rural society in various categories within a rigid social and economic hierarchy. At the top were the wealthiest owners of land who in some cases were absentee owners. In the latter cases, there was typically a middleman on a long-term tenancy contract managing the farm, sub-letting part of the farm and managing the rest with a combination of permanent workers and temporary rural laborers. Medium- and small-landowners of land belonged to the next layer. Next, there were tenants, who had the skills to run a family farm, some of whom might have been small owners in the past forced to sell lands in some critical year. Finally, rural laborers represented the poorest stratum of society. Rural laborers were employed in periods of peak demand, especially during the wheat harvest in June (only males) and the olive harvest in December

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[3] We exclude municipalities with less than 1000 ha of affected farms and outliers in which the ratio of affected to expropriated is above 2 (typical of smaller municipalities).

[4] He referred to 10 *fanegas* or more.

[5] The efficient size for a family farm in Extremadura was at least 10 ha (Simpson and Carmona, 2017).

and January (which could include women) and suffered very prolonged periods of seasonal unemployment. This group tended to unionize in spurts like in 1903-05, 1918-20 or 1931-32.

We lack a granular occupational census allowing us to trace the size and evolution over time of the different groups of peasants. The Peasant Census compiled by the Republican government was an attempt to measure its size. According to this source, in Badajoz (702,418 inhabitants in 1930) there were 48,267 male household heads who were rural laborers and 15,978 who were tenants. In Cáceres (448,825 inhabitants in 1930), 25,135 household heads were rural laborers and 11,826 were tenants. In these two provinces, 21% of municipalities lacked data.

In the case of rural laborers, conflict followed seasonal changes in labor demand (Domenech, 2013). Demand for rural laborers peaked in June-July for the wheat harvest and in December-January for the olive harvest. The bargaining power of rural laborers and, therefore, conflicts were at its highest in periods of high labor demand, collapsing thereafter.

In this context, labor was abundant, wages were low, and agricultural techniques were very labor intensive, with most harvesting work still being done manually. However, by the 1920s and 1930s, the benefits of mechanization were large, especially in the largest estates. In strikes, especially since the 1920s, the use of harvesting and thresher machines was one of the most contentious issues in strikes: unions tried to limit the use of machinery to maximize the number of days of work in the summer (up to 50). Facing a falling demand due to mechanization, rural unions tried to enforce the exclusion of non-local workers in local labor markets (for example, *Nuevo Día*, July 18 1931, p. 4).

Outside periods of peak demand, there were also other conflicts. In periods of low employment, poor peasants had to resort to picking wood, fruits or making charcoal, often in forests or lands belonging to the largest owners of land. When and where these practices were tolerated depended on many factors. Many conflicts had to do with different interpretations of what the landless could do in lands that used to be communal or municipal that had been privatized in the 19th century. Owners in many cases tolerated trespassers in their lands as a safety net for the poorest families. However, in a context of increasing polarization, the tolerance of landowners towards these practices probably deteriorated.

Because capital markets were underdeveloped, "*alojamientos*" were also a central element of the management of the highly seasonal economy of Southern Spain. According to this practice, when the landless were hired as "*alojados*", large estates would pay unemployed laborers a wage (typically well below the harvesting wage) to perform small, probably unnecessary, tasks in the farm. "*Alojamientos*" were still widely used in Andalusia during the crisis of 1930–31 (Ministerio de Trabajo y Previsión, 1931). In the period studied here, "*alojamientos*" appear associated with various conflicts (for example, *El Debate*, February 7 1933, p. 4). Interestingly, landowners preferred temporary expropriations under the decree of intensification to the practice of *alojamientos* (*El Debate*, February 15 1933, p. 5).

Land uses were another line of conflict. Extremadura had a comparative advantage in sheep and pig rearing. Both activities used land intensively and did not require much labor. The interests of the landowners for pasture clashed with the needs of the local pool of underemployed workers. The First World War broke the equilibrium between pastoral and agrarian uses of land. During the war, high wheat prices gave strong incentives to increase agrarian uses at the expense of pastoral, causing a short run increase in the demand for labor. It is probably for this reason that problems of underemployment and unemployment were more acute in the 1930s. Occasionally, landless laborers cut trees to clear land for agriculture (more labor intensive). For example, landowners deplored the traditional "enmity against trees" of poor peasants in Cáceres (ABC, July 29 1933, p. 32).

3.2. Expected effects of temporary expropriations on conflict in Extremadura

We have collected monthly data on social conflicts at the municipality level. The main original sources are García Pérez (1982) and Méndez Mellado (2015), who compiled the counts of conflict events from newspapers and Spanish Ministry of Interior (generally, communications on conflicts sent by the prefect of each province to the ministry), grouping conflicts following the categorization of conflicts used at the time (sources are listed in Appendix B). We complement García Pérez (1982) with Boolean searches in digitized contemporary newspapers. It is important to stress that all included conflicts involve groups of peasants, typically landless. We have not collected data on conflicts and crimes involving only one or few people. Even though some of the conflicts are self-explanatory, we briefly define them below.

Land invasions: counts of land invasions and land occupations, typically involving ploughing, clearing land or preparatory tasks on fallow land.[6]

Strikes: number of strikes exclusively organized by peasant unions or general strikes in which peasants participate.[7]

Violent clashes: includes all events related to local protests (not strikes), riots, and clashes with the rural police (Guardia Civil).[8]

Theft: collective acts of theft of fruits (frequently acorns, also olives), harvested wheat, and/or animals like pigs.[9]

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[6] This category combines "Invasiones de Fincas" and "Roturaciones arbitrarias" in Méndez Mellado (2015) and "Roturar arbitrariamente" typically, but also "Trabajar sin permiso", "Repartirse terrenos" and "Asalto de fincas" in García Pérez (1982).

[7] In strikes, the peasant general strike of June 1934 is the one for which it was more difficult to find data. In the case of the Badajoz municipalities, we use arrests of peasants during the general strike of June 1934 reported to complement the information for Badajoz (Méndez Mellado, 2015, p. 450). We assume there was a peasant strike in the municipality if at least one peasant was arrested. For Cáceres, we use *Boletín Oficial de la Provincia de Cáceres*, 257, November 1 1934, p.1 which gives a list of municipalities participating in the strike.

[8] We include "Alteraciones del orden", "Manifestaciones y desmanes" and "Choques con la Guardia Civil".

[9] "Robos y hurtos", "Robo frutos (bellotas)", "Robo animales", and "Robo mieses".

Vandalism: includes all the attacks on machinery, trees, and draft animals.[10]

In addition, as an aggregate measure of rural conflict at the municipal level, we take the first principal component of strikes, violence, theft, and vandalism.

We now describe how we expect temporary land occupations to affect conflict. Theoretically, there is no consensus on the overall effects of redistributive policies on conflict. In most models of political transitions (Acemoglu, 2006; Boix, 2008; Collier, 2004), the poor fight to obtain redistribution because their opportunity cost of violence is very low. In these situations, a land reform, by redistributing resources towards the poor, should appease them by increasing the opportunity cost of engaging in violence, crime, or conflict (Fishback et al., 2010; Jha, 2019; Fetzer 2020).

However, many factors can lead to greater conflict during the implementation of land reform. A first one is that low-capacity and poorly informed governments must rely on local grassroot organizations to deploy reforms. Typically, the temporary settlements in Badajoz and Cáceres were organized by unions on the ground. Government reliance on local unions boosts the latter collective action and organizational resources and it also gives incentives to use protest and violence to catch the attention of reformers (Dasgupta et al., 2017; González and Vial, 2021). By empowering local unions, land reform could cement the collective action of landless peasants, potentially increasing mobilization and conflict in the short run, although with stronger unions conflict should fall in the medium- to long-run. All in all, the conflict-reducing effects of re-distribution can be counterbalanced by its collective action-enhancing effects, meaning the overall effect on conflict will depend on which of the opposing effects is larger.

In addition, temporary expropriations created a volatile situation with poorly defined property rights. Under the decree of intensification, the duration of the usufruct rights of settlers depended on the preferences of the government, first allocating those rights, then revoking them in 1935. In some cases, owners of land responded to temporary expropriations with a lawsuit. Despite these conflicts, rental payments to landowners seem to have been honored in general (Riesco, 2006, pp. 160-161). Poorly defined property rights could have been connected to an increase in some types of conflicts in the short- and medium-run if the rights of what could be done or not done on farms were not well specified. These conflicting rights should have affected petty theft and damages done to trees or harvests.

Traditionally controlled by the largest landowners, land expropriations also disrupt rural capital and labor markets, sometimes severely (Guinnane, 1997; Ramseyer, 2015). In addition, settlements on marginal land or the defective design of settlements can reduce incomes in the short run. A testimony of *asentados* in Olivenza (Badajoz) gives the flavor (Espinosa, 2007, p. 101):

"We have 120 *fanegas* sown, we have very little credit for all the work we have put in this. We are going through a bad period. The mules are emaciated, (…), like us. We would like to leave the farm and look for paid work elsewhere, but jobs are nowhere to be found, there is a scarcity of jobs, and these jobs are even scarcer for us because landowners hate land reform."[11]

This quote suggests that settlements produced very meager incomes and that capital and labor markets were disrupted. These settlers complained about the insufficient credit, while at the same time noting that they could not find work elsewhere. If settlements cause negative income and consumption shocks, conflict can increase in response to settlements, especially conflict related to survival strategies like gleaning and forms of petty theft.

All in all, we expect land occupations to reduce conflicts in the medium- to long-run. However, reformers typically rely on local peasant unions to deploy land reform, boosting collective action. In addition, the defective design of settlements can impact rural institutions and factor markets in unexpected ways, in some cases reducing the incomes and consumption of the beneficiaries. As a result, conflicts can go up in the short run as land reform is deployed. The short run increase in strikes and violent clashes would reflect a collective action effect, whereas the increase in petty theft and attacks to landowner assets (or vandalism) would capture the effect coming from negative income and consumption shocks and poorly defined property rights.

### 3.3. Selection into treatment

Our empirical strategy exploits the fact that the settlement plans of 1932-3 were decided upon in a very short period of time with very limited resources and small numbers of technical personnel. For example, Peña Novo counted with 12 agronomists to deploy settlements in the province of Cáceres (Riesco, 2005: 191). Only the settlers in legalized settlements were allowed to stay. Spontaneous invasions not included in the settlement plans were repressed by the police and invaders were chased from the invaded lands by the police (for example, *Nuevo Día,* October 30 1931, p. 8; *Nuevo Día,* December 14 1931, p. 8; BOP Cáceres, 28 January 1933, p. 1). Fig. 2 gives the spatial variation in the settlement plans.

For the treated municipalities, we create an initial control group. Landless peasants not included in the first wave of settlements had reasons to feel frustrated (Domenech and Herreros, 2017). Most municipalities in Extremadura participated in the occupations of land in 1936, therefore the landless peasants in municipalities included in the 1936 wave but not in the 1933 wave are considered the "eligible non-beneficiaries". The comparison between eligible beneficiary and eligible non-beneficiary municipalities is at the core of our empirical strategy.

We analyze the determinants of each type of intervention more carefully. Domenech and Martinelli (2021) argued that IRA interventions legalized existing invasions, especially in the province of Badajoz, whereas the intervention of prefect Peña Novo combined the objective of combatting rural unemployment and extending land reform. Table D.1 in the Appendix, shows that selected municipalities in both types of intervention were characterized by having abundant expropriable land, greater peasant unionization, and

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[10] "Destrozos" and "Destrozos de máquinas".

[11] A *"Fanega"* is a traditional measure referring to what oxen could plough in a day. In Extremadura, one *fanega* was akin to 6,400 square meters.
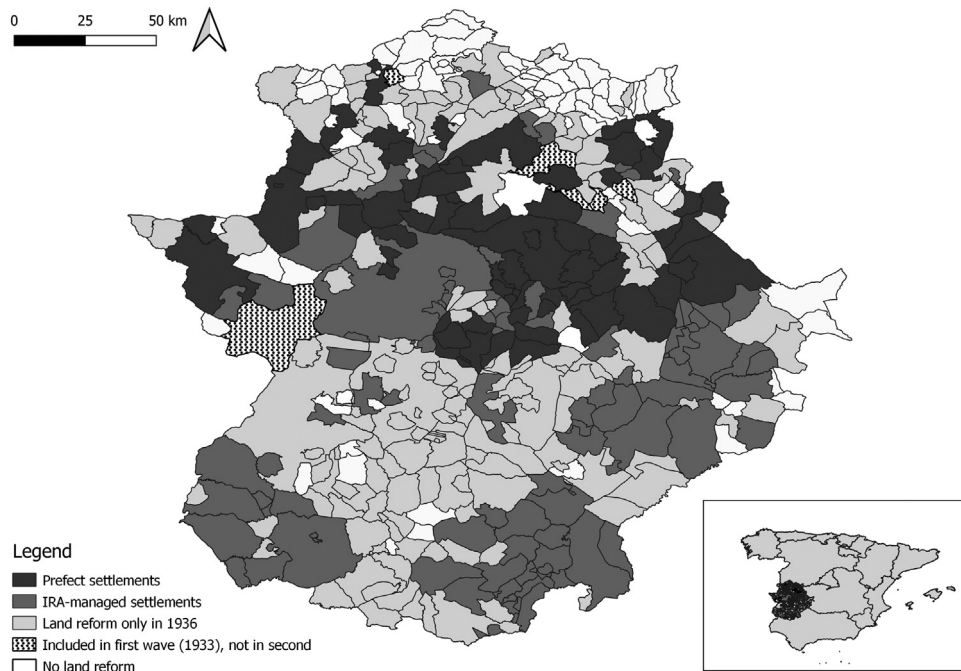
Fig. 2. Map of 1932–1933 settlements in Extremadura. This map displays the spatial variation in the treatment variable. Treated municipalities shaded in dark gray. Control municipalities are shaded in lighter gray. Municipalities shaded in white are the municipalities without reform in the two waves (1933 and 1936). The map also shows the position of Extremadura in Spain.

having higher land reform thresholds, which was correlated with the presence of lower quality lands. In the case of IRA interventions, previous invasions are a critical trigger of settlements. In contrast, Peña Novo settlements did not follow previous invasions. Since IRA settlements mostly legalized previous land occupations, it is difficult to tease out the effect of IRA settlements from pre-existing conflict trends in these municipalities. Therefore, we exclude IRA-managed settlements from the analysis and concentrate only on the settlements ordained by Peña Novo.[12] There could be unobserved characteristics driving the Peña Novo decision which might also be correlated with the conflict trends. However, in most cases, Peña Novo targeted the municipalities with the largest tracts of land affected by land reform, which were typically of lower quality.

In Appendix C, we discuss the different time windows for each of the interventions. We document that the Peña Novo interventions started in late January 1933. We therefore consider the first quarter of 1933 the cut-off between the pre-treatment and the treatment periods.

3.4. Matching

Given that the presence of Peña Novo settlements in a municipality is correlated with various municipality characteristics, it is necessary to use statistical methods to guarantee that the treatment is as exogenous as possible. For this reason, we match the treated municipalities with a control group of untreated municipalities with similar characteristics. All the untreated municipalities had land occupations in March 1936. Landless peasants in these municipalities were therefore eligible non-beneficiaries in 1933. We define a treated municipality as having at least one land occupation under Prefect Peña Novo in the first quarter of 1933.

To balance the observed covariates, we use nearest-neighbor matching. We match on the following observable variables: population in 1930, the area covered by land reform-affected farms, the percentage vote to the Republican-Socialist coalition in the general election of June 1931, the percentage of unionized peasants in the population, the percentage of laborers among landless peasants, landownership inequality (proxied by the proportion of the area of the municipality taken by farms affected by the land reform law of September 1932), and the average land reform farm threshold established by the IRA in each municipality. We trim the observations to guarantee common support and balancedness. We eliminate all municipalities below 1000 and above 15,000 inhabitants. We also exclude all municipalities with more than 10,000 ha or less than 500 of land affected by land reform that are impossible to match to untreated municipalities. As a result, the group of Peña Novo-treated municipalities contracts from 60 to 23 municipalities. Sources for these variables are listed in Appendix B. The original dataset and the replication code for the matching exercise can be found in Domènech (2023).

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[12] As a comparison, we provide event study regressions for IRA settlements in Appendix F.

Table 1

t-tests on mean differences between Peña Novo treated municipalities and control group (matched). The table gives the means of the main observed characteristics of municipalities by treatment status. This comparison excluded the municipalities with settlements under IRA management. "Population in 1930" is the population in the municipality according to the 1930 Population Census, "Affected Area, hectares" is the total area taken by farms affected by land reforms. "Aristocratic land, hectares" is the total area of farms affected by land reform owned by Grandee aristocrats (*Grandes de España*). "Landownership inequality" is the percentage share of large farms in the total municipal area. "% Unionized peasants" is the percentage share of members of peasant unions in the total population in October 1931. "Dummy anarchist" is a dummy variable taking value 1 if there was a branch of the anarchist National Confederation of Labor in the municipality and 0 otherwise. "% Vote Rep-PSOE, 1931" is the percentage share of votes going to the Republican-Socialist coalition in the June 1931 general election. "% Laborers" is the percentage of rural laborers in the Peasant Census. "Previous invasions" is the count of invasions up to November 1932. "Land reform threshold" is the farm threshold chosen by the IRA, the lowest threshold is 300 ha and the highest is 600.

	Without settlements (1) $N = 59$	With settlements (2) $N = 23$	Difference (1)-(2)
Population in 1930	2907.119	2460.696	446.423
	(249.295)	(318.487)	(446.551)
Affected area	2534.593	3515.565	-980.972
(hectares)	(301.173)	(547.056)	(590.623)
Aristocratic area	273.678	617.739	-344.061
(hectares)	(149.779)	(358.401)	(327.232)
Landownership inequality	31.246	43.725	-12.479
	(2.812)	(7.634)	(6.536)
% Unionized peasants	2.051	2.554	-0.050
	(0.067)	(1.027)	(0.012)
Dummy anarchist	0.102	0.087	0.015
	(0.040)	(0.061)	(0.074)
% Vote Rep-PSOE, 1931	60.678	48.229	12.448*
	(3.641)	(6.326)	(0.070)
% Laborers	53.722	45.712	8.100
	(2.603)	(4.047)	(4.876)
Land reform threshold	411.017	577.174	-166.157***
	(16.969)	(12.064)	(28.282)
Previous invasions	0.107	0.087	0.015
	(0.040)	(0.060)	(0.074)

Notes:

Standard errors in parentheses.

* $p<0.10$,

** $p<0.05$,

*** $p<0.01$.

In Table D.2 in the Appendix, we display the raw differences without matching, considering each type of treated municipality (Peña Novo or IRA) against the full set of untreated municipalities (all the municipalities in the region not having land reform in 1933, but having land reform in 1936). We compare the Peña Novo-treated municipalities against the non-treated municipalities in Panel A.

The mean comparisons in the full sample confirm what we discussed when analyzing the determinants of settlements. Peña Novo municipalities have on average more non-aristocratic land affected by land reform, with a statistically significant difference of about 3800 ha favoring the treated municipalities, as well as more expropriable land owned by Grandee aristocrats (a difference of about 800 ha). Both treated and untreated units have very high levels of inequality but treated municipalities have almost double the inequality of the untreated (different significant at the 1% level). In addition, collective action and leftist political preferences are stronger in the Peña Novo treated municipalities. There is a smaller percentage of votes going to the Republican-Socialist coalition in the June 1931 general election.

In Table 1, we compare the balance on the same observed variables after matching. The differences in most observed variables are reduced significantly in the matched sample compared to the mean comparisons using the full set of municipalities. Even though we have excluded municipalities with more than 10,000 ha of lands affected by land reform, the matching algorithm is not able to reduce these differences to zero. However, the difference is smaller and it is statistically insignificant: the raw difference was almost 4000 ha, in the matched sample it is less than 1000 ha. In the case of aristocratic land, the difference in the unmatched sample was 826 ha. After matching, this difference now falls to 344 ha and the difference is not significant.

The differences in other observed characteristics persist, but they are smaller and not significant. For example, in the case of unionization, matching reduces the differences in unionization between the Peña Novo municipalities and the non-treated group. Considering local agrarian inequality, the treated and control units are now more balanced, even though the treated units are still more unequal, and the difference is not statistically significant. There are also insignificant differences in the case of previous invasions.

The differences in the case of the percentage vote going to the Republican-Socialist party are a special case. In the raw comparison, the percentage vote was about 4% lower in the Peña Novo municipalities relative to the non-treated municipalities. After matching, however, the difference increases to more than 12 percentage points in favor of the non-treated municipalities vis-à-vis the Peña

Novo-treated municipalities, in the latter case the difference being significant at the 10% level. To a large extent this has to do with the re-organization of municipalities after matching. In the province of Badajoz, the Leftist Republican-Socialist coalition included the Radical Republican Party. In contrast, the Peña Novo treated observations are mostly in the province of Cáceres. There, the Republican-Socialist coalition excluded the Radical Republican Party, which decided to compete in a more rightist coalition in that province. Because the parties with the strongest following in the election of 1931 were the Spanish Socialist Party and the Radical Republican Party, re-arranging the observations between the two provinces creates these wider differences after matching. The main reason is that the matching algorithm selects more control pairs in the province of Badajoz than in the province of Cáceres (the Peña Novo treated units in the province of Cáceres are more similar to non-treated municipalities in Badajoz than to non-treated municipalities in Cáceres).

Something similar happens in the case of land reform thresholds, the difference in the comparison increases from 133 ha to 166 and the difference is statistically significant at the 1% level. Because the algorithm finds more matches in the province of Badajoz, which had lower thresholds, matching increases the differences in farm thresholds.

In both cases, we think these variables can affect the level of conflicts, which we will capture with fixed effects. Arguably, they do not affect the trends in conflicts. Therefore, we consider the matching exercise valid.

3.5. Empirical strategy

We use an event-study design to capture the effect of intensification settlements ordained by Prefect Peña Novo on rural conflict in the two provinces. Since reported conflicts are rare events, we collapse the count of conflicts recorded each month into quarters and we estimate the following regression with clustered standard errors at the municipality level:

$$C_{i,q} = \sum_{q=-n}^{m} \beta_q \cdot D_{i,q} + \delta_i + \lambda_q + \varepsilon_{i,q} \tag{1}$$

where $C_{i,q}$ is the number of rural conflicts in municipality i in quarter q (19 quarters in total). We will run separate regressions for each conflict (invasions, strikes, violent clashes, theft, and vandalism) and the first principal component of all conflicts. $D_{i,q}$ is a set of indicators for the quarters before and after the treatment when the municipality i is treated. δ_i is the municipality fixed effect and λ_q is the quarter fixed effect. $\varepsilon_{i,q}$ represents the error term. We follow the qualitative evidence and force all the treated municipalities to start the treatment period in the first quarter of 1933. As a reminder, we define treated municipality as a municipality which experienced a Peña Novo settlement.

The omitted indicator D_{-2} captures the baseline difference in conflicts between treated and control municipalities in two quarters before treatment ($q=-2$). We choose this quarter (third quarter of 1932) because this is the time of the passing of the landmark land reform law. The main coefficient of interest is β_q which gives the change in conflicts in each of the quarters before and after treatment relative to the difference in conflicts between treated and control units in the chosen base period. β_{-n} to β_{-3} are the measure of the differential pre-trend. β_0 to β_m represent the change in conflicts in the treated units relative to the control units, both expressed in relation to the difference between treated and control units in the reference period q_{-2}. Significant β_0 to β_m coefficients mean the trend in the dependent variable in the treatment period for the treated units is different than the trend in the control units. If the parallel trends assumption holds, β_0 to β_m can be interpreted as a causal effect.

The event study regressions require estimating a large number of coefficients. To summarize the rich information of the event study regressions, we also use a more traditional differences-in-differences (DiD), before and after comparison, by estimating the following 2×2 DiD equation. We impose that all coefficients before the event are zero (i.e., β_{-7} to β_{-1}, in Eq. (1)). This specification does not capture more complex patterns of change in the variable conflicts before and after treatment, but it provides a simpler specification that summarizes all the complex temporal patterns into a before and after comparison.

$$C_{i,T} = \beta \cdot D_{i,T} + \delta_i + \lambda_T + \varepsilon_{i,T} \tag{2}$$

where $C_{i,T}$ represents the dependent variable (count of conflicts) in each municipality i in the pre-treatment ($T = 0$) and the treatment period ($T = 1$). $D_{i,T}$ is an indicator variable taking value 1 in the treated municipalities in the treatment period (when $T = 1$) and 0 otherwise. δ_i are municipality fixed effects, λ_T captures the average increase in conflicts in the treatment period for the control municipalities, and $\varepsilon_{i,T}$ is the error term. As in Eq. (1), we cluster standard errors at the municipality level. The code for regressions using Eqs. (1) and (2) can be found online in Domènech (2023).

4. Main results

4.1. Event-study regressions

Fig. 3 displays the β_q coefficients capturing the pre-trends and treatment effects of the Peña Novo land occupations. We display the six sets of β_q coefficients obtained when regressing Eq. (1) using the different conflicts as dependent variables, first land invasions (Invasions), then peasant strikes (Strikes), violent clashes (Violence), petty theft (Theft), attacks to landowners' assets (Vandalism), and, lastly, the first principal component. Table E.1 in the Appendix reproduces the full set of coefficients included in Eq. (1).

We first examine the effects on land invasions coefficients β_{-7} to β_{-3} in Fig. 3 show that there were no different pre-trends in the treated and control groups before the deployment of temporary expropriations. The coefficients β_0 to β_2 correspond to the initial
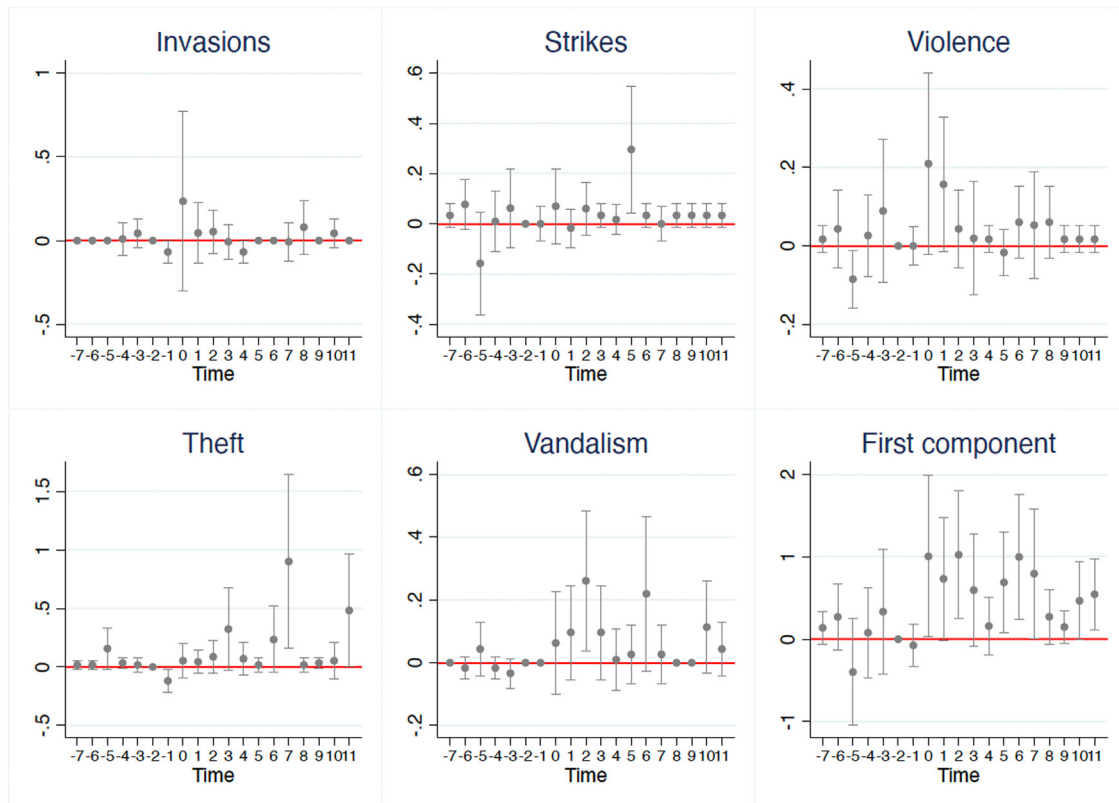
Fig. 3. Conflicts and Peña Novo temporary expropriations. These graphs plot the β_q coefficients from Eq. (1) by type of conflict. OLS coefficients are reported. The dependent variable is equal to the number of conflicts in municipality i in quarter t. Point estimates for β_q in Eq. (1) with their 95% confidence intervals. q runs from the second quarter of 1931 to the last quarter of 1935. A total of 19 quarters. The base period is $q=-2$, corresponding to the 3rd quarter of 1932 (July-August-September 1932). The treatment period goes from $q = 0$ (January-February-March 1933) to $q = 11$ (last quarter of 1935). Regressions are performed on the matched sample. Underlying coefficients for this graph are displayed in Table F.2 in the Appendix.

phase of deployment. β_0 is particularly large compared to the rest, but it is not statistically significant. After $q = 2$, the coefficients are small and non-significant.

In the case of the other conflicts, we find some positive effects. Peasant strikes do not have different trends between the treated and the control group in the pre-treatment period. We find some positive and negative coefficients, but they are not statistically significant. Most of the β coefficients corresponding to the treatment period are small, typically positive, and non-significant. β_5 is an important exception. In this case, we find a large and positive effect that is statistically significant. This coefficient shows there was a much higher increase in the probability of participating in the general strike of June 1934 in the treated municipalities than in the control municipalities. Compared to the mean number of strikes in the control municipalities, the estimated coefficient is associated with an increase in strikes in that quarter of 75%. In this case, the Peña Novo intervention seems to have boosted the collective action capacity of peasants. This push died down when peasant unions and leftist organizations were repressed after the general strike.

We next turn to the effect on violent clashes. There was no different trend with respect to the control group in the pre-treatment period, yet violence exploded in the first two quarters of the treatment period and then slowed down. In particular, the coefficients for the first two periods were large, $\beta_0=0.210$ and $\beta_1 = 0.157$, and mildly significant (10%). Compared to the mean number of violence events in the control municipalities in the first quarter of implementation, the estimated coefficient means these conflicts increased by more than 300% in the treated municipalities relative to the control municipalities. In the second quarter of implementation, the estimated coefficient represents an increase of 464% relative to average number of conflicts in the control municipalities in the same period. Seven quarters after the start of occupations, the coefficients are still positive but much closer to zero.

For the case of theft, we find that the coefficients of the pre-treatment period are very small and not significant, except in two cases. The coefficient β_{-5} corresponding to the last quarter of 1931 is positive and significant at the 10% level. The point estimate is 0.157. However, we also retrieve a negative β_{-1} coefficient of -0.119 (p-value = 0.018), corresponding to the last quarter of 1932. There was no obvious different pre-treatment trend in thefts in the treated municipalities relative to the control municipalities. For the period after treatment, we obtain several large β coefficients for the last quarters of 1933, 1934 and 1935 (β_3, β_7 and β_{11}). The point estimates are much larger than the positive, significant β_{-5} coefficient we found (0.157). For example, β_7 is 0.901 (p-value=0.018)

Table 2
Differences-in-differences regressions, matched sample, Peña Novo intervention. The table gives the main coefficients of regressions based in Eq. (2). "$T = 1$" corresponds to the λ_T coefficient in Eq. (2). "$T = 1 \times$ Peña Novo $= 1$" is the β_T coefficient in Eq. (2) capturing the treatment effect of Prefect Peña Novo's intervention. Regressions are performed on the matched sample of municipalities.

	(1) Invasions	(2) Strikes	(3) Clashes	(4) Theft	(5) Attacks	(6) 1st principal component
$T = 1$	−0.067***	−0.030*	−0.025*	0.025	0.005	-0.115
	(0.020)	(0.016)	(0.014)	(0.020)	(0.009)	(0.077)
$T = 1 \times$ Peña Novo $= 1$	−0.015	0.039*	0.003	0.184***	0.076**	0.415***
	(0.037)	(0.021)	(0.022)	(0.059)	(0.033)	(0.130)
Municipality FEs	yes	yes	yes	yes	yes	yes
Clustered standard errors	yes	yes	yes	yes	yes	yes
N	1558	1558	1558	1558	1558	1558
Municipalities	82	82	82	82	82	82

Notes:
Clustered standard errors in parentheses (clustered at the municipality level).
* $p<0.10$,
** $p<0.05$,
*** $p<0.01$.

and β_{11} is 0.482 (p-value=0.049). With respect to the mean of theft cases in the control municipalities in the same quarter (0.220), β_7 represents an increase of more than 400%, while β_{11} brings about an increase of almost 240% (mean number of conflicts in the control municipalities is 0.203).

In the case of vandalism, the trend in conflicts in the treated municipalities deviates from the trend of the control municipalities. All the pre-treatment βs are negative, small, and non-significant. However, several βs corresponding to the treatment period are positive and large, especially β_2 and β_6 corresponding to the third quarter of 1933 and of 1934. For example, compared to the mean of this category of conflicts in the control municipalities in the same period (0.085), β_6 (point estimate is 0.220) increases conflicts by 353%. These increases could reflect damages to threshing machines in attempts to extend days of work in the summer.

Finally, in the regressions using the first principal component as dependent variable, all the coefficients before the treatment are small and non-significant. In the treatment period (starting at $q = 0$) they are all positive, often large, and almost always statistically significant. The Peña Novo interventions were connected to an increase in the first principal component of conflicts. Conflict was highest in the initial periods of deployment, declining thereafter, although occasionally intensifying in some specific quarters.

The trends in conflicts in the case of the Peña Novo settlements seem to follow the prediction that conflict after land reform first increases and then stabilizes. However, we do not obtain any significant negative coefficients corresponding to several months after the sanctioning of settlements. Although the differential trend was closer to the trend of the control group, the point estimates of β_q are still positive after the initial months of deployment. We can only speculate about why there was no moderation in conflicts, but uncertainty about the status of settlers during most of 1934 and especially in 1935 could explain the persistence of a higher trend in conflicts. In the Autumn of 1935, settlers were evicted, which might have generated potential situations of conflict. This is not apparent in the case of violence, but Theft and Vandalism increased in the last two quarters of 1935.

Since the matching algorithm eliminates many municipalities, we show that our quantitative results do not depend on using different subsets of municipalities in Appendix G.

4.2. Results differences-in-differences

We use the same sample with the Peña Novo treated and the control municipalities to estimate Eq. (2). Table 2 reports the main coefficients. As can be seen from the table, the mostly positive and significant coefficients are consistent with the event study results. This is the case for the regressions using strikes, theft, attacks, and the first principal component as dependent variable. The size of these coefficients is not large, but, given that conflict in Extremadura was very seasonal, these coefficients average the quarters in which conflict peaked and those in which it was almost zero. The β coefficient for strikes is positive, significant, and small, in line with the effects we found for strikes in the event study exercise. There is a large coefficient for Theft, meaning that in the Peña Novo municipalities there were 0.184 more theft episodes in each quarter of the year or almost an extra 2.5 episodes of theft in the treatment period relative to the control group.[13] With respect to the mean of theft episodes in the control group in the treatment period (0.069), the estimated coefficient (point estimate of 0.184) predicts an increase of 302% in theft conflicts. In regressions using Vandalism (Attacks) as dependent variable, we also get a positive β coefficient, statistically significant. Relative to the mean number

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[13] The number of conflicts is small because we only focus on collective conflicts. In this case, these are situations in which local landless peasants would enter a large estate to pick up acorns or olives.
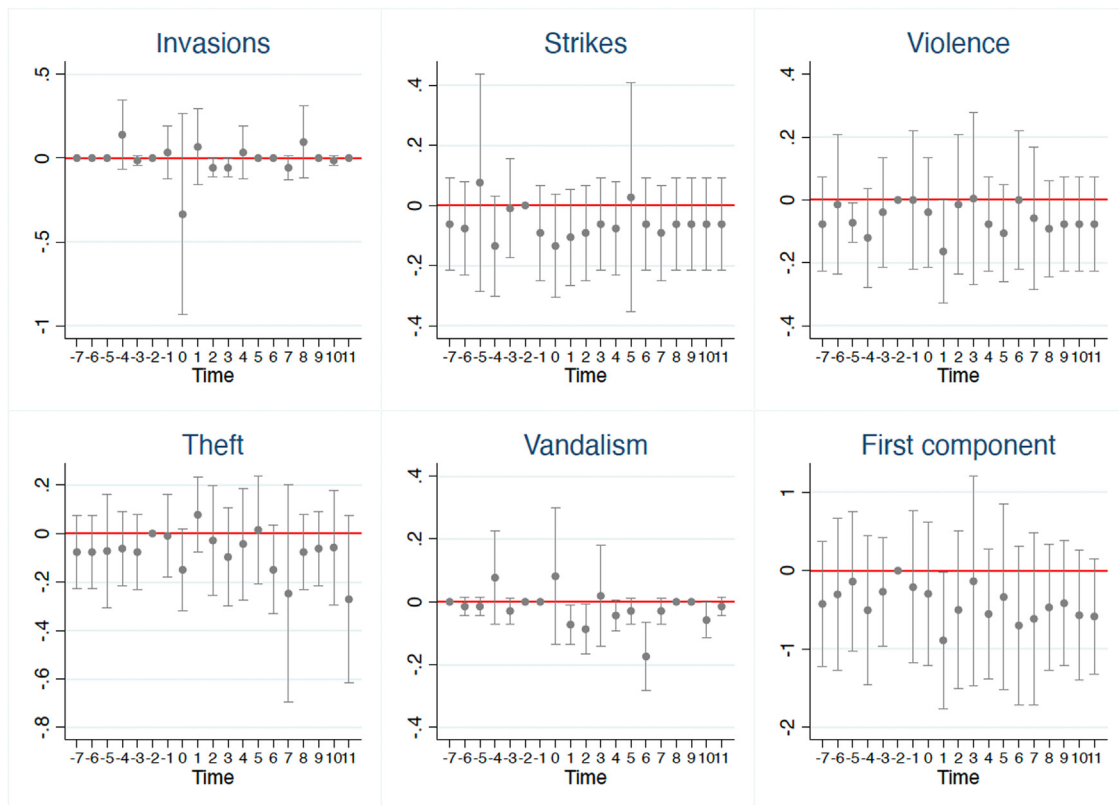
Fig. 4. Presence of aristocratic property and conflicts. These graphs plot the β_q coefficients from Eq. (1) by type of conflict. In this case, however, the "treatment variable" is the presence of Grandee aristocratic property irrespective of the treatment status of the municipalities. The coefficient reflects the effect of the interaction between the dummy for presence of Grandee aristocrats and the dummies for quarters. OLS coefficient estimates are reported. The dependent variable is equal to the number of conflicts in municipality i and quarter t. the graphs display the point estimates for β_q in Eq. (1) with their 95% confidence intervals. q runs from the second quarter of 1931 to the last quarter of 1935. A total of 19 quarters. The base period is $q=-2$, corresponding to the 3rd quarter of 1932 (July-August-September 1932). The treatment period goes from $q = 0$ (January-February-March 1933) to $q = 11$ (last quarter of 1935). Regressions are performed on the matched sample.

of conflicts in the control municipalities in the treatment period (0.022), the coefficient (point estimate of 0.076) predicts an increase of 345%. Finally, there is a positive, larger coefficient for the regressions using the first principal component of all conflicts, showing that the different types of conflicts were correlated in the more conflict-prone treated municipalities.

4.3. Aristocratic property

The βs in Fig. 4 and Table 2 represent the effect of the Peña Novo settlements on rural conflicts. One concern is that, since Peña Novo settlements targeted often, but not only, farms owned by Grandee aristocracy, our results could reflect the conflict between landless peasants and the Grandee aristocracy. Using the matched sample, we re-estimate Eq. (1) but now using a dummy capturing the presence of Grandee owners as treatment variable in a placebo test. As can be seen in Fig. 4, the presence of aristocratic landowners was not connected to the rise in conflicts. None of the estimated β_q coefficients from $q = 0$ onwards is significantly different from zero: most of the coefficients are close to zero and some are even negative. We also fail to uncover any trend before the treatment period.

To complement our previous argument, we use Eq. (2) to analyze the intensive margin of aristocratic presence. We compute the share of aristocratic property in the total amount of land affected by land reform and interact this variable with a dummy variable taking value 1 in all the quarters of the treatment period. The expectation would be that more aristocratic presence could be correlated with more conflicts in the treatment period. Results are presented in Table H.1 in the Appendix. Most of the estimated β coefficients are in fact negative and non-significant, except the negative, significant coefficients in the case of Vandalism. Thus, the presence of landowners belonging to the Grandee nobility is not a factor explaining the increase in conflicts.

4.4. Robustness and sensitivity analysis

The findings in Fig. 3 and Table 2 are robust to several alternative specifications and subsets of the data. We check for specifications controlling for spatial autocorrelation and specifications removing all municipalities with zero reported conflicts throughout the period and using a Poisson model.

Because spatial dependence might be an issue, we re-estimate Eq. (2) considering spatial autocorrelation and spatial lags of the dependent variable. In this case, we are forced to use a random effects model rather than a fixed effects. The results are presented in Tables I.1 and I.2 in the appendix. Both the sign and size of the β coefficients in the Theft, Vandalism, and first principal component regressions are robust to the use of more complex models with spatial dependence. For the rest, the coefficients keep the sign and size, but some lose their statistical significance.

Our DiD results are also robust to other functional forms. We remove all the municipalities with zero conflicts throughout the period and estimate a Poisson model with Fixed effects based on Eq. (2). Coefficients can be found in the Appendix in Table I.3. In this case, we retrieve positive β for all conflicts, However, only regressions having Theft and Vandalism as the dependent variable get positive, large, and significant coefficients. For example, the point estimate of β in the theft regressions predicts an increase in conflicts of 374% in the treated municipalities with respect to the control group, an effect of roughly similar size as the one in Table 2.[14] These coefficients confirm that the results in Fig. 4 and Table 2 do not depend on dropping or including specific municipalities or on the specific functional form used.

Lastly, we examine the intensive margin as a robustness exercise. We re-estimate Eq. (2) for the Peña Novo treated and control municipalities in the matched sample using the intensity of treatment rather than a dummy variable. In this case, we use the ratio of settlers to the landless peasants in each municipality as a measure of how comprehensive the settlements were. In Table J.1 we display the coefficients, which support the results from the extensive margin. For example, let us consider the theft regressions. The standard deviation of the ratio of beneficiaries is 0.400. The coefficient for the variable interacting the treatment period dummy and the ratio of beneficiaries is 0.146. Thus, starting from the mean of petty theft cases per quarter in the control municipalities in the treatment period (0.069), a one standard deviation increase in the ratio of beneficiaries to eligible would increase the mean number of conflicts by 85%.[15]

5. Conclusions

Domenech and Herreros (2017) analyzed the effects of delayed land reform on the behavior of the eligible non-beneficiaries using a sample of municipalities in Andalusia in which land reform failed to be implemented. In this case, positive effects of failed land reform were found for some types of conflicts, most prominently strikes. In addition, deploying reform quickly in some municipalities seemed to be associated with small decreases in peasant conflict.

In this paper, we analyze a region of Spain, Extremadura, affected by a form of fast-track land reform (the decrees of intensification of cultivation). With these interventions, the government hoped to give work to the seasonally unemployed landless peasants. According to political economy models, re-distribution should have appeased peasants. However, there are also reasons to think that negative income shocks or effects on the peasants' collective action might also have increased conflict.

Our results show that the temporary expropriations ordained by the Prefect of Extremadura increased rural conflict for some months. We uncover large effects in the case of strikes, violence, theft, and attacks on machinery and other landowner assets (vandalism). We argue that temporary expropriations and the associated settlements boosted the collective action of peasants. In addition, the expropriations probably had negative consequences for the incomes of landless peasants, while blurring existing property rights. The overall result was an increase in most types of conflicts given the top-down implementation of settlements decided by the prefect.

These results speak to the literature on the political economy of re-distribution. It is not often the case that the re-distribution of wealth from the rich to poor appeases the poor, at least in the short run. The conflict-enhancing effect of re-distribution can make the design of re-distributive policies particularly tricky. Given these feedback loops, reformers not only need to consider the technical, informational, and administrative aspects of re-distributive policies, but also must factor in the effects of their policies on the collective action and incomes of the often very poor beneficiaries. In the very polarized rural society of 1930s Spain getting these policies right must have been particularly challenging.

Data availability

Data and code for all the figures and tables of this article can be accessed at Open-ICPSR. Cite as: Domènech, J., Land Reform and Conflict in 1930s Extremadura (Spain). Inter-university Consortium for Political and Social Research. 10.3886/E188541V1.

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[14] The size of the effect is calculated as $(e^\beta - 1) * 100$. As an extra robustness check, we re-estimate Eq. (2) using the matched sample and a measure of land ownership inequality. The results are presented in Table J.2. in the Appendix. According to these regressions, inequality does not drive our main results. All the estimated βs are negative and the coefficient is statistically significant in the case of strikes.

[15] As an extra robustness check, we re-estimate Eq. (2) using the matched sample and a measure of land ownership inequality. The results are presented in Table J.2. in the Appendix. According to these regressions, inequality does not drive our main results. All the estimated βs are negative and the coefficient is statistically significant in the case of strikes.

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Declaration of Competing Interest

The authors declare that they do not have competing interests.

Acknowledgments

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.eeh.2023.101530.

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