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ABSTRACT

How does territorial control by non-state actors affect long-term development? We investigate the economic, social, and political consequences of temporary territorial control by guerrillas during the Salvadoran Civil War. During this period, these guerrillas displaced state authorities and promoted the creation of self-governing institutions that were highly representative of local community values and showed open distrust of the state and elites. Using a spatial regression discontinuity design, we show that areas exposed to guerrilla control have experienced worse economic outcomes over the last 20 years relative to areas adjacent to these locations that were controlled by the formal state. Our results suggest that informal participatory institutions in guerrilla-controlled areas led to the persistence of land fragmentation and disengagement with the government. We argue that when non-state actors develop governance institutions as an alternative to the state, it can lead to negative effects on development through persistent norms of distrust towards out-groups, even after they relinquish control.

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"Mayors, judges, security posts, everything disappears, (...), practically the whole state disappears, and the state was us."

(FMLN Military Commander, March 2022)

I INTRODUCTION

Civil wars are common and persistent events: at least 100 countries have experienced episodes of internal armed conflict since 1946 (Pettersson and Öberg, 2020). Seminal literature in this field has documented the large negative effects of these wars on economic development (Blattman and Miguel, 2010), showing that such conflicts directly depress economic growth because violence depletes factors of production. Yet, war undermines economic growth in indirect ways as well. Armed non-state actors may also affect long-term development during civil conflicts by seizing territory and extracting resources, appropriating land, mobilizing local populations, and imposing their own governance and economic structures to shape the futures of regions under their control (e.g., Wood, 2008; Arjona, Kasfir and Mampilly, 2015; Arjona, 2016; Stewart, 2018; Breslawski, 2021; Grasse, Sexton and Wright, 2021; Sánchez De La Sierra, 2020). Although territorial control is a key rebel strategy,[1] little is known about its implications for development or whether effects persist once these groups relinquish control. We are the first to explore this mechanism.

It is not obvious how territorial control by non-state armed actors affects long-term development. Rebels can promote security for local residents, protect civilians from external armed actors, establish economic and judicial institutions, and provide basic public goods. Nonetheless, they may also displace economic private activity and induce norms of distrust of the state with negative consequences for economic development that can last for decades.

In this paper, we focus on the long-term development impacts of territorial control by the Farabundo Martí National Liberation Front (*Frente Farabundo Marti para Liberación Nacional*, FMLN) in El Salvador. The FMLN was an armed organization formed in October 1980 that united the five largest leftist guerrilla organizations in El Salvador.[2] Starting in 1985, the FMLN (herein FMLN or Salvadoran guerrillas) established full territorial, economic, social, and political control in multiple areas, effectively replacing the Salvadoran state.

Territorial control by non-state actors is associated with several factors that could affect long-

[1] Territorial control is a key aspect of irregular warfare. For example, in Colombia, the FARC (*Fuerzas Armadas Revolucionarias de Colombia*) controlled many remote areas before the Peace Agreement was signed in 2016, much as Peru's Shining Path (*Sendero Luminoso*) controlled the Andes Valley in the 1980s.

[2] These include *Fuerzas Populares de Liberación Farabundo Martí*, *Ejercito Revolucionario del Pueblo*, *Resistencia Nacional*, *Partido Comunista Salvadoreño*, and *Partido Revolucionario de los Trabajadores Centroamericanos*.

term development, such as the provision of basic public goods and the establishment of new institutions to gain support from local communities. The Salvadoran context suggests one feature is particularly relevant: the creation of alternative governing authorities that relied on community self-governance initiatives and promoted distrust of the state (Pearce, 1986; Binford, 1997; Wood, 2003, 2008). In areas controlled by the FMLN, guerrillas eliminated the state's local authorities and promoted the creation of community-based organizations to address health, education and economic problems. These participatory institutions were autonomous and peasant based, and their ideology was founded on community values, altruistic solidarity, and distrust of the state and elites. These organizations flourished as an alternative to state institutions, insulating local communities from national politicians and further eroding trust in the state. Moreover, as part of the community initiatives, guerrillas substituted subsistence crops for large-scale agricultural production to foster the economic self-sufficiency of peasants. In contrast, during the same period, nearby areas remained under state control and did not experience changes in governance.[3]

We examine the effects of the FMLN's temporary territorial control by comparing areas around and near the boundaries of FMLN territories between 1985 and 1992, as documented in the United Nations map used during the peace talks between the Salvadoran government and the FMLN. Figure 1 illustrates these areas and boundaries. The Salvadoran government and the FMLN jointly approved the map and submitted it to the United Nations during the peace talks between 1990 and 1992. We assess the effects of FMLN territorial control on development 20 years later by examining current changes in economic activity (proxied by night light luminosity), human capital (measured as years of education), and a wealth index that approximates average household living standards.

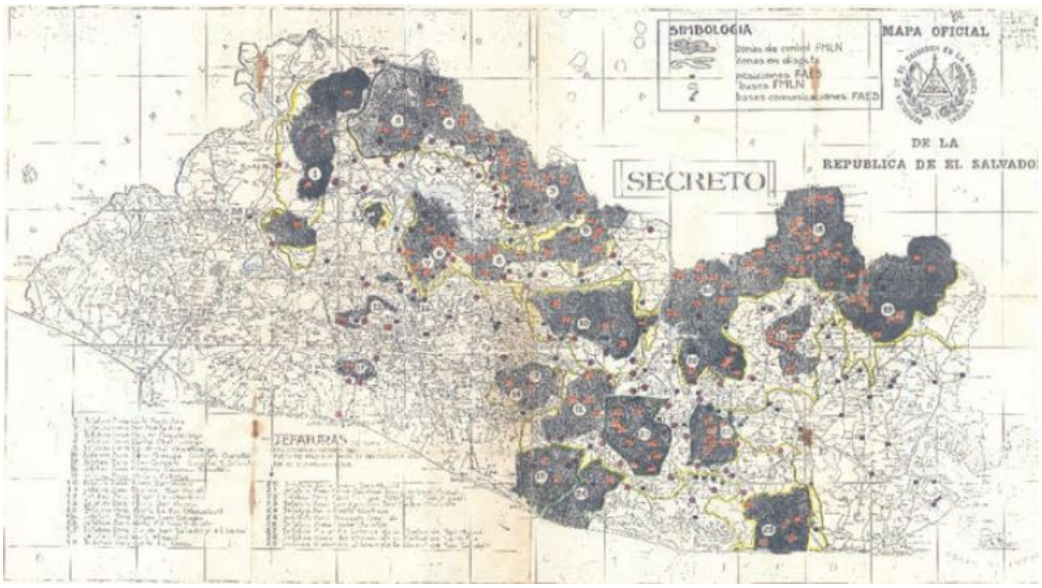
Our empirical strategy employs a spatial regression discontinuity design and uses geospatial data on night light luminosity for 2013 and census tract data on education and wealth for 2007. Moreover, to disentangle the mechanisms, we combine information from multiple sources with data collected through our own geocoded household survey on measures of social capital, land markets, and trust.

A review of the validity of the empirical design shows that all geospatial and economic variables observed prior to the Salvadoran Civil War vary smoothly around the boundaries of rebel-

[3]The only counterinsurgency strategy promoted by the Salvadoran government was the CONARA (Commission for the Restoration of Areas) in 1983, an initiative implemented in two departments (San Vicente and Usulután) but not targeted to guerrilla territory. It was similar to the Strategic Hamlet Program implemented in South Vietnam and aimed to halt the influence of communism. However, the plan failed to produce the expected results and was quickly discontinued.

controlled areas. In particular, the use of geocoded data from multiple sources—including covariates that proxy state capacity, violence, demographics, agricultural production, and land concentration—confirm there were no differences in these dimensions before guerrillas seized control. The only significant difference between the areas around the boundary is a small discontinuity (approximately 17 meters) in altitude. This is consistent with qualitative evidence and findings from our interviews with former combatants indicating that the FMLN's territorial boundaries were primarily defined by war strategies and thus independent of preexisting economic conditions (Castañeda, 2016).[4] In particular, guerrilla-controlled territories included strategic locations that offered a topographic advantage against the enemy.

Figure 1. Guerrilla-Controlled Areas



Source: Castañeda (2016).
Notes: This map shows the location of guerrilla-controlled areas. It was submitted to the United Nations for the Chapultepec Peace Accords and approved jointly by the Salvadoran Government and the FMLN as part of the cease-fire negotiation process between 1990 and 1992.

Results reveal that FMLN control in the mid-1980s had large and persistent negative effects on development outcomes in the long run. After almost 20 years, areas inside FMLN-controlled territories had less night light luminosity, lower human capital, and worse wealth outcomes relative to lands just outside these areas. The magnitudes of the estimated effects are important. By 2013, areas once controlled by the guerrillas experienced nearly 18.6 percent lower night light lumi-

[4]In our analysis, we show that this difference in altitude is not correlated with any economic outcomes at baseline, which confirms that these locations were chosen solely because they were advantageous to their military strategy.

nosity than places never under rebel control (approximately 5.2 percent lower GDP than in areas the guerrillas did not control).[5] We also show that individuals living today in areas previously controlled by guerrillas had a wealth index that was 0.121 standard deviations (sd) lower than individuals living in nearby areas, as well as 0.28 fewer years of education. Moreover, we show that the effects on education are concentrated among individuals who had not finished their education by the time guerrillas gained territorial control, are not driven by selective migration, and persist over time.

What explains the persistence of these negative effects? Although the entire region under study has experienced the same formal institutions since the end of the war and guerrillas no longer govern, we hypothesize that the informal norms developed through the participatory institutions promoted by the FMLN between 1985 and 1992—combined with its view that citizens should guarantee their needs independent of elites and the state (Pearce, 1986)—induced persistent changes in the residents' relationships with the state and formal economic structures. Participatory institutions can influence local living standards through effects on attitudes such as "political disenchantment" with government.[6] Local cooperation could foster social capital (Bauer et al., 2016) but it could also breed resentment towards the state and elites if cooperation were a strategy developed to avoid dependence on those out-groups. At the same time, it could further reinforce the economy of subsistence implemented during the guerrilla period if citizens from these areas still distrusted the state and associated investors and large landowners with the repressive agriculture elites of the 1950s.

In line with these arguments, our quantitative results show that individuals living in areas once controlled by the FMLN were less likely to engage with politicians and distrusted the state more. Trust has a central role in the effective functioning of state institutions (Banfield, 1967; Almond and Verba, 2015; Coleman, 1990). On the one hand, less trust may affect the supply of public goods if politicians have less information about the needs of local populations. For instance, citizens may fail to communicate their needs effectively if they do not believe politicians will respond; this disengagement consequently prevents the government from providing public goods effectively (Jablonski and Seim, 2022; Buntaine, Nielson and Skaggs, 2021). On the other hand, less trust in state institutions can decrease demand for public services since citizens do not view the govern-

[5] De Groot et al. (2021) estimate that the absence of conflicts around the world between 1960 and 2007 would have resulted in a gain of 15.7 percent in global GDP. Hence, an effect of five percent is sizable.

[6] The term was first nested by Moodie (2011) as "democratic disenchantment."

ment as legitimate or capable (Mishler and Rose, 2001; Alsan and Wanamaker, 2018; Lowes and Montero, 2021; Martinez-Bravo and Stegmann, 2022). Our results support this channel because we document that citizens today report lower access to/utilization of public services in areas that experienced guerrilla control despite the fact that we also observe: (i) more public investment in infrastructure in these same services; (ii) a larger number of schools per capita and better road density: and iii) no differences in state presence such as hospitals, state buildings, and police stations.

Distrust of the state and associated elites could also explain the endurance of economic structures implemented during guerrilla control. Our results largely show that inside guerrilla-held territories, commercial plots that were historically owned by economic elites are smaller and have lower productivity today. Moreover, we find suggestive evidence that agro-based industry did not develop in these locations. In particular, we find only a small share of individuals working in services and industry in former guerrilla areas relative to the control group. These results provide evidence that the subsistence agriculture implemented during guerrilla control continues to this day, potentially affecting long-term economic outcomes. There is no evidence, however, that rebel-controlled areas changed income equality. Results from our focus groups suggest that regardless of whether agricultural landowners would want to invest in guerrilla areas today, residents in these areas are less willing to let these actors enter since the distrust of historic agricultural elites still exists, and residents tend to associate large landowners with them.

We rule out alternative mechanisms. First, an increase in violence during and after the armed conflict does not explain our results. They hold when we exclude areas close to the rebel border, suggesting that violence at the border was not the main driver, and to using different bandwidths.[7] Moreover, there was no increase in deaths, battles, and victims from 1980 to 1992 in guerrilla-controlled areas relative to nearby areas outside rebel control. Second, these results do not seem to stem from selective migration of individuals living in guerrilla-controlled areas. Third, the results are not driven by differences in land tenure in FMLN-controlled areas relative to nearby areas. Fourth, it is unlikely that the effects are driven by forced child recruitment into guerrilla groups. In fact, qualitative evidence suggests that the Salvadoran Army extensively recruited children by force but the guerrillas did not. [8] Finally, we demonstrate that the results are not

[7] We rule out other dynamics associated with the existence of a border, such as a higher incidence of landmines along the boundary, since El Salvador executed a very successful mine-clearing program that left the terrain free of mines by 1994.

[8] It is estimated that of 60,000 Salvadoran Army combatants, about 48,000 (or 80 percent) were under 18 years of age,

driven by differential patterns of public or private investment in the post-conflict period between treated and control areas today. For example, we find no differences in the supply and quality of public education and road connectivity, and also no changes in the number of businesses in FMLN-controlled areas relative to nearby areas.

This paper has multiple policy implications. First, it provides evidence that the creation of temporary self-governing institutions by non-state actors as an alternative to the state can detrimentally affect development through persistent changes in social norms. In particular, we show that distrust of the state can lead to disengagement with governance and associated elites, affect access to and utilization of public services, and reinforce a subsistence economy. Second, the results provide some evidence of a mismatch between historical social norms and the best action given the current environment (Nunn, 2022). While distrust of the state in these areas may have been the optimal behavior during the period of guerrilla territorial control (given historic repression by the state and elites), distrust of these institutions after that period may not have been optimal because the state was transformed and repressive elites were no longer present (Boyce, 1995). Finally, our results provide the first empirical evidence on the consequences of living at the margin of the state. Scott (2010) highlights how hill societies in Southeast Asia prefer to live at the margin of the state to avoid slavery and taxes. In our case, we provide some evidence that "opting out" from the state could have negative effects on development.

Overall, this paper demonstrates that historic territorial control by non-state actors and their establishment of local governance can partly explain long-term development paths. Particularly in Latin America, local governance by non-state actors has been a prominent feature of several communities at least since colonization. Our findings are consistent with seminal studies that show the role of historical institutions in long-term development (e.g., Acemoglu, Johnson and Robinson, 2001; Acemoglu and Robinson, 2012; Dell, 2010; Dell, Lane and Querubin, 2018; Acemoglu et al., 2019; Nunn, 2020; Dell and Olken, 2020; Lowes and Montero, 2021). This paper not only documents persistence but also sheds light on specific mechanisms. Our evidence closely relates to Dell, Lane and Querubin (2018), who show how village governance in Vietnam increased social capital and development by crowding-in cooperation with government. We complement this work by substantiating how local rebel governance (developed in parallel and as an alternative to

while only 2,000 of the 9,000 FMLN members were under 18 (or 20 percent) (Courtney, 2010). Moreover, a survey of child soldiers by UNICEF at the end of the war showed that while 91.7 percent of FMLN recruits had joined voluntarily, close to 53 percent of the underage Salvadoran Army soldiers were forcibly recruited (Courtney, 2010).

the state) can hinder long-term development by reducing economic production and cooperation with formal government due to enduring norms of distrust.

This paper also provides new insights to the literature on the development consequences of conflict (e.g., Collier, 2008; Blattman and Miguel, 2010; Bauer et al., 2016; Leon, 2012; Fergusson, Ibáñez and Riano, 2020; Riaño and Valencia Caicedo, 2020). We complement this work by showing that the economic legacies of war and its effects on social norms are not exclusively side effects of violence or the destruction of factors of production, but they are also the by-products of institutions left by armed rebels. Furthermore, we offer evidence that the effects of conflict can be unequally distributed over territory because they arise from changes in economic and local governance structures, not exclusively from higher levels of violence. This distinction is necessary to understand the persistent effects of conflict.[9] If destruction of physical capital or the temporary reduction of human capital due to violence could explain all the effects, the negative impacts on development could be mitigated in the short to medium term (Miguel and Roland, 2011). However, if effects on development emerge from structural changes in the economy and norms, they will be more persistent and difficult to change.

In addition, we contribute to a growing literature on rebel governance by considering the effects on development in territory that experienced uncontested control by insurgents. Scholars have recently shown that non-state actors can govern the political, economic, and social lives of residents in an orderly fashion and establish institutions that regulate civilian behaviors (Arjona, 2016; Breslawski, 2021; Loyle et al., 2021; Stewart, 2018; Sánchez De La Sierra, 2020; Grasse, Sexton and Wright, 2021; Liu, 2022). These studies show that armed groups must first win local populations over, a phenomenon extensively observed in El Salvador (Wood, 2003), where rebels had an incentive to create systems of governance (Arjona, Kasfir and Mampilly, 2015). Most of this work focuses on the factors that produce rebel governance, so little is known about how it may affect development outcomes or whether these effects persist after the end of rebel control. The design of effective post-conflict policies depends on understanding the impacts of conflict in specific contexts and on identifying the mechanisms behind these effects.

Finally, the mechanisms we analyze also connect to recent evidence highlighting how land fragmentation can change economic development (Foster and Rosenzweig, 2022; De Janvry et al.,

[9] While there is agreement on the negative effects of conflict in the short run, there is no consensus on long-term effects (Riaño and Valencia Caicedo, 2020).

2015). Our results provide novel proof that historical factors are key to understanding the role that land fragmentation has on economic growth. In particular, we show that land is more fragmented as a consequence of rebel governance and land occupation. Moreover, in territories controlled by the guerrillas, plot consolidation was more challenging because distrust of out-groups was rampant and hampered the benefits of scale.

II HISTORICAL BACKGROUND

II.A The origin of Salvadoran guerrillas: The FMLN

The leading causes of the civil war and the origins of the guerrillas lie in the country's long history of authoritarian rule, political exclusion, and economic inequality. As early as the 1930s, most agricultural land was owned by a small group of coffee-plantation owners who met their demand for workers through a mostly unfree labor force that lived under harsh conditions. The economic modernization that occurred after the Second World War led to the branching out of commercial crops but did little to diversify the economic elites who controlled the cultivation and export of crops as well as the incipient financial and manufacturing sectors (Colindres, 1976; Sevilla, 1985). Years of military rule helped forge an alliance between the political and economic elites based on the idea that class structures must be maintained and the political system must be exclusionary (Wood, 2003). As a result, rural labor unions remained illegal, labor practices continued to be coercive, and land was unequally distributed.

Although most of the country's history has been characterized by political exclusion, in the 1960s the military regime allowed some level of political competition. However, this process came to a halt in 1972 when the mayor of San Salvador, José Napoleón Duarte, a popular opposition candidate, was allowed to run in the presidential election. Duarte won but the military quickly overruled the results. The ensuing economic exclusion and the closure of the political system fueled protests and mass mobilization in urban and rural areas that met with high levels of government repression. Displays of outrage by peasants began to rise in response to the political assassinations of rural leaders, peasants, students, and teachers during these years (Wood, 2003). Security forces machine-gunned several marches and resources flowed to paramilitary organizations and "death squads" as well. By 1980, more than one thousand people were killed for political reasons each month.

By the mid-1970s, several guerrilla groups were operating in the San Salvador area. By the late

1970s, five major guerrilla organizations were recruiting supporters among students and workers in cities and peasants in rural areas. Confronted with the growth of the guerrilla movement, divisions within the oligarchic alliance began to deepen, and a group of reformist military officers staged a coup in October 1979, overthrowing the president and installing a new junta. Yet, instead of attempting a new strategy, these new leaders tightened the repression of guerrilla groups (Wood, 2003).

As El Salvador spiraled towards civil war, the five biggest guerrilla groups founded the FMLN in November 1980. In January 1981, they launched their first major operation, usually known as the "final offensive." Although this failed to unseat the government, it consolidated the FMLN as the major fighting force against the Salvadoran state and provoked a change of strategy as the guerrillas retreated to rural areas to regroup and prepare for a longer fight.

During the first years of the war, the FMLN forced landlords (who had begun to flee the countryside in the late '70s) and the state out of rural areas. At the peak of the war in 1984, the FMLN had an estimated 8,000 to 15,000 combatants (Williams, 1998), ran operations in 30 percent of the country (70 municipalities out of 262), and controlled 80 percent of all strategic territory (FMLN, 1984). Intense and indiscriminate state violence in disputed areas after the war's onset caused the insurgent ranks to grow and motivated many peasants, who had previously been politically withdrawn, to fight for the rebels.[10] As Wood (2003, p.18) shows in her extensive work on collective action during the Salvadoran Civil War, participation in the insurgency was mostly voluntary and explained as "an act of defiance of long-resented authorities and a repudiation of perceived injustices (particularly the brutal and arbitrary violence by security forces)."

This indiscriminate state violence against civilians also drew the attention of human rights activists abroad and shone the spotlight on the role of the United States in training and arming the Salvadoran military. As a result, U.S. government officials withdrew their financial and military help and persuaded Salvadoran military leaders to curb their violence against civilians in late 1983 (Wood, 2003). Consequently, a reduction in violence was observed in 1984, also related to the election of a civilian president, the former San Salvador mayor José Napoleón Duarte, and to a change in the FMLN's strategy based on the establishment of control or *liberated* zones in the countryside. Most analysts argue that by 1985, the war had reached a stalemate, and the FMLN's

[10] Violence during El Salvador's civil war was lopsided: state agents were responsible for 85 percent of deaths, most of which were civilians (Green and Ball, 2019).

hold on their areas remained stable and undisputed. By 1989, the FMLN was strong enough to plan and launch a massive offensive in several urban areas, which led to the formal negotiations in 1990 under U.N. mediation that ultimately ended the war on January 16, 1992.

II.B Boundaries of FMLN territorial control

The treatment of interest is full territorial control by insurgents between 1985 and 1992. The boundaries that define assignment to treatment are shown in Figure 1.[11] Areas inside these boundaries were under guerrilla control, while areas outside were either controlled by the Salvadoran Armed Forces or disputed by both parties. Existing evidence suggests that military and geographic considerations, such as protection offered by mountains and hills—as opposed to economic differences at the boundaries of interest—explain the formation of these areas of control (Álvarez, 2011). Indeed, as shown below, the rebels did not select areas based on preexisting economic conditions. As one FMLN commander (1984, p. 2) wrote in his memoir: *"the domain of most of the strategic elevations and the northern mountain range gives the FMLN a total topographical advantage over the army."*

Initially, the Salvadoran state entirely controlled the regions under analysis. In 1981, the guerrillas executed a country-wide offensive against 12 of the main military bases with the objective of promoting an insurrection (MINED, 2009). Although this failed, it led to a change in military strategy and thus to the group's geographic dispersion with the goal of establishing a presence on all fronts through *zonas liberadas* (liberated zones), establishing the first of these areas as early as 1982 (Castañeda, 2016). Liberated zones, a key aspect of guerrilla warfare, consist of areas where the insurgency can generate support by providing basic public goods and establishing their own institutions. The concept dates back at least to Mao Zedong's military strategy in which "base areas" were conceived as a winning tactic against a conventional army. They comprised local strongholds situated (preferably) in mountainous areas that could develop popular support by creating systems of governance (Mao, 1966). As this idea evolved, the importance of establishing these zones in mountainous areas remained and was adopted by several non-state armed actors, from communist guerrillas in Guatemala in the 1980s (Moran, 1985) to ethnic armed organizations in Burma in 2021.[12]

[11] As mentioned in the introduction, this map was used in the peace accord meetings between the Salvadoran government and the FMLN from April 1990 to January 1992. It is typically viewed as recognition by the state of the magnitude of the insurgent territorial presence (Chávez, 2011).

[12] Several cases of self-governing institutions can be found in varying locations across history, including the Democratic Republic of the Congo, South Sudan, Liberia, Indonesia, Bolivia, Colombia, El Salvador, and Guatemala. See

Importantly, historical evidence and FMLN documents suggest that after 1984, the boundaries of FMLN-controlled areas were extremely stable for at least two reasons. First, by 1984, the FMLN controlled approximately 80 percent of the militarily strategic territory (FMLN, 1984). Second, by the same year, more than 80 percent of the Salvadoran Army's offensive capacity was in permanent use. Therefore, they could not reconquer areas under FMLN occupation but instead had to strengthen the defense of areas the state still controlled (FMLN, 1984). Hence by 1985, the conflict had effectively entered a virtual stalemate (Castañeda, 2016). Therefore, we focus on guerrilla-controlled areas that were stable between 1985 and 1992. The map in Figure 1 shows the three strips of the country where the FMLN had established full control by 1985: the northern, central, and coastal areas.[13]

II.C Rebel governance in FMLN-controlled areas

Our study region experienced significant cultural, social, and economic transformations during FMLN control. As mentioned in Section II.B, the creation of systems of governance to win local populations over is a fundamental part of rebel strategies that can leave profound changes in their wake. As Wood (2003) emphasizes, rebel control in El Salvador left a legacy of new values, norms, economic practices, and beliefs that contrasted sharply with the prevailing culture before the war and with areas under state control.

Before the FMLN arrived in rural areas, the lack of opportunities due to coercive methods helped maintain an acquiescent peasant culture. Several scholars have noted that as a result of the unequal distribution of land and coercive labor practices, attitudes of fatalism, self-deprecation, and individualism were common among peasants in El Salvador during most of the twentieth century (Martín-Baró, 1990; Wood, 2003). This culture of individualism and fatalism can be traced to the dependency of the land-poor on landowners, which undercut links with other peasants and bred resentment towards political and economic elites (Scott, 1972; Martín-Baró, 1990).

Upon their arrival, the guerrillas transformed many of these patterns through the ways in which they managed their relationship with civilians when they consolidated their control in 1985. Three major changes took place: the promotion of civil society and self-governance initiatives to address basic needs, the fragmentation of landholding, and new patterns of production.

Arjona, Kasfir and Mampilly (2015) for an analysis of some of these case studies.

[13]The absence of an FMLN presence in the western region is usually attributed to the legacies of the massacres of indigenous peasants by state and paramilitary forces in the 1930s (Lauria-Santiago and Gould, 2008).

Rebel groups invested costly efforts to eliminate the state's local and judicial administration in the areas under their control (Martín Alvarez, 2010). This created a pressing need for new institutions to administer the life of civilians in control areas. Thus, the FMLN promoted the formation of semi-autonomous local councils, the *Poderes Populares Locales* (PPL) first, and the "dual powers" (*Poderes de Doble Cara*) later, to substitute for formal state authorities (FMLN, 1984; Pearce, 1986; Binford, 1997). These new governing structures administered and organized the local population; its main purpose was to procure public goods and resolve issues affecting the community (Pearce, 1986). Although they existed in various forms, all fostered democratic activity by residents. Peasants participated in their own government and largely viewed these local powers as legitimate (Pearce, 1986). Some groups had popular assemblies, and sometimes they also held elections for positions. These organizations addressed all issues ranging from water provision to the establishment of community legal codes (Pearce, 1986; FMLN, 1983).

The areas controlled by the guerrillas saw the emergence of diverse and plentiful civil-society organizations that were in charge of organizing peasants and handling pressing development issues (Álvarez, 2013; Velado, 1993). The FMLN supported the proliferation of these community-based organizations and viewed them as a way to organize the population independently of both the state and the guerrillas (FMLN, 1984).

These community organizations flourished as autonomous organs; that autonomy was critical to their success. With the change of government strategy from indiscriminate violence (due to the U.S. constraints) and the consolidation of areas controlled by the FMLN in 1985, the civilian autonomy allowed residents to remain in their homes as they were not afraid of being considered insurgents by the government, and they were moreover protected by the FMLN (Binford, 1997). Despite overwhelming peasant support for the FMLN insurgency, neutrality was possible and common inside FMLN-controlled areas because the guerrillas were extremely restrained in their use of violence and promoted autonomy as a policy (Wood, 2008). According to different scholars, a major legacy of rebel governance and the promotion of civil society organizations was the consolidation of close-knit communities and the creation of alternative political and economic models of development (Binford, 1997).

The organization of production also changed in FMLN-controlled areas. As social unrest had begun to deepen in the late 1970s, large landowners began to flee. While establishing their control areas, the guerrillas targeted export crops for sabotage, which further eroded the surviving hacien-

das and massive agricultural production. Since many food products were unavailable during the war, the FMLN promoted subsistence farming and supported the appropriation of large and abandoned landholdings (Wood, 2008). As the FMLN established control, it permitted peasants to occupy land regardless of whether they participated in the insurgency (Wood, 2003). This split large properties into smaller plots mainly used for cultivation by local peasants (Wood, 2008). These new models of production and labor contracts led to the "peasantization" of formerly commercial agriculture and the fragmentation of rural markets. As such, most private large entrepreneurs and large-scale agriculture concerns were eliminated and replaced by cooperatives and individual peasant farmers (Wood, 2010; Binford, 1997).

By the end of the war, rebel control had reshaped the social and economic landscape. These areas now featured close-knit communities with access to small plots of land. Residents there self-organized to provide public goods and profoundly distrusted and resented repressive political and economic elites.

II.D Post-conflict context

After the government and the FMLN jointly approved the Chapultepec Peace Accords on January 16, 1992, the Salvadoran Civil War ended. Scholars often refer to these peace agreements as the most successful in the post-Cold War period. Why? The cease-fire held; the FMLN became a legal political party; military, judicial, and electoral institutions were reformed; an Office of Human Rights Council was established; a Truth Commission was formed; and a limited agrarian reform was enacted (Moodie, 2011).

The Catholic Church and the United Nations were the mediators of the peace talks that culminated in a final agreement regarding five main areas (United Nations, 1992). First, the armed forces were modified and the FMLN was demobilized.[14] Second, the National Civil Police (NCP) replaced the National Guard.[15] Third, there were modifications to the judicial system and the defense of human rights.[16] Fourth, the electoral system was modified to create the Supreme Electoral Tribunal, the

[14] According to the agreement, the armed forces' sole objective would be to defend the sovereignty of the State while remaining apolitical and respecting human rights.

[15] The NCP replaced the old security forces with a civil and democratic doctrine, quotas were established for the new personnel in which demobilized elements of the FMLN and former National Police would participate, and a National Academy of Public Security was created to train the agents of the NCP with an emphasis on respect for Human Rights.

[16] Measures included the creation of the Judicial Training School to train judges and magistrates to adjust to the country's new reality, a reform of the structure of the National Council of the Judiciary (the body that appoints and evaluates judges) to give it greater independence, and a reform of the election process and terms of the magistrates of the Supreme Court of Justice.

highest administrative and jurisdictional authority on elections. At the political level, the measures sought to guarantee FMLN leaders and their members the full exercise of their civil and political rights within a framework of absolute legality. Finally, measures were imposed on both the economic and social fields. The main ones included land distribution to landless peasants and ex-combatants from both the Salvadoran military and guerrilla groups. Moreover, the agreement established that land tenure inside territories not controlled by the state was to be honored and land titles were to be granted to peasants working there at the moment. Overall, all the proposed policy changes—with the exception of the land tenure—were implemented at the national level.

During this period, the Salvadorean private sector boomed and the economy moved away from a high concentration of power among 14 elite families to open to international markets (Boyce, 1995). This was reflected in the transformation of the economy from a primarily agricultural model of coffee, sugar, and cotton exploitation towards more diversified growth in commerce, agricultural export businesses, industry, and financial services. For instance, while agricultural exports represented approximately 25 percent of Salvadoran GDP in the 1970s, towards the end of the century, agriculture's participation fell to less than five percent Rettberg, 2007. Salvadoran businesses blossomed and between 1990 and 1995, the economy grew at an average rate of 6.2 percent, much of it nurtured by growing domestic investment rates in commerce, financial services, and industry. One of the peace agreement winners was the private sector, which got stability, a friendly investment climate at home, and economic rules that enabled it to compete in a new international macroeconomic environment (Rettberg, 2007). Unfortunately, however, economic prosperity was just as unevenly distributed during this period as in the past (Moodie, 2011).

Although the FMLN was able to establish itself as a political party in the presidential election of March 1994, it lost by a wide margin. The two major candidates were Ruben Zamora of Democratic Convergence (the FMLN) and Armando Calderón Sol of ARENA, a right-wing party. Voter perceptions that a left-wing victory might lead to a new wave of political violence was compounded by ARENA's campaign ads that focused on images of wartime destruction (Wantchekon, 1999). This led to its rampant victory and subsequent pessimism about the prospects for democratic consolidation in El Salvador. Yet, the FMLN was able to secure a presidential victory with the election of Mauricio Funes in 2009. However, during Funes' presidential term, several corruption scandals erupted and no substantial policy changes were implemented relative to ARENA.

III DATA

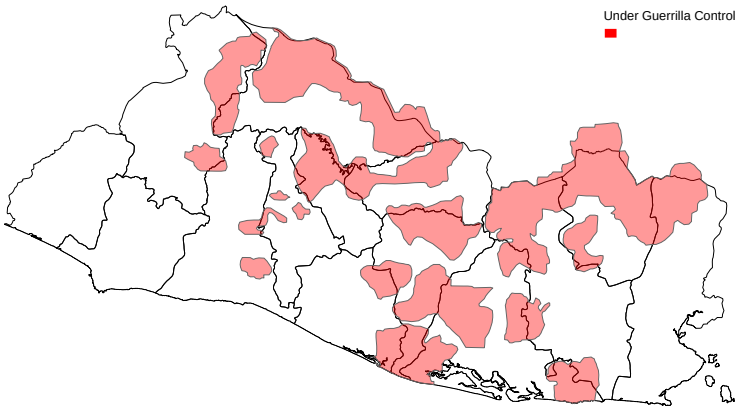
This section describes the primary sources of data used in the study. Appendix A presents a detailed account of the database construction and Appendix B presents summary statistics of all variables employed in the analysis.

III.A Guerrilla-controlled territories

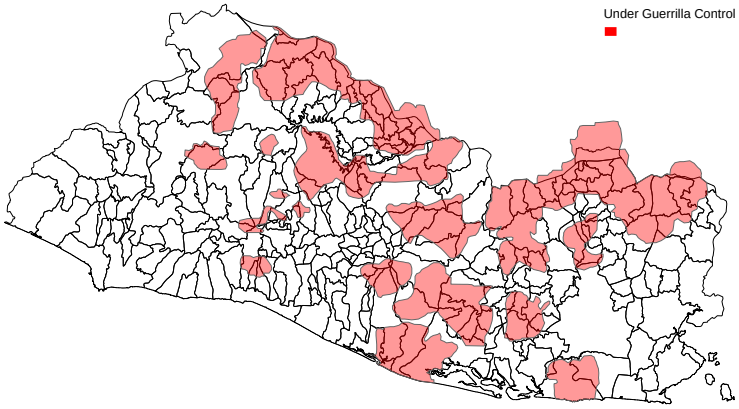
To analyze the role of guerrilla territorial control in long-term development, we geocoded the map that depicts FMLN-controlled areas (see Figure 1). It shows areas that the FMLN controlled during the conflict, areas that the state controlled, and disputed ones. As Figure 2 illustrates, no boundaries of the guerrilla-controlled territories coincide with the administrative departments and municipal boundaries of El Salvador today. Therefore, our estimated treatment effects are unlikely to be contaminated by the influence of a compound treatment comprised of guerrilla control and changes in administrative boundaries. Similarly, Table 1 rules out that we are detecting the effect of the land reform and guerrilla control simultaneously. In sum, the evidence presented so far implies that our identification strategy credibly isolates the effects of guerrilla control from other potential confounders.

Figure 2. Guerrilla-Controlled Territories and Administrative Boundaries

(a) Departmental Boundaries



(b) Municipal Boundaries



Notes: The figure presents in red the areas under guerrilla control and shows that these areas do not coincide with the administrative departments and municipal boundaries of El Salvador today.

III.B Geospatial variables

We use geospatial data to test the validity of the local continuity assumption around the boundaries of guerrilla-controlled areas. The data was obtained from different sources. Elevation was obtained from NASA's Shuttle Radar Topography Mission (SRTM). Information on surface water bodies comes from the MERIT Hydro dataset. Agro-climatic yield rasters with a spatial resolution of five arc minutes (nine km) come from the Global Agro-Ecological Zones (GAEZ) project. For all yields, we are using the 30-year average beginning in 1961.

Figure C.1 maps guerrilla-controlled territories, altitude, and main rivers in El Salvador. It il-

lustrates that the rebels located disproportionately in high altitudes as part of their war strategy (FMLN, 1984) and that rivers often marked the boundaries of their territories.

III.C Development outcomes

The long-term development impacts of guerrilla territorial control are measured using 2013 night light luminosity (as a proxy for local economic activity) and 2007 population and household census data.

Night light luminosity. Data on night light luminosity comes from the Defense Meteorological Satellite Program Operational Linescan System. This data was obtained from the US National Oceanic and Atmospheric Administration (NOAA) web page. It has a resolution of 30 arc seconds $\times$ 30 arc seconds (i.e., approximately 1 km $\times$ 1 km) and spans 1992 to 2013. The main results use data for 2013 as it is the last year available. To study the persistence of effects, we also used individual years between 1992 and 2013.

2007 Population and Household Census. The General Directorate of Statistics and Censuses (*Dirección General de Estadísticas y Censos*, DIGESTYC) provided anonymous microdata from the 2007 census for this study. The data includes the socioeconomic characteristics of all households and individuals, including but not limited to labor market outcomes; educational attainment; material ownership (e.g., having a car, a TV, etc.); use of public services (electricity, sewerage, and others); migration; and other characteristics of all dwellings in El Salvador.

2007 Census Cartography. DIGESTYC also provided maps of the tracts for the 2007 census. Each tract represents a small area with a fixed geographic perimeter. In 2007, the average tract in our sample included 131 households and 473 individuals. Small tract units facilitate the accurate identification of the guerrillas' territorial control, which is approximated using the geographic coordinates of the tract centroids.

In sum, we explore the effects of control by the FMLN via night light luminosity,[17] human capital (measured as years of education and literacy rates), and a wealth index (constructed as suggested by the Demographic and Health Surveys program).[18] The wealth index is the first factor from the

[17]The challenge of night light luminosity data is the significant fraction of observations that take the value of zero and also the existence of extreme values in the right tail of the distribution (Michalopoulos and Papaioannou, 2013; Pinkovskiy and Sala-i Martin, 2016). To account for this concern, the outcome is transformed using the inverse hyperbolic sine transformation, which can be interpreted as a logarithmic dependent variable (Pence, 2006).

[18]Step-by-step instructions for constructing the index are available at: https://dhsprogram.com/topics/wealth-index/Wealth-Index-Construction.cfm

principal component analysis of a household's cumulative living standard. The estimates use the average index of all households in each census tract. The index includes household characteristics such as asset ownership (e.g., bicycles and television); materials used for housing construction; types of water access; and sanitation facilities.

IV EMPIRICAL STRATEGY

IV.A Spatial regression discontinuity design

We estimate the long-term development impacts of rebel territorial control between 1985 and 1992 using a spatial regression discontinuity design around the boundaries illustrated in Figure 3. The specification is:

$$y_s = \beta_1 T_s + \beta_2 f(\overline{d_s}) + \beta_3 T_s \times f(\overline{d_s}) + \sum_{i=1}^{400} \alpha_s^i + \varepsilon_s \tag{1}$$

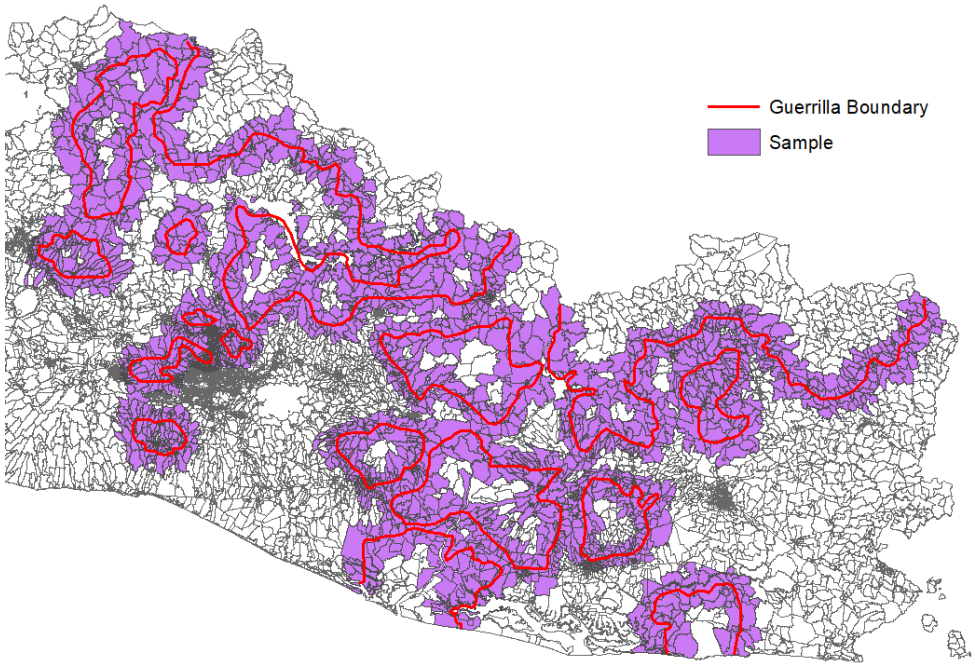
where y_s represents the contemporaneous economic and social development outcomes of interest observed at the census tract unit s. T_s is a treatment indicator equal to one if the tract intersects a guerrilla-controlled zone. $\overline{d_s}$ is the normalized perpendicular distance from each tract's centroid to the guerrilla-controlled boundary.[19] $f(\overline{d_s})$ is a polynomial function of the distance to the boundary which, interacted with T_s, controls for smoothness in the geographic location at each side of the boundary. Finally, since we want to compare treatment and control census tracts that are geographically proximate, the indicator α_s^i splits the boundary in four km segments and equals one if census tract s is closest to segment i, and zero otherwise. We include 400 fixed effects for the minimum distance from the centroid of each tract to each of 400 segments of the guerrilla-controlled boundary.[20] Standard errors are adjusted for heteroskedasticity. As a robustness check, we also estimate Conley standard errors to account for spatial correlation in the data (Conley, 1999).

The baseline results use a local linear polynomial of the normalized distance and limit the sample to tracts within the distance suggested by the optimal bandwidth algorithm of Calonico, Cattaneo and Titiunik (2014) when using night light luminosity as an outcome (which represents approximately 2.26 km). We also present the results under a variety of different bandwidths to check the robustness of the main findings given the classic trade-off between bias and power.

[19] As a result of the distance normalization, tracts touching the guerrilla-controlled boundary get the value of zero in their distance variable and tracts outside the guerrilla-controlled area get a negative value, contrary to tracts inside.

[20] The choice of 400 breaks is to account for enough spatial variation without compromising the variation we are exploiting.

Figure 3. Census Tracts and Boundaries Employed in the Empirical Analysis



Notes: The figure shows in purple the actual census tracts used in the analysis. The selected tracts are within approximately two km from the guerrilla boundary (see Figure 1), which is the optimal bandwidth when using the algorithm of Calonico, Cattaneo and Titiunik (2014).

IV.B Validation of the local continuity assumption

This subsection shows that before the FMLN began to control territories in 1985, areas around the boundary had similar geographic and socioeconomic characteristics.

Geography and socioeconomic development before guerrillas controlled the territory

To ensure census tracts outside the boundary are an appropriate counterfactual for guerrilla-held ones, we first tested for preexisting differences in geographic or socioeconomic characteristics before the start of guerrilla control. Much of the boundary follows the Sierra of Metapán and the Sierra Madre formations (Figure C.1).

For this purpose, we estimated equation (1) to test for discontinuities related to geographic characteristics (e.g., elevation, slope, and access to waterways) and some socioeconomic characteristics (e.g., road and railway density in 1980 and crop agro-climatic yields from 1961 to 1979). Table 1 shows that 33 out of 35 baseline covariates are statistically similar across the boundary.

The only exceptions are altitude and sugarcane yields. The statistical significance of the difference in sugarcane yields between controlled and uncontrolled areas could be driven by the difference in altitude because that variable is included in the mechanical estimation of past potential sugarcane yields.[21] A potential concern with the difference in sugarcane yields is that these can come from land concentration. However, as we show in Table 1, there are no differences in the probability of being part of the 1980 Land Reform across the boundary, which is a good proxy for land concentration in the 1980s and the strength of the elites.

Moreover, the difference in mean altitude is very small (17.13 m from a dependent mean of 502.7) and aligns with the observation that the guerrillas occupied higher territories as a military strategy. Yet, we show that the difference in altitude is not correlated with variables that proxy state capacity or economic development. As a robustness exercise, we include altitude as a control variable and find that all variables are statistically similar across the boundary (see Figures D.1 - D.2), confirming the validity of the local continuity assumption for all outcomes.[22]

Importantly, results also show that before the guerrillas controlled them, these territories were similarly likely to be subject to the national land reform. This initiative redistributed large haciendas to peasants in 1980 in an attempt to palliate increasing levels of distrust of the state and mobilization by the peasantry. Therefore, this result of no differences in land reform across the boundaries shows that the FMLN did not establish its control in places with higher land inequality or differentials in elite strength. Moreover, we find no differences in the number of violent events or massacres across the boundary, providing further evidence that guerrillas did not establish their territorial control based on the levels of distrust of the state that are in general associated with historical state and elite repression.

Furthermore, we tested the robustness of the validity of the local continuity assumption to different choices of bandwidth distance around the cutoff. The results confirm the robustness of the local continuity assumption to the bandwidth choice (see Figures D.5 - D.7).[23]

[21] According to the model documentation of GAEZ v.3 project, altitude and terrain variables are used in the first stage of the agro-climatic analysis.

[22] The specification that controls for altitude is not used to report main estimates as it may result in biased coefficients. The estimate that can be identified when adjusting for imbalanced covariates in RD designs is a weighted average of the treatment effects where the weights depend on the conditional distribution of the imbalanced covariate on the treatment, which is not our estimate of interest. See Calonico et al. (2019) for a discussion.

[23] An additional assumption is that there should be no selective sorting across the boundary. We discuss this assumption in depth later.

Table 1. Smooth Condition Test

Variable (Year)	Coefficient	SE	Dependent Mean	Obs
Geographic Characteristics (Before 1980)				
Altitude (1980)	17.13***	5.679	502.7	3,652
Slope (1980)	0.352	0.222	7.160	3,652
Ruggedness (1980)	0.440	0.321	10.28	3,652
Hydrography (1980)	0.0261	0.0246	0.230	3,652
Roads and Railway (1980)	0.0198	0.0284	0.370	3,652
Has a City or Village (1945)	0.0136	0.0225	0.100	3,652
Distance to City or Village (1945)	-0.0534	0.0464	1.000	3,652
Infrastructure Characteristics (Before 1980)				
Distance to Communications (1945)	0.0639	0.0501	0.900	3,652
Communications Density (1945)	-0.0535	0.0602	0.430	3,652
Part of Land Reform (1980)	-0.0135	0.0163	0.0600	3,652
Inside a Wide Cultivated Area (1980)	-0.0193	0.0132	0.790	3,652
Had a Parish (1979)	-0.00395	0.00565	0.0100	3,652
Distance to parish (1979)	0.0528	0.0698	3.420	3,652
Distance to School (1980)	0.0782	0.0791	12.11	3,652
Population Demographics (Before 1980)				
Total Population (1980)	3.010	4.085	162	3,652
Population Density (1980)	-171.0	110.2	2165	3,639
Years of Education (1980)	-0.160	0.113	4.410	3,639
Birth Rate (1980)	-0.0445	0.0757	0.190	3,639
In-migration Share (1980)	-0.0110	0.00827	0.140	3,639
Out-migration Share (1980)	-0.000182	0.00103	0.0100	3,639
Inside a High Populated Area (1980)	-0.0160	0.0116	0.800	3,639
Agro-Climatic Potential Yield (1961-1979)				
Aggregate Yield Index (1961-1979)	0.0269	0.0165	0.0900	3,652
Bean Potential Yield (1961-1979)	0.00514	0.00385	4.080	3,639
Coffee Potential Yield (1961-1979)	0.00385	0.00426	1.690	3,639
Cotton Potential Yield (1961-1979)	0.000764	0.000516	0.710	3,639
Maize Potential Yield (1961-1979)	-0.00918	0.0116	9.850	3,639
Wet Rice Potential Yield (1961-1979)	0.0134	0.0115	8.790	3,639
Sugarcane Potential Yield (1961-1979)	0.0460**	0.0196	6.500	3,639
Crops' High Suitability (1961-1990)				
Bean High Suitability (1961-1990)	-0.0149	0.0105	0.930	3,652
Coffee High Suitability (1961-1990)	-0.0145	0.0123	0.150	3,652
Maize High Suitability (1961-1990)	0.00174	0.00511	0.990	3,652
Sugarcane High Suitability (1961-1990)	-0.0148	0.0125	0.180	3,652
Conflict (Before 1981) and Incarcerations (1980-1985)				
Number of War Events (1981)	0.00660	0.0894	0.0410	3,652
Number of War Victims (1981)	-0.258	0.4900	0.213	3,652
Number of Incarcerations (1980-1985)	0.00780	0.00740	0.0210	3,681

Notes: The table presents the results of estimating equation (1) for a variety of geographic characteristics, roads and infrastructure availability, demographic characteristics, agro-climatic potential yields, indicators for crop suitability, and for outcomes related to conflict before the guerrillas' settlement. The information was gathered from diverse sources (See Appendix A for more details). Crops were selected according to their relevance for domestic consumption and exports. The unit of observation is the census tract. Controls not shown include a linear polynomial of the distance to the boundary of guerrilla territory, its interaction with whether the tract was under guerrilla control or not, and up to 400 fixed effects representing the closest evenly spaced break in the guerrilla-controlled boundary. The algorithm of Calonico, Cattaneo and Titiunik (2014) was used to set the bandwidth and the estimates were weighted using a triangular kernel. The dependent mean corresponds to the mean outside the territories of guerrilla control but within the area of analysis. Robust standard errors in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

V MAIN RESULTS

V.A Night light luminosity, wealth, and human capital

Table 2 presents formal estimates of equation (1) for the main outcomes of interest. All estimates suggest strong and negative impacts of guerrilla territorial control on development outcomes. First, the results show that locations within guerrilla-controlled territories had lower night light luminosity in 2013, relative to places outside these areas. The effects are sizable. Approximately 20 years after the end of the Civil War—and about 30 years after guerrillas first controlled these areas—areas that were once under FMLN rule experienced nearly 18.6 percent lower night light luminosity than places with no guerrilla control (see Column 1). These results are robust to different transformations of the dependent variable (see Table D.1). Considering that a one percentage point (pp) change in luminosity corresponds to a 0.28 pp change in GDP (Henderson, Storeygard and Weil, 2012), areas that had been under guerrilla control had approximately 5.2 percent lower GDP ($18.6 \times 0.28 = 5.2$) than areas that had not.

Second, we also document that areas once controlled by the guerrillas are less wealthy and have lower human capital almost two decades after the end of the Civil War. Column 2 of Table 2 shows that areas controlled by guerrillas had a wealth index 0.121 sd lower than areas not controlled by the FMLN. Consistent with these negative effects on wealth, Column 3 shows that individuals living in areas close to the border but still within guerrilla territorial control had 0.28 less years of education by 2007. In Table D.2, we present the analysis by cohorts that were exposed to guerrillas versus cohorts that already finished their education by the time guerrillas arrived in the areas where they lived. We find the effects are driven by individuals who were school- age during the war, whereas individuals who finished their education before 1980 had similar years of education across the boundary.[24]

The graphical representation of these effects is in Figure D.9, where a decline is observed in all the outcomes inside guerrilla-controlled areas. The discontinuity is especially strong for night light luminosity. All in all, the estimates present negative and sizable impacts of guerrilla territorial control on long-term development outcomes.

[24] In Column 4 in Table D.1 in the Appendix, we also study literacy rates. These were constructed as the number of individuals 18 years or older who can read, divided by the total number of individuals older than 18 years. We find individuals in FMLN-controlled areas had 2.1 percent lower literacy rates, relative to people living outside these areas. This corresponds to a 2.6 percent drop relative to the average literacy rate in 2007.

Table 2. Effects of Guerrilla Territorial Control on
Night Light Luminosity, Wealth, and Human Capital

	Night Light Arcsine	Wealth Index	Years of Education
	(2013)	(2007)	(2007)
	(1)	(2)	(3)
Guerrilla control	-0.186***	-0.121***	-0.279**
	(0.0247)	(0.0355)	(0.109)
Observations	3,652	3,630	3,637
Bandwidth (Km)	2.266	2.266	2.266
Dependent mean	3.536	-0.0160	6.573

Notes: The table presents the results of estimating equation 1 for the main outcomes. Column 1 shows the effect of whether a census tract is under guerrilla control on the arcsine of night light luminosity from NOAA. Column 2 uses the standardized score of household wealth as dependent variable in the same estimation. Column 3 shows as dependent variable years of education of the population older than 18 years. The unit of observation in all columns is the census tract. Information from Columns 2 and 3 was obtained from the Population Census of 2007. Controls not shown include a linear polynomial of the distance to the boundary of guerrilla territory, its interaction with an indicator of whether the tract was under guerrilla control or not, and up to 400 fixed effects representing the closest evenly spaced break in the guerrilla-controlled boundary. The algorithm of Calonico, Cattaneo and Titiunik (2014) was used to set the bandwidth and the estimates use triangular kernel weights. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Figure 4 presents the effects on night light luminosity for all years of data from 1992 to 2013 to test whether effects are persistent over the years. The results suggest that not only were the negative effects persistent since 1992, but also the magnitudes barely changed over the years. Overall, these results confirm our quantitative results that guerrilla control produced a negative persistent effect on long-term development outcomes. Section VI explores mechanisms to explain the persistence of effects.

V.B Robustness checks

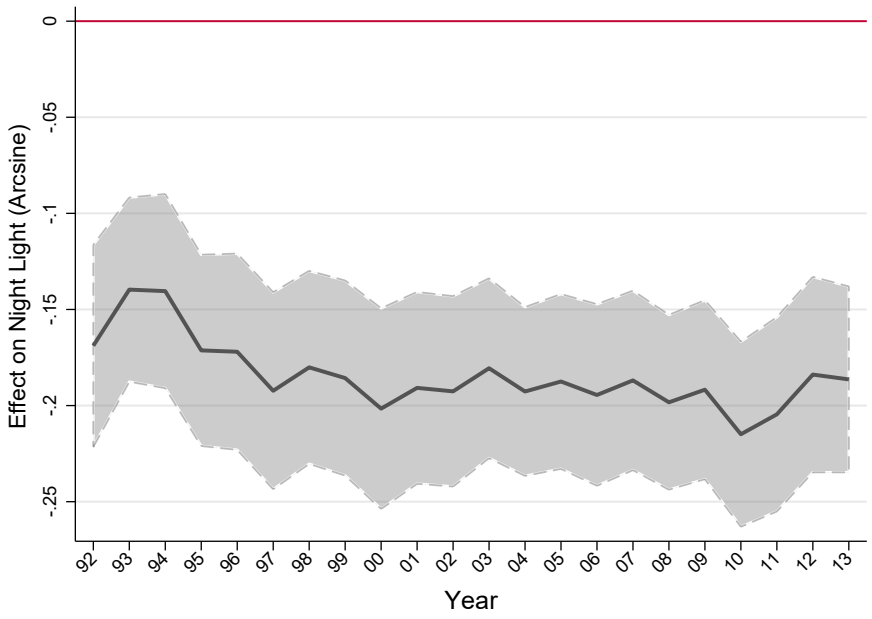
Three approaches were used to test the robustness of the results: (i) estimating Conley standard errors and using alternative RD and Ordinary Least Square (OLS) specifications, (ii) a placebo test that uses difference in altitude to define artificial boundaries, and (iii) a restriction in population sorting across boundaries.

V.B.1 Alternative specifications

First, to account for spatial correlation in our data, we estimate Conley standard errors following Conley (1999). As we show in Table D.3, the statistical significance of the estimated effects remain

the same. Next, to see whether the results are driven by specific regression discontinuity specifications, we conducted a number of robustness checks (see Appendix D). One potential concern is that the results are valid only for the selected bandwidth. Figure D.10 illustrates that the effects of FMLN territorial control on the main outcomes are robust to different choice of bandwidths between 0.1 and 4 km. Second, in Tables D.4- D.6 in the Appendix, the main results are presented using alternative RD polynomials (constant, linear, and quadratic), using additional bandwidth options, and varying the kernel choice. Lastly, we estimate our main model using OLS estimation approach (see Table D.7). Overall, the results are robust to all these alternative specifications.

Figure 4. Effects of Guerrilla Control on the Arcsine of Night Light Luminosity Over Time



Notes: This figure shows the coefficients obtained from the estimation of equation 1 for each year between 1992 and 2013. The gray coloring illustrates 95 percent confidence intervals. The estimates shown include up to 400 break fixed effects. The figure illustrates the coefficients of each yearly estimation from 1992 to 2013. Overall, the effect of guerrilla control on night light luminosity is negative and stable over time.

V.B.2 The use of altitude to define borders

One relevant concern regarding the empirical strategy is that since FMLN-controlled territories were defined using altitude as the main geographic feature for the borders, the results may reflect some socioeconomic characteristic associated with higher-altitude areas rather than rebel control. As shown above, there are no statistical differences in variables that measure economic productivity and state capacity at baseline in areas that were later controlled by the FMLN.

Nevertheless, we conducted a placebo exercise by selecting pairs of neighboring census tracts in areas that were never under guerrilla control but which have the same difference in altitude as tracts inside FMLN areas (Table 1). The intuition here is that if negative effects on development outcomes were driven by significant altitude differences, there would be similar effects on outcomes in areas with the same altitude differences that were not under FMLN control. Results are in Table D.8 in the Appendix. The effects on development are positive and smaller in magnitude than the estimated effects for FMLN control. Moreover, we repeat the same exercise with tracts outside guerrilla areas that have larger altitude differences. Even in this extreme case (that comprises a small percentage of tracts in our sample), the effects are small. Finally, Table D.9 shows estimates of the main effects when we restrict the sample to census segments without a sudden change in altitude relative to their immediate neighbors. Results do not change. These results provide evidence that the main effects are not the by-product of higher altitudes but rather the consequence of guerrilla control.

V.B.3 Population sorting

One potential concern is that individuals in FMLN areas may have moved to nearby areas (our control group) by the time the boundaries formed. We address this concern by evaluating the effects for individuals who never moved (or "stayers.") Table D.10 shows that results are of similar magnitude and significance as for the whole sample, suggesting that in-sample migration may not be a concern. Figure 5 presents more evidence that suggests that the effects do not arise from out-migration from FMLN territories. The figures illustrate the estimates of equation (1) on education outcomes observed at the individual level for the subsample of "stayers." As shown in Figure 5, effects remain negative and statistically significant.

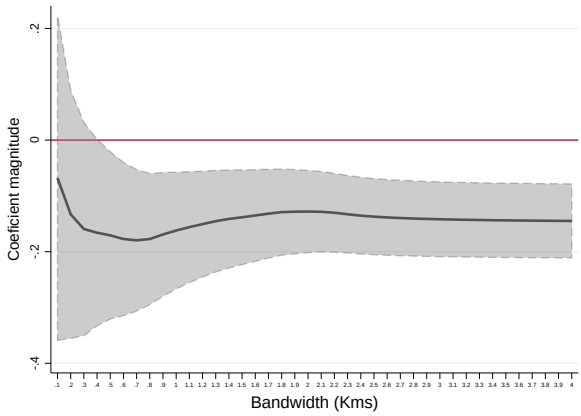
These results align with qualitative evidence that shows the guerrillas provided key defense functions for peasants in their controlled areas (Pearce, 1986), suggesting that we should not expect out-sorting to areas controlled by the Salvadoran state.

Finally, we explore whether recent and selective migration at the time of the boundary could explain differences in economic development across the boundary but find no evidence of it. In particular, we trimmed the sample in two ways: first, we omitted the 10.4 percent of the control-group sample with the highest education and wealth, as in-migration to control nearby areas is 10.4 percent. Second, we omitted the 3.3 percent of the guerrilla sample with the lowest education and wealth, as in-migration to guerrilla areas is 3.3 percent. The estimates based on the trimmed

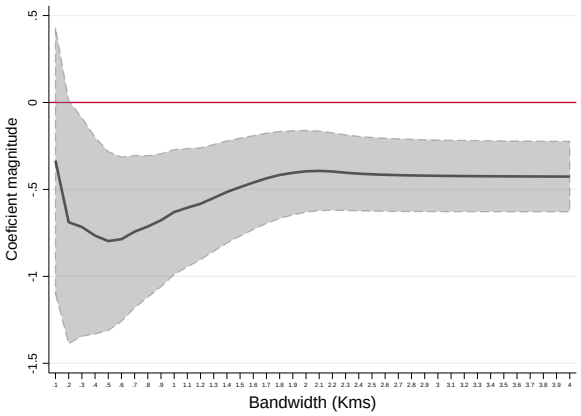
samples remain similar (see Table 3). Moreover, we take advantage of the fact that the census contains information on the year individuals arrived at each location to account for in-sample migration in 1980 and 1985 in Columns 3-4 and 5-6. Results do not change; moreover, the rates of migration across the boundaries are very low (less than 1 percent).

Figure 5. Effects of Guerrilla Control on Education Outcomes of the Nonmoving Population Only

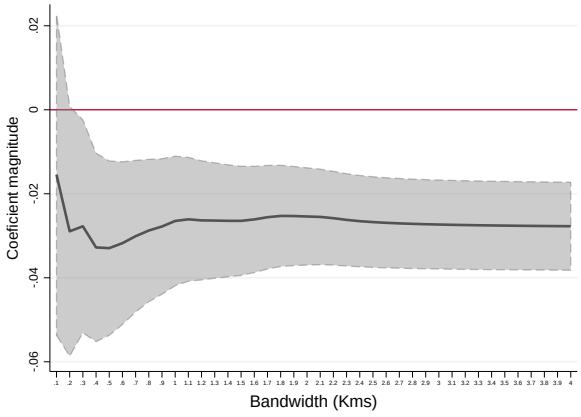
(a) Wealth Index



(b) Average Years of Education



(c) Literacy Rate



Notes: The figure illustrates the results for each outcome variable obtained from the estimation of equation 1 using the "stayers" subsample. The gray coloring illustrates 95 percent confidence intervals. Overall, we find that the effects of guerrilla control on the three outcomes are consistent under a wide range of bandwidths (0.1 to 4 km).

Table 3. Accounting for selective in-migration

Trimming using the	All-Time In-migration Rate		1980 In-migration Rate		1985 In-migration Rate	
	Wealth Index	Wealth Index	Wealth Index	Years of Education	Years of Education	Years of Education
	(1)	(2)	(3)	(4)	(5)	(6)
Guerrilla control	-0.101***	-0.260**	-0.121***	-0.277**	-0.121***	-0.274**
	(0.0353)	(0.107)	(0.0358)	(0.109)	(0.0358)	(0.109)
Observations	3,630	3,637	3,630	3,637	3,630	3,637
Bandwidth (Km)	2.266	2.266	2.266	2.266	2.266	2.266
Dependent mean	-0.0330	6.538	-0.0280	6.570	-0.0280	6.565

Notes: The results follow the specification of equation 1 for the Wealth Index and Years of Education outcomes. However, we trim the dependent variables by using different in-migration rates. In Columns 1 and 2, we use the all-time in-migration rate to trim the 10.4 percent most educated and wealthy people and the 3.3 percent least educated and wealthy from the treated and control groups' respective distributions. In Columns 3 and 4, we use the in-migration rate from 1975 to 1980 to trim the 0.4 percent most educated and wealthy people and the 0.6 percent least educated and wealthy from the control group's respective distributions. In Columns 3 and 4, we use the in-migration rate from 1979 to 1985 to trim the 0.7 percent most educated and wealthy people and the 0.8 percent least educated and wealthy from the control group's respective distributions. The unit of observation in all columns is the census tract. Information from all columns was obtained from the Population Census of 2007. Controls not shown include a linear polynomial of the distance to the boundary of guerrilla territory, its interaction with whether the tract was under guerrilla control or not, and up to 400 fixed effects representing the closest evenly spaced break in the guerrilla-controlled boundary. The estimates use triangular kernel weights. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

V.C External validity

In Appendix D, we conducted two analyses to rule out that the results are specific to our rd-sample. First, we show that at baseline the rd-sample is similar in characteristics to the rest of the country (see Table D.11). Second, we show how the main results change once we move outside the 2km bandwidth. Figure D.11 shows that results are pretty homogeneous across space.

VI EXPLORING POTENTIAL MECHANISMS

Why would the FMLN's influence endure so many years after its territorial control ended? As discussed above, one possible explanation concerns the reshaping of economic structures and local governance that led to the demise of the former commercial agriculture system and disengagement with the state.[25] In particular, reliance on plot-based agriculture and lack of public engagement with the state could have created a negative feedback loop that depressed living standards in the long run. We hypothesize that many of these changes continued through the present day due to lasting distrust of the state and elites. We find that even though former guerrilla areas today

[25]While most agricultural elites from the 1950s lost prominence after the civil conflict, distrust of the state and new elites or landowners could still exist due to historical factors even if the new landowners provided better labor conditions.

have more state presence, access to and utilization of public services is still lower than in the control group. We present similar findings for the agriculture sector. Even though the land can still produce commercial crops that could exploit increasing returns to scale, we find that commercially exploited plots are smaller and a larger share of individuals work in subsistence agriculture in the former guerrilla areas. We also find lower productivity and some evidence that the agro-based industry sector is less developed in former guerrilla areas. This pattern could also be explained by distrust towards agriculture elites who were associated with the state. In interviews, we learned that even though commercially oriented farmers would like to invest in these areas, citizens are reluctant to let them due to high distrust of out-groups. This is true even when most of the large landowners or investors have no ties to elites from the 1970s. In this section, we also rule out alternative mechanisms such as an increase in violence, selective migration, lower public and private investment, and child recruitment.

VI.A Transformation of social norms: lower trust in and engagement with the state and associated groups

Both FMLN documents and scholarly work suggest that the organization of the rural population was a key strategy guerrilla rebels employed against the Salvadoran state (FMLN, 1983, 1984; Binford, 1997; Pearce, 1986). In rebel-controlled areas, the FMLN's social base set up participatory forms of government to replace the municipal administration. As noted above, the guerrillas eliminated state and judicial authorities and established community-based organizations—first the PPL and later the "dual powers" plus a variety of community-based organizations—to represent peasants and address key development issues. (Binford, 1997; FMLN, 1984). In particular, as part of their community initiatives, guerrillas implemented communal models of agriculture production with a focus on subsistence crops.

Self-governance institutions can promote the formation of social capital but can also reduce trust in and engagement with the state and related elite groups. First, if self-governance presents an alternative to absent state institutions, it may reduce engagement with the state and the government even when the state regains control. Moreover, disengagement can reduce demand for state services and create informational problems that prevent the state from providing public goods efficiently. Second, disengagement can lead to the continuation of norms of distrust of the state and associated groups associated such as agricultural producers, preventing investment and reinforcing the subsistence economy through the present day. In this section, we study the validity of

this mechanism by examining contemporary attitudes towards the state, public goods provision, and agricultural outcomes.

Table 4 presents the estimates of equation (1) using available data from the Latin American Public Opinion Project (LAPOP) in 2004–2016 for outcomes related to trust and engagement.[26] We used the data to construct four indicators of political attitudes and behaviors including: political participation, engagement with politicians, nondemocratic engagement, and trust in institutions (see more details in Appendix A).

Although individuals living in former FMLN areas are not less likely to participate in politics or to engage violently with politics (Columns 1 and 3), they exhibit less engagement with politicians and less trust in institutions (Columns 2 and 4). We also find evidence of more trust towards members of the community in these areas, providing further evidence on how former guerrilla governance may have reinforced social capital within the community and distrust in the state.[27]

Consistent with the lack of trust in politicians and the state, Table D.12 shows that residents of former FMLN areas were more likely to cast blank votes in the 2014 presidential elections and the 2015 municipal elections. This effect is small given that on average only a low percentage of people vote in blank (one percent at each poll station). Moreover, we find that, if anything, individuals in former guerrilla areas were less likely to vote for the left. However, these votes did not seem to go to the right. For example, in the 2015 municipal elections, the share of blank votes increased at the expense of both the left and the right.[28]

[26] LAPOP conducts surveys of public opinion throughout the Western Hemisphere, including North, Central, and South America and the Caribbean. LAPOP's core project is the AmericasBarometer, a rigorous comparative survey of political and social attitudes and demographic and economic characteristics.

[27] As we show in Table D.13, results are robust when we use the simple sum of questions related to each outcome, instead of the inverse covariance index as in Table 4.

[28] During the (post-conflict) 1989–2009 period, ARENA, the main right-wing political party in El Salvador, won all the presidential elections. After 20 years came the victory of the FMLN candidate Mauricio Funes (2009–2014), which raised expectations among FMLN supporters of an improvement in living conditions. However, several corruption scandals erupted during Funes's presidential term. This could explain the differences in support for the FMLN presidential candidate in 2014 (Salvador Sanchez Ceren) in former guerrilla areas that we observe in the data.

Table 4. Effects of Guerrilla Territorial Control on Attitudes towards the Government

	Inverse Covariance Index (ICW)				
	Political Participation (2004-2016)	Engagement with Politicians (2004-2016)	Non-Democratic Engagement (2004-2016)	Trust in Institutions (2004-2016)	Distrust in Members of the Community (Share) (2004-2016)
	(1)	(2)	(3)	(4)	(5)
Guerrilla control	0.150	-0.501**	-0.131	-0.645**	-0.161**
	(0.186)	(0.251)	(0.252)	(0.277)	(0.0704)
Observations	242	248	172	241	268
Bandwidth (Km)	2.266	2.266	2.266	2.266	2.266
Dependent mean	-0.370	-0.150	-0.0900	-0.230	0.120

Note: The table presents the results of estimating equation 1 for our outcomes related to political discontent and mistrust. Column 1 shows the political participation scope that includes questions regarding whether the citizen votes, attends protests, and attends government meetings. Column 2 reports the engagement with politicians scope that measures the extent to which citizens contact state authorities and/or bureaucracies to solve issues and attend government/political meetings. Column 3 shows the nondemocratic engagement scope that measures the extent to which citizens approve the use of alternative or violent means to engage in politics. Column 4 reports the trust in institutions item that measures the extent to which citizens trust different types of Salvadoran institutions, including the police, the powers of state, and local government. The table reports the inverse covariance-weighted average index as dependent variables. Column 5 reports the share of individuals who report believing that the members of their community are not trustworthy at all. The unit of observation in all columns is the census tract. The information was obtained from the Latin American Public Opinion Project (LAPOP) survey. Controls not shown include a linear polynomial of the distance to the boundary of guerrilla territory, its interaction with whether the tract was under guerrilla control or not, and up to 400 fixed effects representing the closest evenly spaced break in the guerrilla-controlled boundary. The algorithm of Calonico, Cattaneo and Titiunik (2014) was used to set the bandwidth and the estimates weight using a triangular kernel. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

We also examine attitudes towards out-groups such as agriculture elites by conducting focus groups in these communities with key actors in the agriculture and private sector. One common pattern is that individuals from former guerrilla areas are more likely to distrust external actors. Many farmers in these areas associate external actors and agricultural investment with the agricultural elites of the 1950s that were mostly repressive. As one farmer interviewed stated: *"there is a lot of prejudice towards the private sector and large landowners and they are not welcomed in the area since they are not part of the community and want to change the way the community works, which is based on popular arrangements."* This view was also supported by peasants living in the community, who said: *"Here we all know each other and rely a lot on family networks for production."* However, as one private investor stated: *"This model of family or communal agriculture did not work since these areas are poorer today."*

Overall, distrust of out-groups such as the state and large economic actors is still present in these areas even though the self-governing institutions are no longer in place. In the next subsections, we analyze how these differences in social norms affect the durability of changes implemented during guerrilla control, such as the absence of the state and the subsistence economy.

VI.A.1 Transformation of local governance: public goods provision

As mentioned before, less political engagement and less trust in institutions may complicate the provision of public goods by the state and affect demand for state-provided services. We explore the validity of these arguments in Table 5 by examining different contemporaneous outcomes that measure demand and supply of state services. First, we measure the state efforts to provide public goods in these areas by analyzing the effects on public investment. Second, we evaluate the effects on effective state service supply using the total number of schools, hospitals, and state buildings per 100k inhabitants as well as road density as outcomes of interest. Third, to measure the perceived access to and utilization of public goods by citizens in former guerilla areas, we estimate equation (1) using rates of access/usage of sewerage service, potable water, electricity, and garbage collection service. These rates were estimated as the number of households with access to each public service relative to the total number of households in each census tract. (see Appendix A for details on the constructions of these measures).

The estimates yield three key results. First, Column 1 indicates that inside areas of previous guerrilla control, there is more public investment (measured as any government expenditures in social projects related to infrastructure in sectors such as electricity, water and sewerage, and education). Moreover, we show that there are more schools per 100k inhabitants and greater road density in such areas relative to others (see Columns 3 and 4).[29] This result is consistent with qualitative evidence highlighting an increase in school investments in the post-conflict period. However, as shown in the previous section, the larger number of schools inside rebel-held territories did not translate into better educational outcomes.[30]

[29] In Figure D.12, we also assess the yearly number of primary schools where the national exam is administered. Similarly, we find a larger number of such schools since 1999 in former guerrilla areas.

[30] In Table D.14, we also show there are no significant differences in the distance of each segment to the closest local police station (locally known as a *comisaría*) and incarcerations between the treated and control areas, demonstrating that the lack of development in former guerrilla areas is not due to lack of state capacity or enforcement.

Table 5. Effects of Guerrilla Control on Public Goods Provision

Panel A: Supply of State Services and Public goods					
	Public Investment (1995-2015)	Hospitals per 100k Population (2015)	Schools per 100k Population (2007)	Road Density (2014)	Public Buildings per 100k (2020)
	(1)	(2)	(3)	(4)	(5)
Guerrilla control	0.127**	-2.938	27.76***	0.246*	-7.243
	(0.0614)	(4.626)	(10.07)	(0.128)	(139.1)
Observations	1,068	3,668	3,668	3,681	3,275
Dependent mean	0.320	15.21	96.61	1.200	1930
Panel B: Demand of State Services					
	2007 - Share of Households who report having				
	Sewerage Utilization	Garbage Utilization	Water Access	Electricity Access	Daily Water Frequency
	(6)	(7)	(8)	(9)	(10)
Guerrilla control	-0.0255	-0.0523***	-0.0392**	-0.0290***	0.000661
	(0.0180)	(0.0185)	(0.0193)	(0.00862)	(0.0196)
Observations	3,668	3,668	3,668	3,668	3,622
Dependent mean	0.400	0.510	0.780	0.910	0.740
Bandwidth (Km)	2.266	2.266	2.266	2.266	2.266

Note: The table presents the results of estimating equation 1 for our outcomes related to public goods provision. Panel A presents results related to the supply side provision of public goods and services. Panel B shows outcomes related to household demand for public goods and services. Column 1 shows whether the canton has received public investment for any social project (FISDL), mostly related to building or updating infrastructure. Columns 2, 3, and 5 report the number of hospitals, schools, and public buildings per each 100k population, respectively. Column 4 shows the road density in each census tract, which is measured as the length of all roads in the unit divided by their area. Columns 6 to 9 report the treatment effect on the share of households with any of the marked services within each census tract. Column 10 shows whether the household receives water daily or not. Information in the latter columns comes from the Population Census of 2007. Information in Columns 2 and 4 comes from Google maps. The unit of observation in Column 1 is the canton, but for the rest of the columns is the census tract. Controls not shown include a linear polynomial of the distance to the boundary of guerrilla territory, its interaction with whether the tract was under guerrilla control or not, and up to 400 fixed effects that represent the closest evenly spaced break in the guerrilla-controlled boundary. The estimates weight using a triangular kernel. Robust standard errors in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Second, in terms of demand, citizens report less access to and utilization of public services in former guerrilla areas relative to other areas (Columns 6–9). Importantly, we find less demand for the exact services in which we observe an increase in public investment. Third, we also examine how the access to and utilization of public services is affected by the quality of these services. Column 10 shows there are no differences in reported daily water frequency across the boundaries. In Table D.15, we also analyze whether the quality of education, measured by the education of teachers and the actual number of teachers, is lower in areas with past guerrilla presence relative to others. This might explain why there are worse education outcomes despite the larger presence

of physical schools inside treated areas. However, we do not find evidence of any significant differences in either of these variables; this suggests that the quality of education was not different across treatment and control areas. The effects of FMLN control in public goods provision are robust to different bandwidths, as shown in Figure D.13. The graphic representation of these effects is also illustrated in Figure D.14.

All in all, areas with past guerrilla presence have higher investments in infrastructure. At the same time, residents of these areas also report less access to/utilization of public services relative to those in the control areas. The low levels of institutional trust and political engagement may partly explain these effects: if citizens do not trust the state, they will demand fewer public goods or believe they do not have adequate access.

VI.A.2 Transformation of economic structures: land fragmentation, agricultural productivity, and inequality

As part of their self-governance initiatives, the FMLN promoted land access to formerly landless peasants. The group invited peasants in its areas to occupy and cultivate properties formerly owned by large landowners. In the absence of state authorities, many peasants organized cooperatives and occupied tens of thousands of hectares of land, eventually claiming these properties under the terms of the peace agreement (Wood, 2010). By the war's end, new patterns of land tenure and use had been consolidated.

This transfer of agrarian property rights eliminated large extension crops for export and converted the land into small plots. The peasants' newfound land access and their wariness of political and economic elites may have prevented the scale-up of farming activities due to their refusal to sell to large landowners or allow them to enter the market. This restricted improvements in their material well-being and increased their attachment to these lands, highlighting an important economic mechanism that links the FMLN with lower development through greater fragmentation of agricultural land and lower productivity. We explore this hypothesis by studying the effects of guerrilla control on agricultural productivity and land fragmentation today.

Land fragmentation

Given that guerrilla-controlled areas experienced a redistribution of commercial plots to peasants from 1985 to 1992, we start by analyzing the amount of land fragmentation today in former FMLN areas. First, we consider the plot size in those areas relative to places nearby. Table 6 shows that

commercial plots are much smaller inside former guerrilla areas. We find this for every type of plot we examined, whether owned or rented (see Columns 1 and 2, respectively). In addition, Column 3 shows that the plot size for cultivation is also smaller for commercial producers (Panel A). In contrast, we find no differences for subsistence crops (Panel B); this offers further evidence that the land fragmentation of the Civil War period still exists today. This result is confirmed in Column 4, which shows that the share of land owned by commercial farmers is much smaller within former FMLN areas. In Table D.16 in the Appendix, we also look at the Simpson index to measure land fragmentation. Consistent with these results, we find more land fragmentation in former FMLN areas relative to nearby locations.

Agricultural productivity

Next, we analyze whether changes in economic production during the period of guerrilla control led to changes in agricultural productivity today. Table 7 presents the results of the spatial RD analysis for the total extension of land cropped (panel A), the share of the land harvested (panel B), and the actual crop yield in 2005 (panel C). Consistent with qualitative evidence, we find that the production of export crops such as sugarcane was significantly reduced. Moreover, the measures of productivity are much lower in later years in former guerrilla areas. The estimates confirm that actual crop yield was lower for all crops within controlled areas.

In the Appendix, we also explore differences in the occupations of employed individuals currently living in former guerrilla areas relative to other areas. Unsurprisingly (and in line with previous results) we find that individuals in these areas work disproportionately in agriculture (specifically subsistence agriculture) but less in other occupations known to create more value added including, for example, agro-based industry and services (See Table D.17 and Figure D.15). These occupational differences between the treated and control areas are maintained even as the bandwidth around the discontinuity is increased from two to 18 km, suggesting that these differences are not affected by the location or creation of urban centers close to the discontinuity (See Figure D.16).

Table 6. Effects of Guerrilla Control on the Size of Plots

	Own Area (2007)	Total Area (2007)	Cultivated Area (2007)	Share of Owned Area (2007)
	(1)	(2)	(3)	(4)
Panel A: Size of Plots by Producers Focused in Commercial Activity (Has)				
Guerrilla control	-1.100**	-1.255**	-0.543**	-0.0402*
	(0.538)	(0.541)	(0.231)	(0.0233)
Observations	2,021	2,003	2,017	1,838
Bandwidth (Km)	2.266	2.266	2.266	2.266
Dependent mean	5.135	6.799	2.529	0.352
Panel B: Size of Plots by Producers Focused in Subsistence Activities (Has)				
Guerrilla control	0.00451	0.0202	0.0133	0.0183
	(0.0146)	(0.0160)	(0.0124)	(0.0276)
Observations	2,309	2,298	2,292	1,677
Bandwidth (Km)	2.266	2.266	2.266	2.266
Dependent mean	0.228	0.656	0.596	0.678

Note: The table presents the results of estimating equation 1 for our outcomes related to the size of land used by producers for their agricultural activity. Panel A shows the outcomes for the average plot managed by producers focused on commercial activities. Panel B does the same, but for the average plot managed by producers focused on subsistence activities. Column 1 uses as dependent variable the size of the land the producer owns. Column 2 uses the size of the total land the producer manages, which could also include rented land. Column 3 uses the area cultivated by the producer. Column 4 uses the share of the total area managed by the producer that the producer owns. The information in all columns comes from the Agricultural National Census of 2007. The unit of observation in all columns is the census tract. Controls not shown include a linear polynomial of the distance to the boundary of guerrilla territory, its interaction with whether the tract was under guerrilla control or not, and up to 400 fixed effects representing the closest evenly spaced break in the guerrilla-controlled boundary. The estimates use triangular kernel weights. Robust standard errors in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table 7. Effects of Guerrilla Control on Agricultural Productivity

Panel A: Crop Production in 2005 (1000 Tons)				
	Subsistence crops		Cash crops	
	Bean	Maize	Coffee	Sugarcane
	(1)	(2)	(3)	(4)
Guerrilla control	-0.00167	-0.0110	-0.00540	-1.829***
	(0.00161)	(0.0324)	(0.00789)	(0.529)
Observations	3,652	3,652	3,652	3,652
Dependent mean	0.102	1.914	0.458	15.460
Panel B: Share of harvest in 2005 (Has)				
Guerrilla control	-0.0112***	-0.0310***	-0.0202***	-0.00357
	(0.00356)	(0.0109)	(0.00753)	(0.00230)
Observations	3,651	3,651	3,651	3,651
Dependent mean	0.0360	0.113	0.0780	0.0260
Panel C: Actual Crops' Yield in 2005 (Tons/Ha)				
Guerrilla control	-0.00471***	-0.0161***	-0.00622**	-1.078***
	(0.00126)	(0.00586)	(0.00242)	(0.241)
Observations	3,566	3,550	3,649	3,649
Dependent mean	0.400	2.254	0.835	61.220
Bandwidth (Km)	2.266	2.266	2.266	2.266

Notes: The table presents the results of estimating equation (1) for outcomes related to agriculture. Panel A shows results using as dependent variable each crop's production in 1,000 tons. Panel B uses as dependent variable the share of harvested land of each crop from the total area of each census tract. Panel C uses the actual yield of each crop, which is measured as the total production over the total of cultivated land for each crop. The unit of observation in all columns is the census tract. Controls not shown include a linear polynomial of the distance to the boundary of guerrilla territory, its interaction with whether the tract was under guerrilla control or not, and up to 400 fixed effects representing the closest evenly spaced break in the guerrilla-controlled boundary. The algorithm of Calonico, Cattaneo and Titiunik (2014) was used to set the bandwidth and the estimates use triangular kernel weights. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Inequality and cooperatives

As shown in the previous section, guerrilla-controlled areas were more likely to experience land fragmentation and remain divided today. It is possible, however, that even though these areas are poorer, there may be less income inequality. We explore this notion by evaluating reported income from household surveys and the wealth index from the demographic census.

Table D.18 presents results for different measures of inequality. We find that while individuals have less income in former guerrilla areas (Columns 1 and 2), there is no evidence of lower in-

equality in terms of wealth assets or income. This result is robust to different measures.[31] Moreover, we also find no difference in whether farmers belong to a cooperative in a former FMLN territory relative to areas outside (see Table D.20). This result also aligns with the evidence in Table 1 showing there were no baseline differences in the state-implemented land reform across the boundaries in 1980. This reform transformed many of the large plots into cooperatives. Although the FMLN redistributed land to peasants, most of its agriculture programs targeted subsistence crops. There was no program to teach peasants how to grow and commercialize export crops.

VI.B Ruling out differences in land tenure

In the previous section, we posited that enduring distrust of elites and the state in former guerrilla areas prevented the entrance of large landowners and private investment in general, isolating these communities from improvements in productivity. Another possibility is that individuals from guerrilla areas remained attached to the land since they did not have the right to sell it. This is unlikely since a major aspect of the Peace Agreements was to respect the existing land tenure during guerrilla territorial control.[32] Indeed, using the Agriculture Census, we do not observe that there are differences between treatment and control areas in land ownership or land property rights.[33]

VI.C Ruling out migration

This section explores potential differences in migration patterns in guerrilla-controlled areas compared to areas outside the boundary. As explained above, guerrilla areas promoted changes in the economic structure that might have induced different patterns of worker selection. For example, high-ability workers could have migrated from these areas due to fear of expropriation of their income (out-migration). At the same time, there could have been adverse selection of workers if guerrilla-held areas attracted less-productive peasants or individuals with more egalitarian preferences into the areas (in-migration).

We explore these migration patterns empirically in Table 8 using data from the 2007 census. Columns 1–5 examine impacts on international migration. In particular, we estimated equation (1) for the share of international emigrants during the period of FMLN territorial control and af-

[31] We also checked the robustness of these results using the Wealth Index from the 2007 Census at the census tract level (Table D.19). We do not find any difference across the boundary when using this measure to assess inequality.

[32] As mentioned in Section II.D, the agreement established that individuals occupying land in "conflict zones" could keep it. The state was in charge of administering land with anyone who claimed ownership; it gave current occupants a land title and 30 years to pay for the land.

[33] Results are available upon request.

terward, the number of years since the international emigrant left the household, and the share of households receiving remittances. Unfortunately, the 2007 census does not include questions related to internal migration. However, international migration is significant in El Salvador.

The results suggest that individuals in former guerrilla areas were not more likely to migrate abroad or to receive remittances than individuals in nearby locations, and that—if anything—migration abroad seems to be more recent. The coefficients are also negative, indicating that individuals were less likely to migrate internationally. These results provide evidence that former guerrilla areas did not face more "brain drain," a result consistent with the idea that elites were not living in these locations and mainly left their operations in these locations when their workers stayed. Moreover, it accords with the idea that peasants supported the guerrilla movement and wanted to stay in these locations.

We examine in-migration outcomes in Columns 6–9 using data from the 2007 census. To evaluate if there was more migration into rebel areas, we estimated equation (1) for the share of individuals who always lived in the same location, the share of individuals who lived in the same location as their mothers, in-migration during the Civil War period, and years since arrival. Further explanation of the definition of each variable is in Appendix A.

The results show no evidence of large differences in migration patterns for areas under guerrilla control. Moreover, the coefficient estimates are positive, suggesting that areas under guerrilla control were less likely to have more in-migration. Importantly, the magnitude of the estimated coefficients is small and close to zero for all these outcomes. The sign of the coefficients is consistent with the idea that communities in previously controlled areas are closed to external individuals.

To further examine whether there was more migration by highly educated individuals from FMLN areas, we examined the same outcomes in Columns 6–9 of Table D.21 using the sample of individuals who had finished at least high school by the time the conflict started. The magnitude of all the coefficients in Table D.21 is close to zero and not significant, implying that migration of highly educated individuals may not be driving the effects. Moreover, the sign of the coefficients in Columns 6–8 highlights that, if anything, more in-migration of highly selected individuals occurred.

Table 8. Effects of Guerrilla Control on Migration Outcomes

	International Migrants					Always Lived in	Same Location	People who Arrived	Years since
	During Control	At any time	Years since	Households who Received	Received Remittance from	same Location	as the Mother	During Control	Arrival
	(Share)	(Share)	departure	Remittances (Share)	War Migrant (Share)	(Share)	(Share)	(Share)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Guerrilla control	-0.00219	-0.00221	-0.341	-0.00674	-0.00194	0.00788	0.00648	-0.00452	-0.218
	(0.00171)	(0.00498)	(0.27700)	(0.00427)	(0.00126)	(0.00956)	(0.00978)	(0.00321)	(0.41100)
Observations	3,637	3,637	3,396	3,637	3,637	3,637	3,637	3,637	3,524
Bandwidth (Km)	2.266	2.266	2.266	2.266	2.266	2.266	2.266	2.266	2.266
Dependent mean	0.0230	0.112	7.416	0.103	0.0140	0.766	0.730	0.0620	16.470

Note: The table presents the results of equation 1 for our outcomes related to migration. Columns 1–5 focus on outcomes for international migrants. Columns 6–9 focus on internal in-migration flows. All information was obtained from the Population Census of 2007. The unit of observation in all columns is the census tract. Controls not shown include a linear polynomial of the distance to the boundary of guerrilla territory, its interaction with whether the tract was under guerrilla control or not, and up to 400 fixed effects representing the closest evenly spaced break in the guerrilla-controlled boundary. The algorithm of Calonico, Cattaneo and Titiunik (2014) was used to set the bandwidth and the estimates use triangular kernel weights. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Finally, we also looked at temporal migration for work by analyzing whether individuals work in a different census tract or municipality from where they live across the boundaries (Table D.22). We do not find that individuals from former guerrilla areas are more likely to work outside their area, providing further evidence that out-migration may not drive the results.

It is puzzling that individuals do not migrate today given better economic opportunities in nearby areas. One potential explanation is that individuals who live in guerrilla areas today prefer not to leave their village due to strong social ties among their community, more "rootedness," and because they do not trust outsiders. This idea is in line with our results in Table 4 column 5, where we show that individuals in former guerrilla areas are more likely to trust the members of their community relative to individuals of nearby areas.

Evidence has shown that individuals can be attached to their land when property rights are not defined or depend on land use, and plots are isolated from large markets (Albertus, Espinoza and Fort, 2020; De Janvry et al., 2015). Two elements suggest this was not the case for El Salvador. First, after the 1992 peace agreements, the state recognized property rights over the land invaded by guerrillas and consequently, individuals could sell their land and migrate to other places if they wished. Second, we also show that our results do not vary according to the distance of each individual to the road network or a main city (see Table D.23).

VI.D Ruling out conflict and violence persistence

This section explores whether the negative effects of guerrilla control stemmed mainly from higher conflict or the persistence of violence, which may have been more intense in areas close to the boundary where territorial control was contested. As such, conflict or violence may be the source of the negative effects in the development outcomes.

We tested this mechanism in several ways. First, we estimated equation (1), controlling for the segments of disputed areas where the Salvadoran government and the guerrillas usually fought. Second, we used a doughnut-hole approach to exclude all observations within 80 m from the boundary of guerrilla-held territories.[34]

Results for the main outcomes of interest from these exercises are in Table 9. In general, the coefficients are negative, statistically significant, and similar in size. This suggests conflict is not the main factor behind the negative effects of guerrilla control. We obtain similar results using outcomes of war crimes, including number of deaths, disappearances, and other crimes associated with the conflict as reported by The Truth Commission. Results in Table D.24 once again support the idea that areas under guerrilla control did not experience disproportionately higher crimes relative to other areas. The negative coefficient associated with the war crime estimates suggests that guerrilla areas experienced less crimes, leading to lower-bound estimates of our main outcomes.

Finally, we appraise the role of guerrilla control in contemporaneous measures of crime and judge whether the historical presence of guerrillas prevented the development of criminal actors such as gangs. On the one hand, the social capital left in former guerrilla areas may have done so (Sviatschi, 2020). Tightly knit communities with strong social ties are better able to prevent crime because they raise detection probabilities and attach shame to criminal behaviors (Buonanno, Montolio and Vanin, 2009). If social capital lasts, we expect fewer crimes associated with non-state armed actors, which are pervasive in El Salvador. On the other hand, if our results stemmed from violence during or after the control of these areas, we should expect more violence today. To test these hypotheses, we considered homicide rates during 2017 using police data, and victimization rates from 2004 to 2016 found in LAPOP surveys.

Table D.25 in the Appendix presents the results. Consistent with the findings that violence during the conflict was not greater in guerrilla-controlled areas, the results largely suggest no differences

[34] We excluded all segments within an 80 m distance to shut off almost every segment close to the boundary and inside the guerrilla zone with an immediate neighbor outside it.

in homicide rates between areas once under and outside FMLN control.[35] If anything, the estimates are negative, which suggests that the documented differences in long-term development did not arise from increases in conflict or violence. Moreover, there is evidence that residents of areas once under guerrilla control are less likely to be victims of violent crime or extortion related to gang activity. This aligns with enduring norms of cooperation and higher levels of social capital as well as with qualitative evidence gathered from interviews with locals and former guerrilla commanders, who repeatedly expressed thoughts such as: *"the fact that the maras (gangs) are barely present in these areas reflects that the self-organization of the people worked."* (Joaquín Villalobos, FMLN Military Commander, interview conducted on March 23, 2022).

VI.E Other mechanisms

In this section we discuss other potential mechanisms that could underlie the results such as child recruitment, disproportionate improvements in control areas, or changes in the supply and quality of education.

Peace agreement and post-conflict policies— As we noted in the background section, all the reforms of the peace agreement (e.g., the reform in the Judicial System) were implemented at the national level and may not drive our effects. For example, although the peace agreement created a national police force, we find no differences in enforcement or number of state institutions across areas. Moreover, as we have shown, the results do not stem from differences in post-land redistribution that was also part of the agreement. Finally, the political environment after the conflict does not seem to explain the results. For example, the ARENA government elected in the first period after the peace agreement did not lower public investment in a bid to punish guerrilla areas. Although we cannot assess the voting patterns of these areas immediately after the conflict, evidence from the elections of 2014 and 2015 do not show that these areas favored a specific political party. If anything, there was a small and negative effect on the vote share for the leftist party, as shown in Table D.12. In fact, we find that effects on development are still negative when the FMLN won elections. Moreover,there were significant efforts at reconstruction following the conflict that resulted in investments and infrastructure, mostly roads and schools. We show that former guerrilla areas received more of this investment, not less.

[35] Figures D.17 and D.18 confirm this result for different bandwidths.

Table 9. Effects of Guerrilla Territorial Control on Main Outcomes, Controlling for Conflict

Panel A: Separating Guerrilla disputed areas from Governmental controlled areas			
	Night Light Arcsine	Wealth Score	Years of Education
	(2013)	(2007)	(2007)
	(1)	(2)	(3)
Guerrilla control	-0.127***	-0.170***	-0.438**
	(0.0314)	(0.0587)	(0.188)
Disputed area	0.0851*	-0.0670	-0.230
	(0.0473)	(0.0678)	(0.207)
Observations	3,652	3,630	3,637
Bandwidth (Km)	2.266	2.266	2.266
Dependent mean	3.536	-0.0160	6.573
Panel B: Donut Hole Analysis (400 mts)			
Guerrilla control	-0.164***	-0.123**	-0.308**
	(0.0520)	(0.0541)	(0.153)
Observations	1,564	1,555	1,555
Bandwidth (Km)	0.981	0.981	0.981
Dependent mean	3.245	-0.197	5.845

Note: The table presents results for the main outcomes but under different specifications that help discard the hypothesis that effects were driven by conflict. Panel A shows results when separating the control group between government-controlled areas and areas that were disputed by guerrillas. Notice that in panel A, the omitted category concerns segments under pure governmental dominance. Panel B shows results using a doughnut-hole methodology with a hole of 400 meters. The unit of observation in all columns is the census tract. Controls not shown include a linear polynomial of the distance to the boundary of guerrilla territory, its interaction with whether the tract was under guerrilla control or not, and up to 400 fixed effects representing the closest evenly spaced break in the guerrilla-controlled boundary. The algorithm of Calonico, Cattaneo and Titiunik (2014) was used to set the bandwidth and the estimates weight using a triangular kernel. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Recruitment— Coercive recruitment has figured prominently in work that ties civil conflict to lower levels of education. Early military experience is a bad substitute for education and labor market experience, and child soldiers lose key formative years of schooling (Blattman and Miguel, 2010). Nonetheless, the evidence shows that it is unlikely to be the force behind our results. First, child soldiers were not prominent in the FMLN. Estimates suggest that of the 9,000–12,000 FMLN members, only 2,000 were under age 18, or about 20 percent, while the percentage of under-

age combatants in the Salvadoran Army was 80 percent (48,000 of 60,000 combatants) (Courtney, 2010). Moreover, most historical studies conclude that FMLN recruitment was mostly voluntary. A study UNICEF conducted at the end of the war shows that while 91.7 percent of FMLN recruits had joined voluntarily, close to 53 percent of underage Salvadoran Army soldiers were forcibly recruited (Courtney, 2010).

Post-conflict investment in guerrilla areas— In terms of private investment, we do not find qualitative evidence that large agricultural producers or firms are less willing to invest in these locations. Moreover, several counterarguments suggest that lower private investment does not underpin our main results. First, control group areas are extremely close (just 2 km away); thus, it is difficult to argue why private investment would target nearby control areas but not guerrilla areas, since the guerrillas were gone by the post-war period. Second, it is highly unlikely that contemporaneous investors know of the boundary with former guerrilla areas in the 1980s. In fact, these boundaries do not overlap with the country's administrative division or its road network. In other words, the boundaries are not salient. Evidence from our focus groups supports this argument since few of our interviewees knew the exact boundaries of these areas. (If anything, they knew which municipalities wereaffected by guerrillas but not the exact boundaries). Third, there are no differences between treatment and control areas in the number of new businesses such as restaurants, malls, and markets across the boundaries.[36] Finally, we do not find evidence that fear of expropriation in former guerrilla areas explains the results. We find that residents of these areas are as likely as those in the control group to believe invading private property or engaging in atidemocratic behavior is acceptable (See Table D.26).

Spillovers in non-guerrilla areas during territorial control and in the post-war period— We also rule out that effects stem from counter-insurgency in nearby areas in the control group during guerrilla control. It's also possible that nearby control areas benefited from the lack of development or the agricultural focus of guerrilla areas. In this case, effects would be concentrated close to the boundary or just in the rd sample. First, evidence from the doughnut-hole analysis shows this is not the case: effects are robust to excluding observations close to the boundary. Second, if we increase the sample beyond the bandwidth to 17 km, we see homogeneous effects on development.[37]

[36]We checked for this possibility by digitizing the number of commercial establishments 2 km around the boundary of past guerrilla presence using Google Maps. We could not distinguish any significant differences between treated and control areas in the number of commercial establishments. The estimates are available upon request.

[37]One potential concern (as with many rd designs) is that we observe cross-sectional differences today in development. Therefore, due to the lack of panel data, we cannot disentangle how much the effects originate in improvements

VII DISCUSSION

This paper explores the long-term development impacts of guerrilla territorial control in El Salvador. The empirical methodology uses a spatial regression discontinuity that compares night light luminosity, wealth, and human capital between areas close to the boundary of FMLN control.

The results suggest that guerrilla control had sizable negative and persistent consequences for night light luminosity, wealth, and human capital. These effects are not completely accounted for by sorting from treated areas, out-migration, higher conflict intensity, child recruitment by rebels, lower public and private investment, or differences in education quality. We believe our main results arise from the guerrilla-directed transformation of local governance structures and social capital, which led to enduring changes in economic structures and cooperation with the state. In fact, areas occupied by guerrillas in the past today feature higher political discontent and institutional distrust, smaller land holdings, and lower agricultural productivity. Moreover, they have largely abandoned agricultural activities related to commercial exploitation in favor of subsistence activities.

These findings offer key insights for other countries experiencing internal armed conflict or post-conflict development but which do not have quality data to conduct similar analyses. In particular, these results suggest that areas under rebel governance may have embarked on a negative development path that is likely to persist. In fact, we suggest that an increase in public investment itself is not enough to guarantee recovery in such areas, and that it is crucial to build trust in the state and external private sector actors to foster more productive growth in the long term.

This paper also provides evidence of a mismatch between historic cultural norms like trust in the state and the action that may be best in the current environment. Before the El Salvadoran conflict and the guerrilla seizure of territory, the state and associated elites had repressed the rural peasantry for more than 100 years. This created the distrust later reinforced in guerrilla territories; it endures today long after the disappearance of those state and elite actors and in spite of the fact that communities might benefit from engaging with the new government. Although extreme

in the control group and deterioration in guerrilla areas over time versus just improvements in the control group and no changes in guerrilla areas. Hence, we analyze heterogeneous effects based on distance to a main road, distance to a city, and population density. If effects emerged only via improvements in control areas but no changes in the treated group, we would expect a mitigation of the negative effects on development in better-connected regions. Table D.23 shows this is not the case. These results imply that even areas that were more developed before guerrilla control are equally affected by their previous presence today.

distrust of the state may have been an optimal response during the civil conflict, this may not be true today.

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Contents (Appendix)

A Data Sources and Variable Definitions

A.A *Guerrilla territories*

- **Territories under control by 1991:** Following Castañeda (2016), this study uses the maps that document FMLN-held areas as submitted to the United Nations and approved by the different political parties in El Salvador during the ceasefire process. Since the map originally had an image format, we used ArcMap to digitize it by hand and convert it to a shapefile format. Thus, this is the only part of the spatial analysis that is not coded.

A.B *Geospatial variables*

- **Night light luminosity:** Data on night light luminosity comes from the Defense Meteorological Satellite Program Operational Linescan System (DMSP-OLS). This data was obtained from the US National Oceanic and Atmospheric Administration (NOAA) at https://ngdc.noaa.gov/eog/download.html. This data has a resolution of 30 arc seconds (1 km^2) and spans 1992 to 2013. We present results using the 2013 data as it is the last year available. However, the challenge with night light luminosity data is the significant fraction of observations that take the value of zero and the existence of extreme values in the right tail of the distribution (Michalopoulos and Papaioannou, 2013; Pinkovskiy and Sala-i Martin, 2016). To account for this potential concern, we adjust the outcome of interest using the logarithm and the inverse hyperbolic sine transformation.[38]

- **Elevation:** Elevation was obtained from the Google Earth Engine Data Catalog and is available at https://developers.google.com/earth-engine/datasets/catalog/USGS_SRTMGL1_003. This data provides elevation information in meters at the 3 arc-seconds spatial resolution (90 mts^2). The digital elevation model (DEM) was created based on the images of the Shuttle Radar Topography Mission (SRTM) of NASA. In this study, we calculated the average elevation for each census tract.

- **Slope:** this study uses the terrain() function in R to compute the slope from the elevation data accordingly with Ritter (1987).[39] The algorithm uses four neighboring pixels to compute each pixel's slope in degrees. Thus, higher values represent steeper terrain. Our study uses the average of the slope at the census tract level.

[38] The inverse hyperbolic sine transformation is defined as $log(y_i + (y_i^2 + 1)^{1/2})$ and can be interpreted as a logarithmic dependent variable (Pence, 2006).

[39] Documentation of the R tool can be found at https://www.rdocumentation.org/packages/raster/versions/3.4-10/topics/terrain

- **Ruggedness:** This study implements the terrain ruggedness index of Riley, DeGloria and Elliot (1999) using the tri() function in R.[40] The algorithm uses five neighboring pixels to calculate each pixel's index from the elevation data. Our study uses the average of the ruggedness index at the census tract level.

- **Rivers and lakes:** Information on surface water bodies comes from the Google Earth Engine Data Catalog and is available at https://developers.google.com/earth-engine/datasets/catalog/MERIT_Hydro_v1_0_1. The data comes from the MERIT Hydro dataset with a 3 arc-seconds spatial resolution (90 mts^2). Our variables take the value of one if a river or lake passes by a census tract.

- **Precipitation:** Precipitation was obtained from the Global Climate Database created by Hijmans et al. (2005) that is available at http://www.worldclim.org/. This data provides a historic time series of rainfall in millimeters from 1960 to 2018 at the 2.5 minutes spatial resolution (21 km^2) with a monthly periodicity. This study standardizes the series from 1960 to 1979 and calculates the standardized average of rainfall for each census tract from 1975 to 1979.

- **Temperature:** Maximum temperature was obtained at the Global Climate Database created by Hijmans et al. (2005) and is available at http://www.worldclim.org/. This data provides a historic time series of temperature in Celsius from 1960 to 2018 with a monthly periodicity at the 2.5 minutes spatial resolution (21 km^2) with a monthly periodicity. This study standardizes the series from 1960 to 1979 and calculates the standardized average of temperature for each census tract from 1975 to 1979.

- **Historical crop yield:** Agro-climatic yield rasters were obtained from the Global Agro-Ecological Zones version 3.0 (GAEZ v 3.0) project and are available at https://www.gaez.iiasa.ac.at. The data has a spatial resolution of 5 arc-minutes (9 km^2) and a yearly periodicity. We used the 30-year average starting in 1961 of the most relevant crops in terms of consumption and exports for 1990 (i.e., coffee, cotton, rice, beans, and sugarcane).

- **Roads and railways in 1980:** the map outlining the road and railway network in 1980 for El Salvador was obtained from the United States Library of Congress and is available at https://www.loc.gov/resource/g4840.ct000627/. This map was made by the

[40] Documentation of the R tool can be found at https://www.rdocumentation.org/packages/spatialEco/versions/1.3-7/topics/tri

Central Intelligence Agency. Since the map originally had an image format, we used ArcMap to digitize it by hand and convert it to a shapefile format. Our variable takes the value of one if a census tract contains part of a road or railway.

- **Distance to the capital:** We calculated the Euclidean distance in kilometers from the centroid of each census tract to San Salvador, the capital city of El Salvador.
- **Distance to the coast:** We calculated the Euclidean distance in kilometers from the centroid of each census tract to the nearest coast.
- **Distance to departmental boundaries:** We calculated the Euclidean distance in kilometers from the centroid of each census tract to the nearest departmental boundary.

A.C *Population and Household Census of 2007 (PHC)*

The PHC of 2007 is available at http://www.censos.gob.sv/censo/Default.aspx.

- **Census cartography:** DIGESTYC also provided maps of the 12,435 census tracts (*segmentos censales*) in the 2007 census. Each census tract represents a small area with a fixed geographic perimeter. On average, they have an area of 1.7 km^2, a perimeter of 5.5 km, 131 households, and 473 individuals.
- **Wealth score:** we built a wealth score that represents the living conditions of each household using household characteristics and asset ownership such as the type of roof, access to water, television, etc. To construct the score, we used a principal component analysis following the steps recommended by the Demographic and Health Surveys program (DHS), which can be consulted at https://dhsprogram.com/topics/wealth-index/Wealth-Index-Construction.cfm. We calculate the average of this measure for each census tract.
- **Years of education:** The PHC asks each individual the total number of years of education in single years. However, our variable only takes into account individuals older than 18 years since most of this population already finished secondary school. We calculate the average of this variable for each census tract.
- **Literacy rate:** The PHC asks each individual if they can read and write. Thus, our literacy rate variable is the number of individuals older than 18 years who can read in each tract over the total population in the same age range in the same tract.
- **Public good provision rates:** The PHC asks each household if they have water access, sew-

erage, electricity, and garbage services. Our rates are calculated as the total number of households who report having the service in each tract over the total households in the same tract.

- **Total number of hospitals:** The Ministry of Health of El Salvador provided us with the location of all hospitals in El Salvador in 2015. The variable we use is the total number of hospitals in each census tract.
- **Total number of schools:** The Ministry of Health of El Salvador provided us with the location of all schools in El Salvador in 2007. The variable we use is the total number of schools in each census tract.
- **Economically active population:** Our variable is calculated at the segment level and is the sum of all people 16 years or older who are working or in search of work in the census tract over the people in the same age range in the same tract.
- **Working population:** Our variable is calculated as the total individuals who worked last week at least one hour, no matter the occupation, in a given census tract. This variable is normalized by the total population aged 16 years or older.
- **Salaried population:** Our variable is calculated as the total individuals in a given census tract who worked last week and received any sort of compensation for it. This variable is normalized by the total population aged 16 years or older.
- **Public workers:** Our variable is calculated as the total individuals in a given census tract who worked last week in the public sector. This variable is normalized by the total population aged 16 years or older.
- **Independent workers:** Our variable is calculated as the total individuals in a given census tract who worked last week as independent workers. This variable is normalized by the total population aged 16 years or older.
- **Total of employers:** Our variable is calculated as the total individuals in a given census tract who employed at least one person for his or her own business. This variable is normalized by the total population aged 16 years or older.
- **Weekly worked hours:** These are the average hours the working population worked last week in a given census tract.

- **International migrants:** This is the total number of people who are reported by their households to be outside El Salvador in 2007 for each census tract.
- **International migrants in the war period:** This is the total number of people who left El Salvador between 1979 and 1990 and are reported by their households to be outside El Salvador in 2007 for each census tract.
- **Remittances rate:** This is the share of households in a given census tract that report receiving monetary help from a member outside El Salvador in 2007.
- **In-migration during the war period:** This is the total number of individuals who reported in 2007 that they arrived in a given census tract between 1979 and 1990.
- **Moving population:** This is calculated as the number of people in a given census tract who reported in 2007 any relocation in their entire life.
- **Moving population share:** This is calculated as the moving population in each census tract over the total population in the same tract.

A.D *Presidential election results*

All data related to elections was provided by the Tribunal Supremo Electoral of El Salvador, which included the list of results and coordinates for each polling station.

- **Left voting share:** This is calculated as the total votes for the FMLN party over the total valid votes for each polling station in El Salvador.
- **Right voting share:** This is calculated as the total votes for the ARENA party over the total valid votes for each polling station in El Salvador.
- **Blank voting share:** This is calculated as the total blank votes over the total valid votes for each polling station in El Salvador.
- **Turnout share:** This is calculated as the total valid votes over the total number of people registered to vote in each polling station in El Salvador.

B Descriptive Statistics

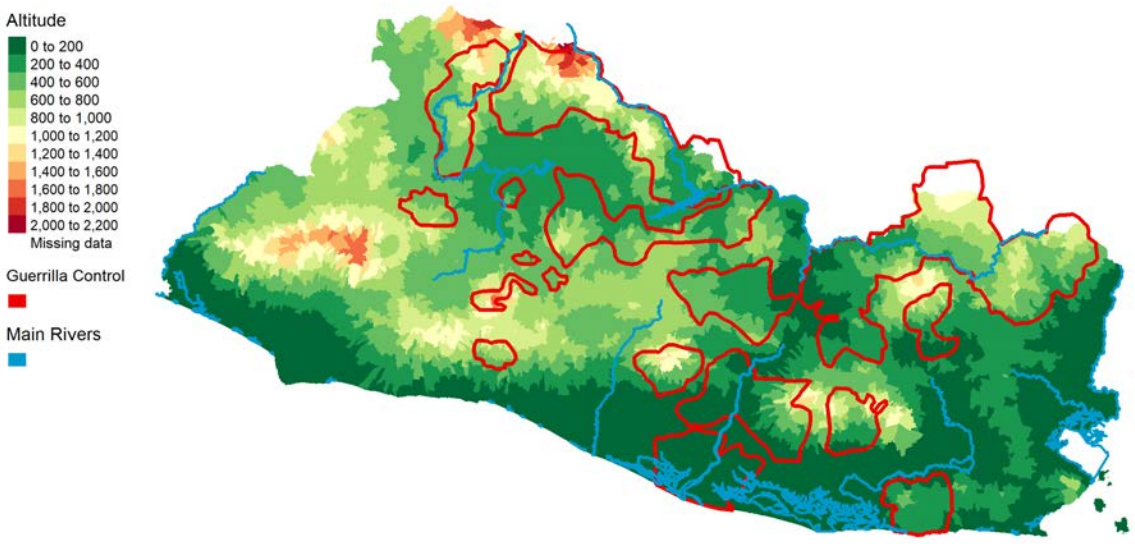
Table B.1. Summary Statistics of the Variables Used in the Estimation

	Mean	SD	Min	Max	Obs
Panel A: Ceasefire map of 1991					
Segment under guerrilla control	0.167	0.373	0.000	1.000	12,435
Distance to nearest controlled area	-8.647	12.243	-67.010	17.955	12,435
Panel B: Geographic characteristics					
Night light density (2013)	25.560	23.436	0.000	62.258	12,432
Arcsine(Night light)	3.181	1.471	0.000	4.825	12,432
Log(Night light)	2.419	1.609	-12.084	4.131	12,432
Night light (Weighted by surfice area)	25.560	23.436	0.000	62.258	12,432
Altitude (DEM)	496.403	287.500	0.000	2,185.623	12,433
Slope	7.458	5.153	0.000	30.127	12,432
Ruggedness	10.916	8.274	0.000	184.795	12,432
Hydrography	0.282	0.450	0.000	1.000	12,435
Coffe Yield (1961-1990)	1.606	0.203	0.339	2.982	12,427
Cotton Yield (1961-1990)	0.742	0.086	0.000	1.006	12,427
Dry Rice Yield (1961-1990)	5.231	0.514	0.000	5.615	12,427
Wet Rice Yield (1961-1990)	8.805	0.905	0.000	9.381	12,427
Bean Yield (1961-1990)	4.097	0.180	2.674	4.470	12,427
Sugarcane Yield (1961-1990)	6.257	1.075	0.000	8.884	12,427
Monthly Mean Rainfall (1975-1979)			-0.067	-0.032	12,301
Monthly Minimum Temperature (1975-1979)	0.121	0.035	0.068	0.218	12,301
Monthly Maximum Temperature (1975-1979)	0.207	0.055	0.119	0.413	12,301
Roads and Railway (1980)	0.376	0.484	0.000	1.000	12,435
Distance to Coast	32.183	18.688	0.000	101.246	12,435
Distance to Capital	50.165	40.581	0.000	175.078	12,435
Panel C: Socioeconomic characteristics (2007 census)					
Wealth Index	-0.168	0.890	-2.336	1.723	12,393
Sewerage Service Rate	0.352	0.428	0.000	1.000	12,406
Water Access Rate	0.744	0.323	0.000	1.000	12,406
Electricity Rate	0.865	0.186	0.000	1.000	12,406
Garbage Rate	0.439	0.441	0.000	1.000	12,406
Hospitals per 100k Population	15.637	62.482	0.000	787.402	12,406
Schools per 100k Population	112.544	219.692	0.000	11,111.111	12,406
Total Population	463.011	137.741	2.000	3,462.000	12,406
Female Head Rate	0.342	0.095	0.000	1.000	12,406
Gender Rate	0.474	0.032	0.316	1.000	12,406
Average Age	27.508	3.510	14.600	52.143	12,406
Fertility Rate	0.663	0.060	0.000	1.000	12,405
Years of Education	6.098	2.759	0.000	15.272	12,406
Literacy Rate	0.787	0.139	0.000	1.000	12,406
Attended School Rate	0.769	0.140	0.000	1.000	12,406
International Migrants	22.310	21.781	1.000	182.000	11,725
Total War Migrants	4.387	6.522	0.000	103.000	11,725
Migrants' Gender Rate	0.630	0.197	0.000	1.000	11,708
Remittances Rate	0.105	0.091	0.000	1.000	12,406
In-migration at War Period	0.055	0.062	0.000	0.575	12,406
Moving Population	364.771	141.797	0.000	3,440.000	12,406
Moving Population Share	0.784	0.185	0.000	1.000	12,406
Economically Active Population	0.528	0.142	0.000	1.000	12,406
Working Population	0.477	0.135	0.000	1.000	12,406
Salaried Population	0.439	0.150	0.000	1.000	12,406
Weekly Worked Hours	44.581	6.045	8.111	85.139	12,403
Public Worker	0.038	0.036	0.000	0.333	12,406
Private Worker	0.214	0.122	0.000	1.000	12,406
Employer	0.015	0.024	0.000	0.364	12,406
Independent Worker	0.118	0.074	0.000	0.623	12,406

Notes: Summary statistics of most raw variables used in the analysis.

C Maps

Figure C.1. Mapping of Altitude, Main Rivers, and Guerrilla-Controlled Territories



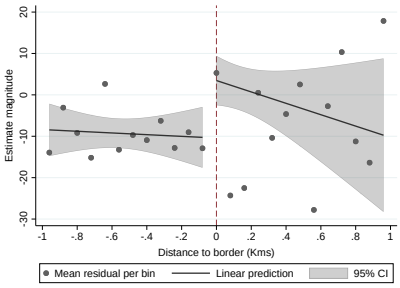
Notes: The figure maps the guerrilla-controlled areas, main rivers, and the variation in altitude for El Salvador. The latter is at a resolution of three arc-seconds and based on the DEM model of NASA's SRTM.

D Robustness Tests

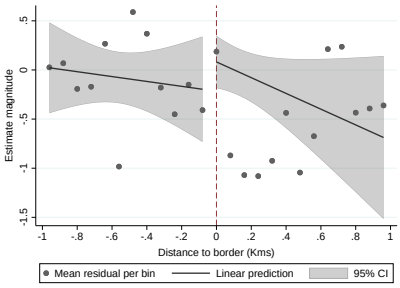
D.A Empirical Strategy

Figure D.1. Plots of Smoothness around the Discontinuity

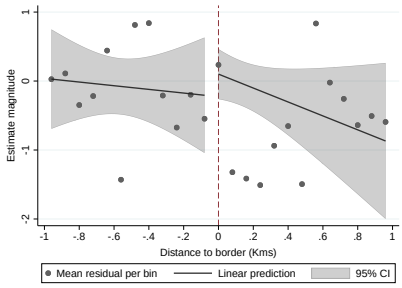
(a) Altitude



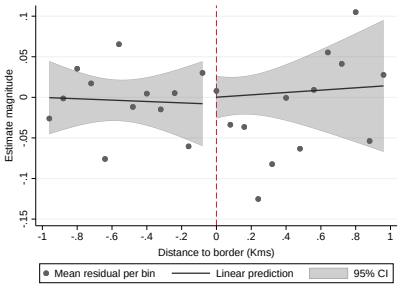
(b) Slope of Altitude



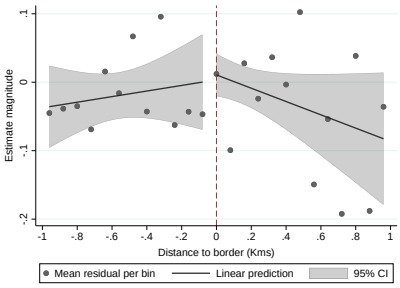
(c) Terrain Ruggedness



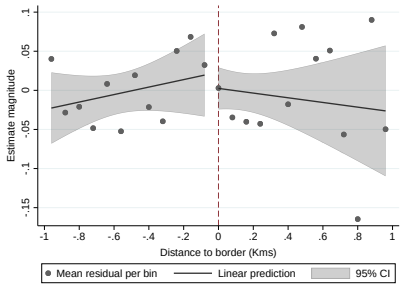
(d) Hydrographic Bodies



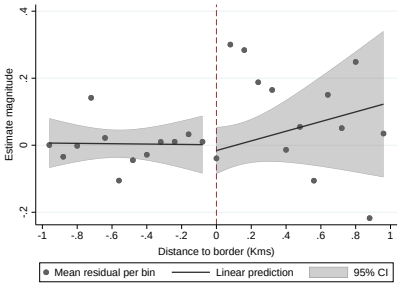
(e) Roads-Railway Infrastructure



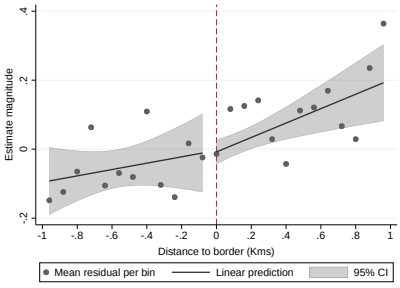
(f) Had a City (1945)



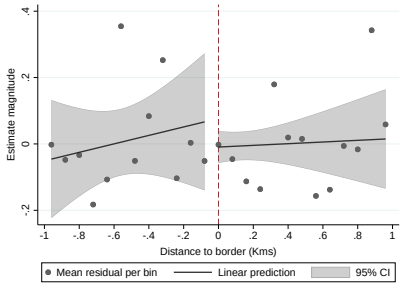
(g) Distance to City (1945)



(h) Distance to Comms (1945)



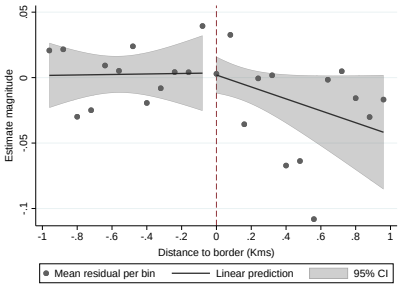
(i) Comms Density (1945)



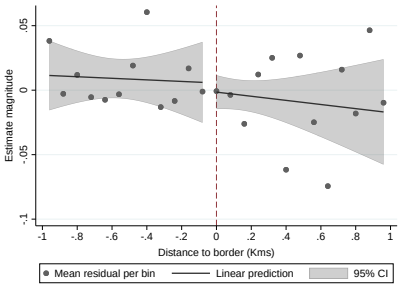
Notes: The results follow the specification of equation (1). The estimates shown include up to 400 break fixed effects.

Figure D.2. Plots of Smoothness around the Discontinuity (cont'd)

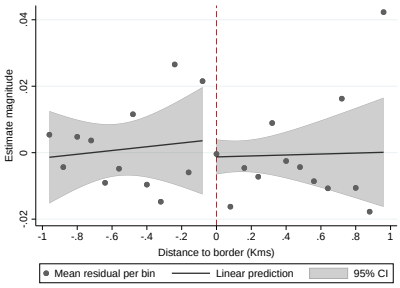
(a) Part of Land Reform (1980)



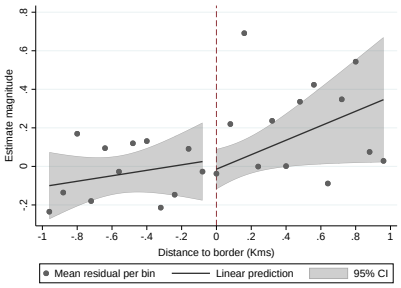
(b) Inside Cultivated Area (1980)



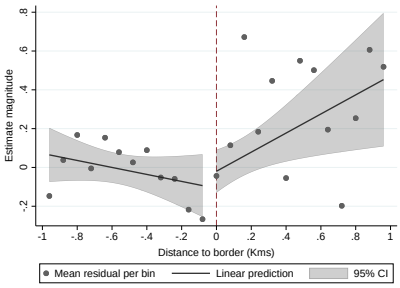
(c) Had a Parish (1979)



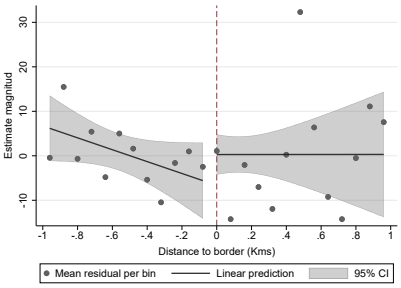
(d) Distance to Parish (1980)



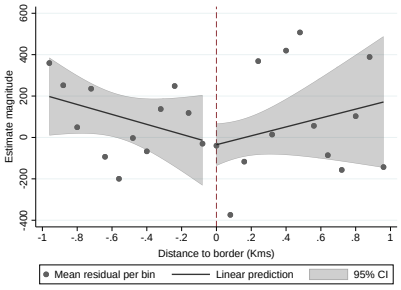
(e) Distance to School (1980)



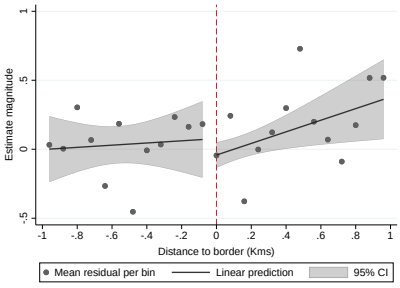
(f) Total Population



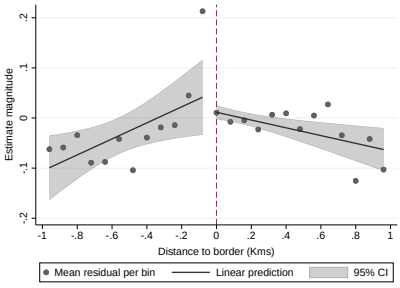
(g) Population Density



(h) Years of Education



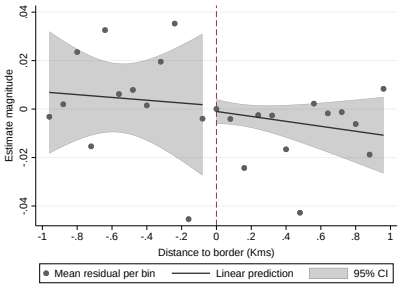
(i) Birth Rate



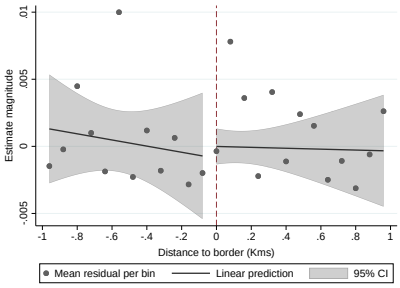
Notes: The results follow the specification of equation (1). The estimates shown include up to 400 break fixed effects.

Figure D.3. Plots of Smoothness around the Discontinuity (cont'd)

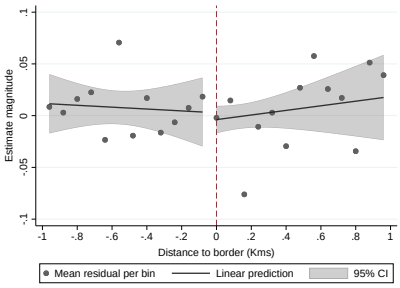
(a) In-migration Share



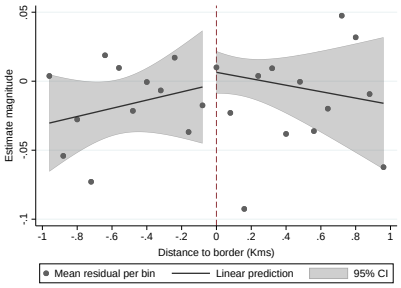
(b) Out-migration Share



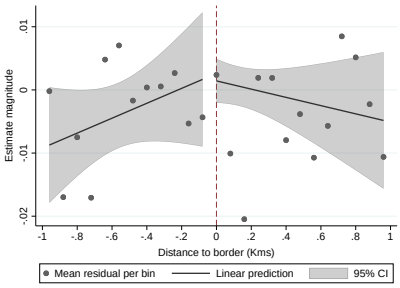
(c) Inside Highly Populated Area (1980)



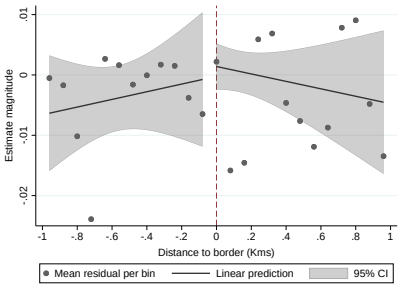
(d) Aggregate Yield Index (1961–79)



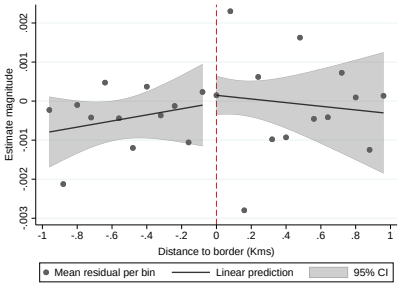
(e) Bean Agro-climatic Yield



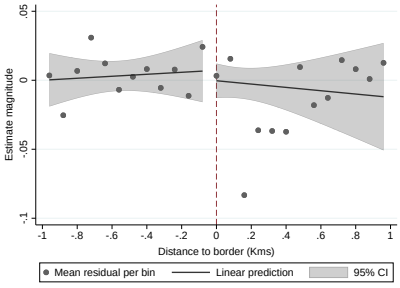
(f) Coffee Agro-climatic Yield



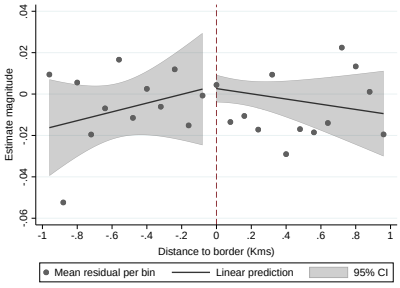
(g) Cotton Agro-climatic Yield



(h) Maize Agro-climatic Yield



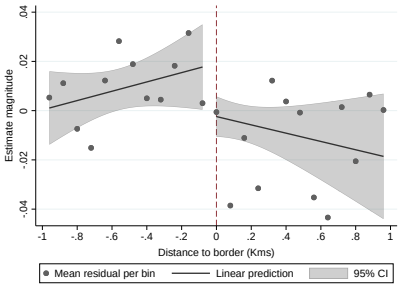
(i) Wet Rice Agro-climatic Yield



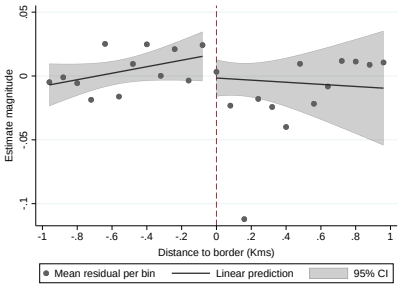
Notes: The results follow the specification of equation (1). The estimates shown include up to 400 break fixed effects.

Figure D.4. Plots of Smoothness around the Discontinuity (cont'd)

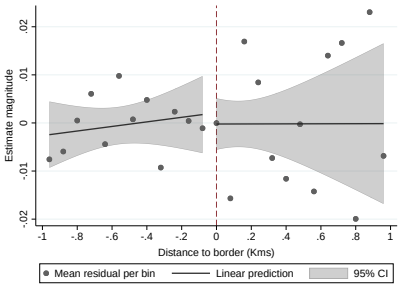
(a) Bean High Suitability



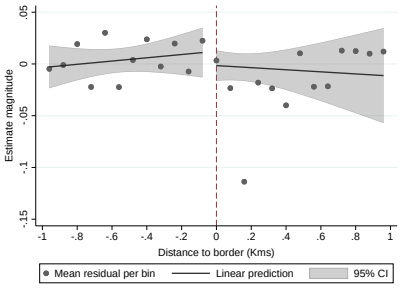
(b) Coffee High Suitability



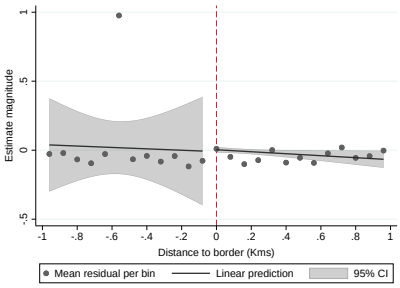
(c) Maize High Suitability



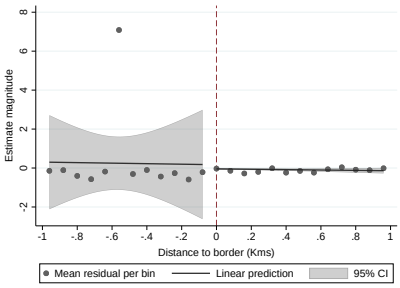
(d) Sugarcane High Suitability



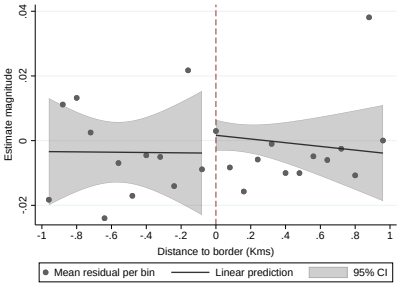
(e) War Events



(f) War Victims



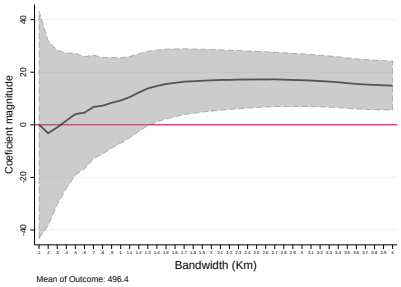
(g) Incarcerations



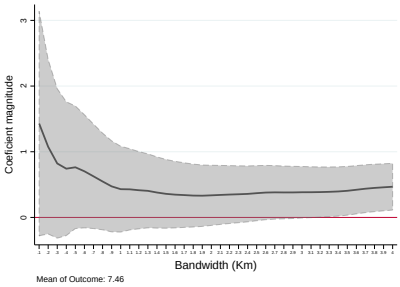
Notes: The results follow the specification of equation (1). The estimates shown include up to 400 break fixed effects.

Figure D.5. Smooth Condition Test Under Different Bandwidths

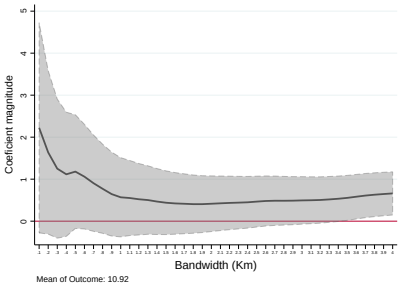
(a) Altitude



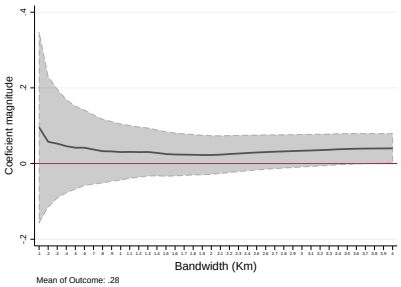
(b) Slope of Altitude



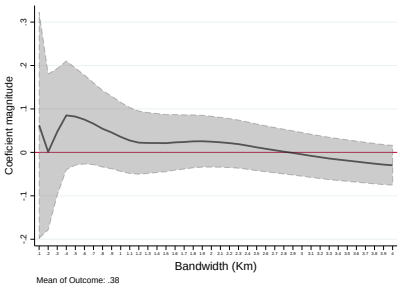
(c) Terrain Ruggedness



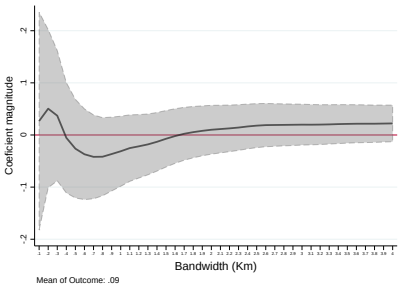
(d) Hydrographic Bodies



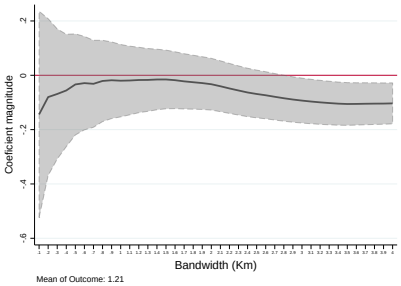
(e) Roads-Railway Infrastructure



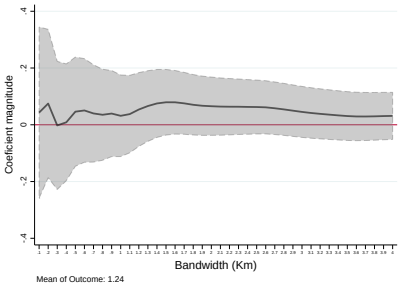
(f) Had a City (1945)



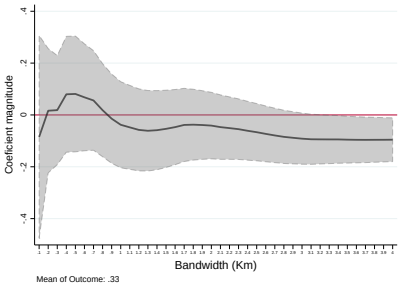
(g) Distance to City (1945)



(h) Distance to Communications (1945)



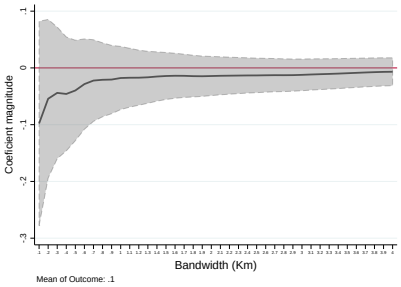
(i) Communications Density (1945)



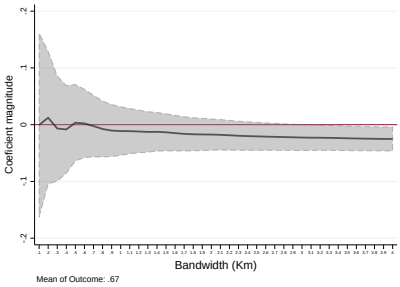
Notes: The results follow the specification of equation (1). The estimates shown include up to 400 break fixed effects.

Figure D.6. Smooth Condition Test Under Different Bandwidths (cont'd)

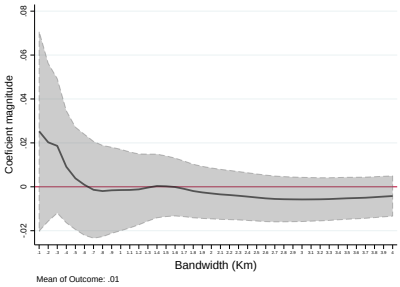
(a) Part of Land Reform (1980)



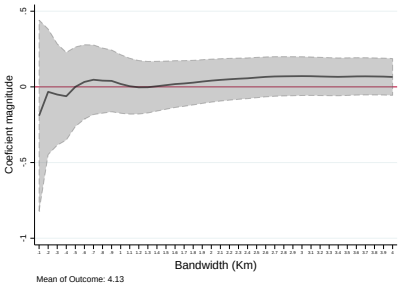
(b) Inside Cultivated Area (1980)



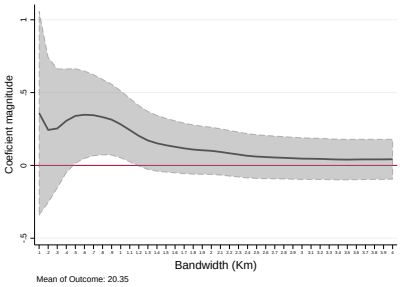
(c) Had a Parish (1979)



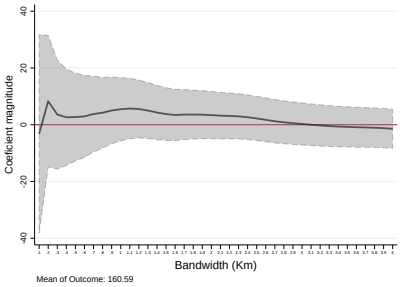
(d) Distance to Parish (1980)



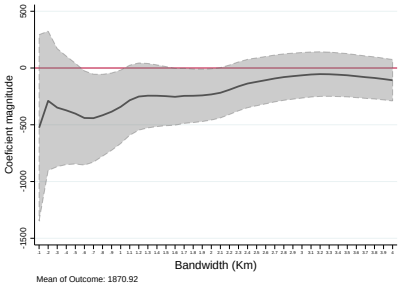
(e) Distance to School (1980)



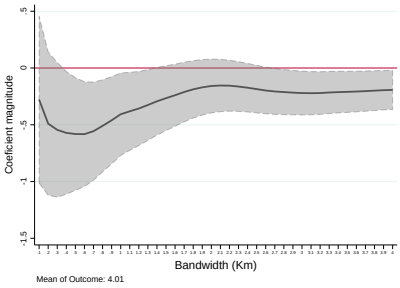
(f) Total Population



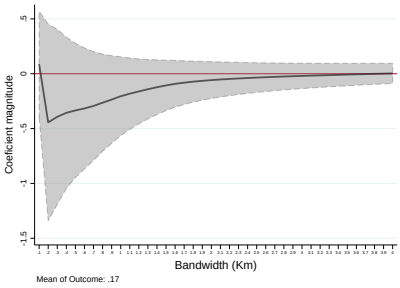
(g) Population Density



(h) Years of Education



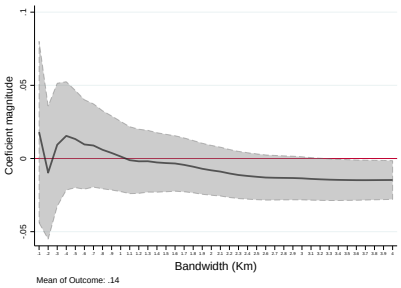
(i) Birth Rate



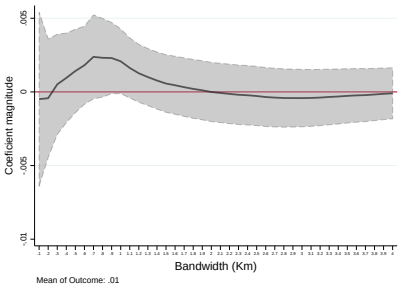
Notes: The results follow the specification of equation (1). The estimates shown include up to 400 break fixed effects.

Figure D.7. Smooth Condition Test Under Different Bandwidths (cont'd)

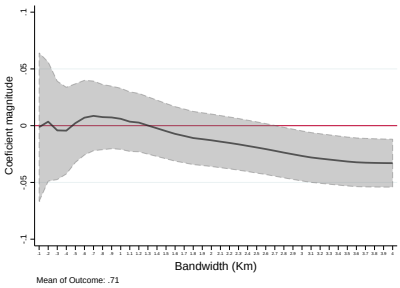
(a) In-migration Share



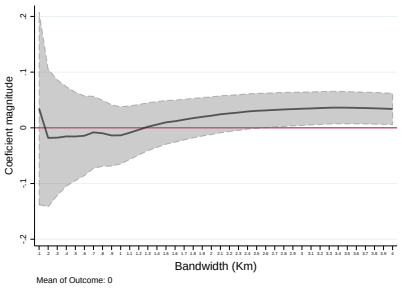
(b) Out-migration Share



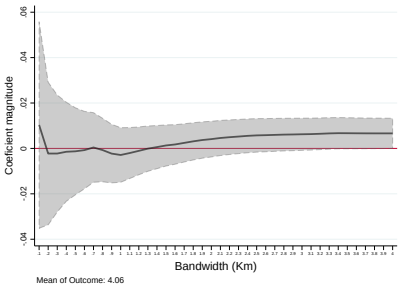
(c) Inside Highly Populated Area (1980)



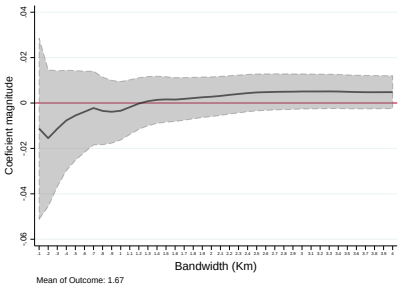
(d) Aggregate Yield Index (1961–79)



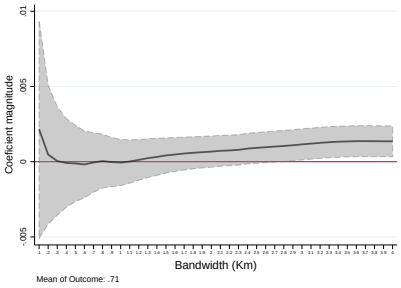
(e) Bean Agro-climatic Yield



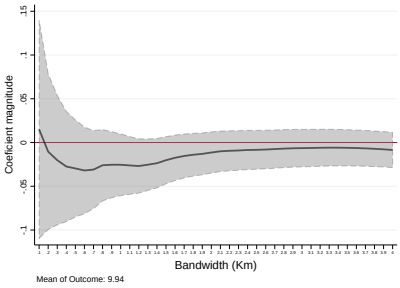
(f) Coffee Agro-climatic Yield



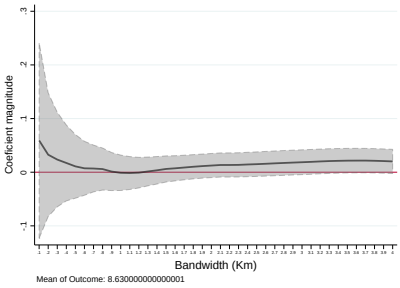
(g) Cotton Agro-climatic Yield



(h) Maize Agro-climatic Yield



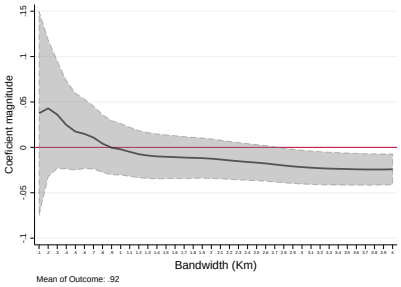
(i) Wet Rice Agro-climatic Yield



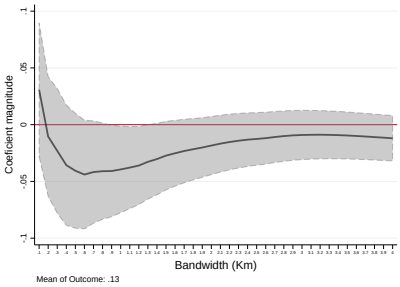
Notes: The results follow the specification of equation (1). The estimates shown include 400 break fixed effects.

Figure D.8. Smooth Condition Test Under Different Bandwidths (cont'd)

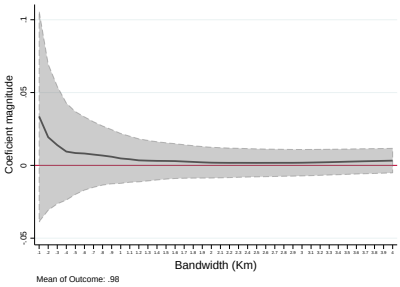
(a) Bean High Suitability



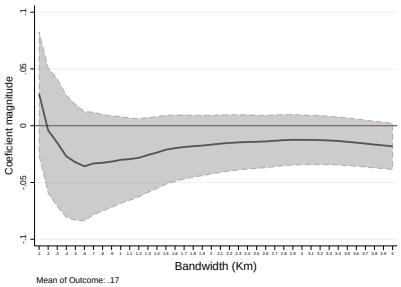
(b) Coffee High Suitability



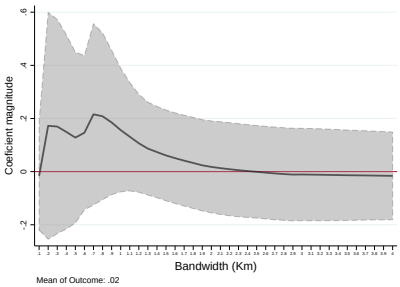
(c) Maize High Suitability



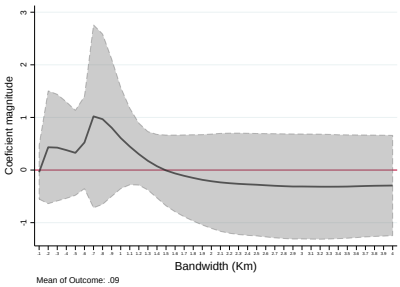
(d) Sugarcane High Suitability



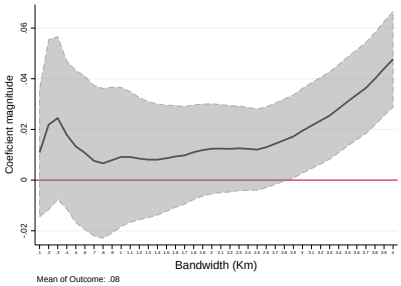
(e) War Events



(f) War Victims



(g) Incarcerations

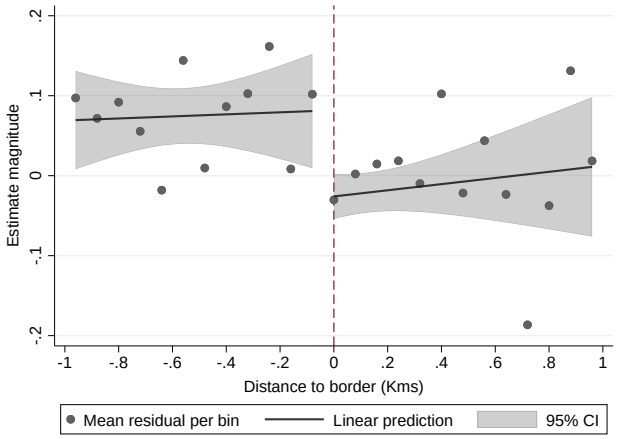


Notes: The results follow the specification of equation (1). The estimates shown include up to 400 break fixed effects.

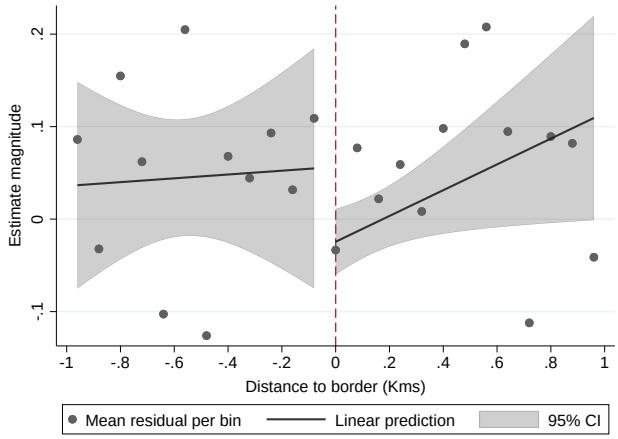
D.B Main Outcomes

Figure D.9. Effects of Guerrilla Control on Main Outcomes

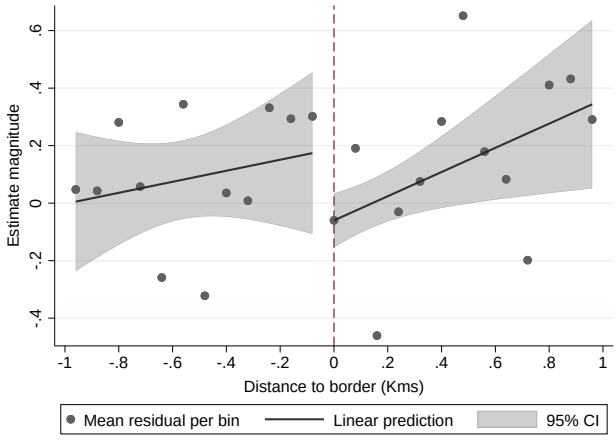
(a) Arcsine(Night Light)



(b) Wealth Index



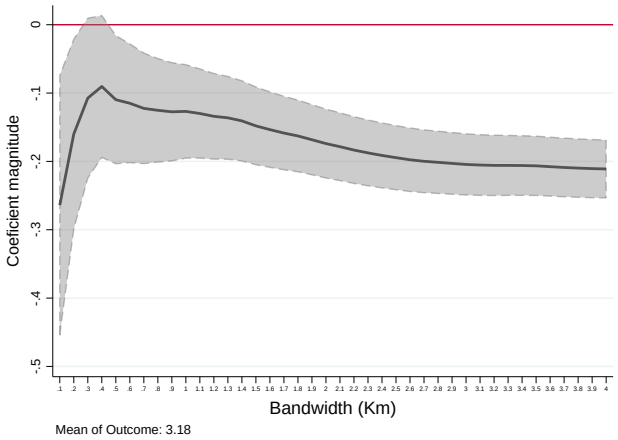
(c) Years of Education



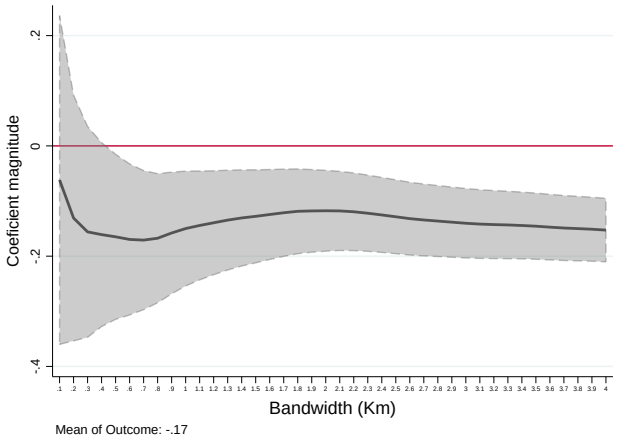
Notes: The results follow the specification of equation (1). The estimates shown include up to 400 break fixed effects.

Figure D.10. Effects of Guerrilla Control on Main Outcomes under Different Bandwidths

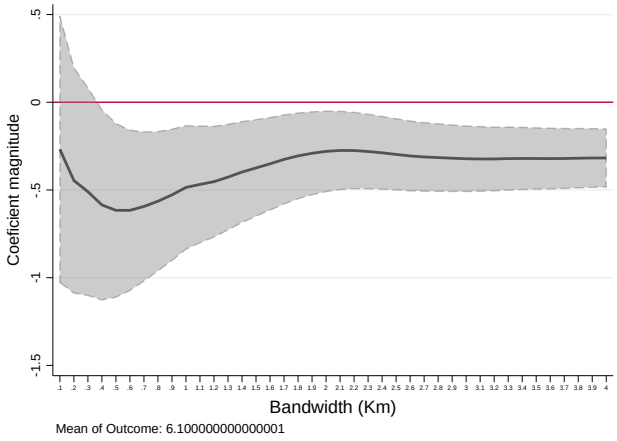
(a) Arcsine (Night Light)



(b) Wealth Index



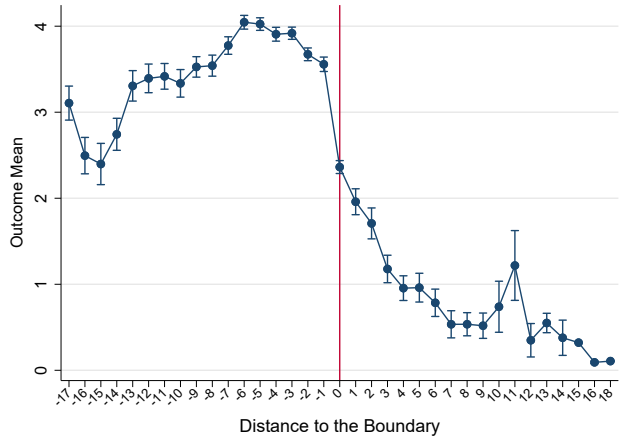
(c) Years of Education



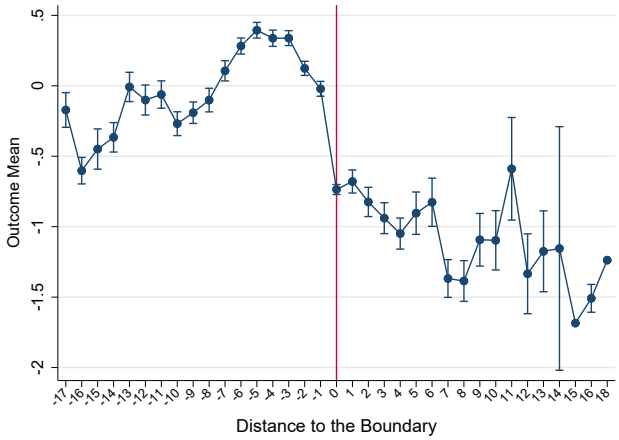
Notes: The results follow the specification of equation 1. The estimates shown include up to 400 break fixed effects. The figure illustrates the coefficients for 40 individual estimations, one for each of the different bandwidths around the discontinuity. The gray coloring illustrates 95% confidence intervals.

Figure D.11. External Validity for Main Outcomes

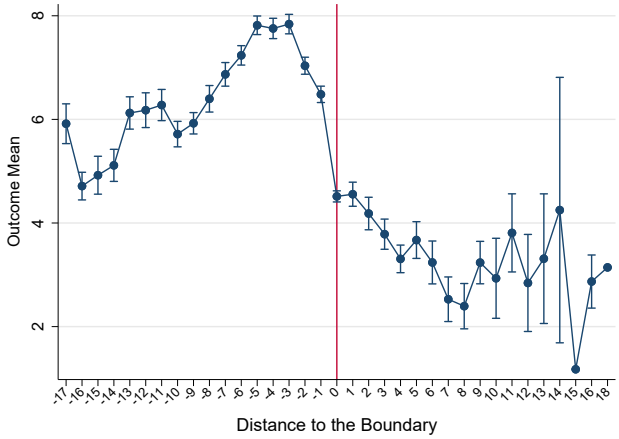
(a) Arcsine (Night Light)



(b) Wealth Index

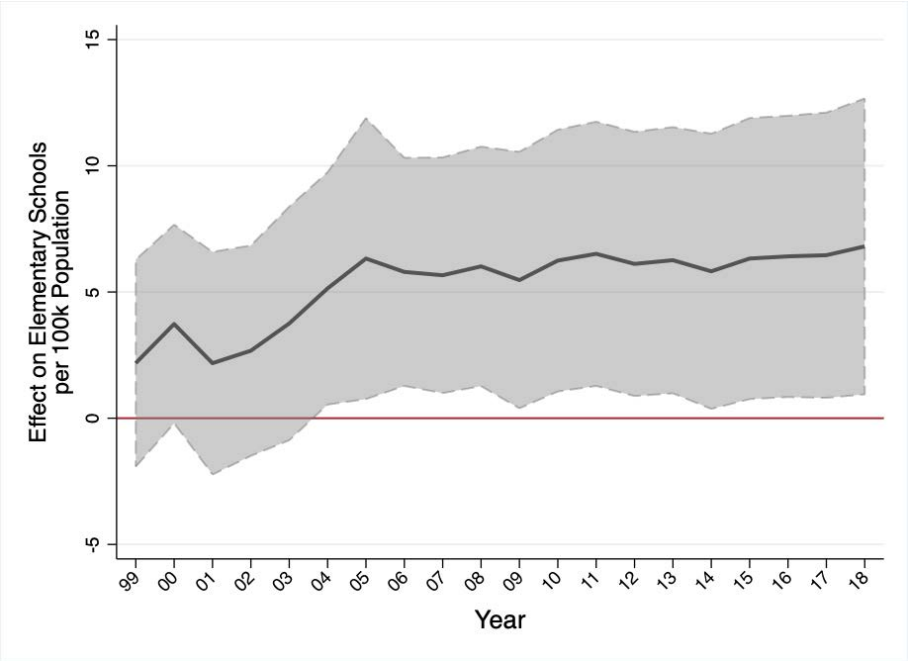


(c) Years of Education



Notes: The figure shows the raw mean of each outcome by bin. Each bin corresponds to the distance to the boundary in kilometers, which ranges from 17 kilometers outside the guerrilla-controlled boundary to 18 kilometers within the boundary. Negative values signal being outside the boundary and positive values mean being inside the boundary.

Figure D.12. Effects of Guerrilla Control on the Number of Primary Schools per 100k Population Over Time

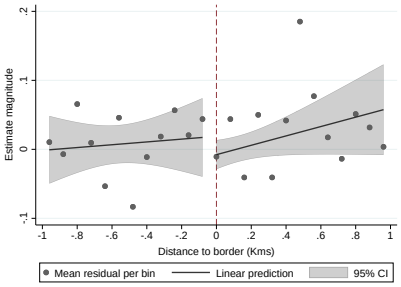


Notes: This figure shows the coefficients obtained from the estimation of equation 1 for each year between 1999 and 2018. The gray coloring illustrates 95% confidence intervals. The estimates shown include up to 400 break fixed effects. The figure illustrates the coefficients of each yearly estimation from 1999 to 2018. Overall, the effect of guerrilla control on the number of primary schools per capita is positive and stable over time.

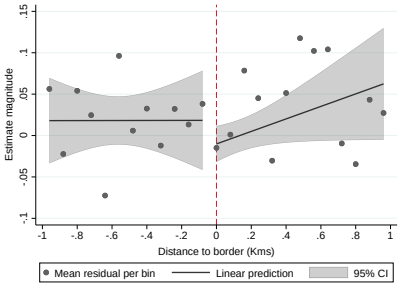
D.C Public Goods Provision

Figure D.13. Effects of Guerrilla Control on Public Goods Provision

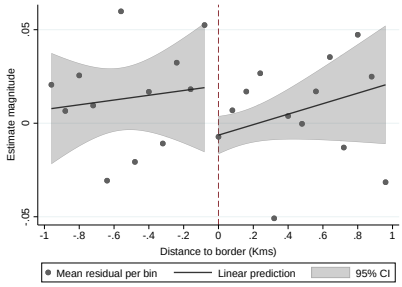
(a) Sewerage Service



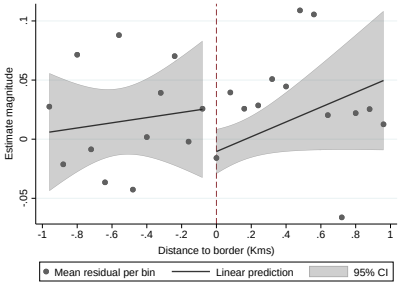
(b) Water Access



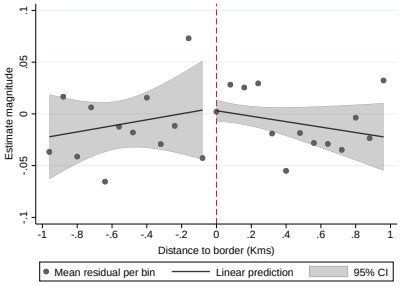
(c) Electricity



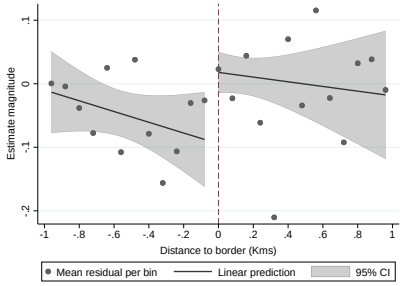
(d) Garbage Disposal



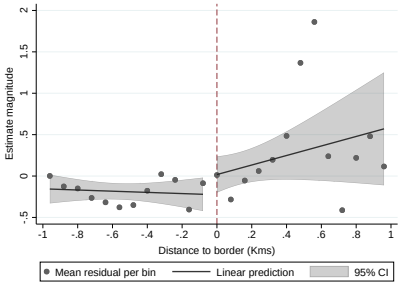
(e) Total Hospitals



(f) Total Schools



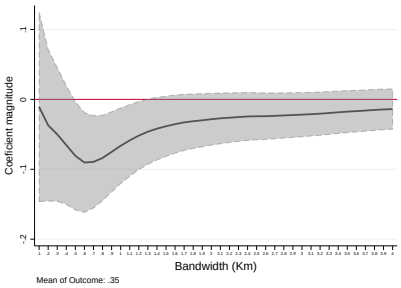
(g) Road Density



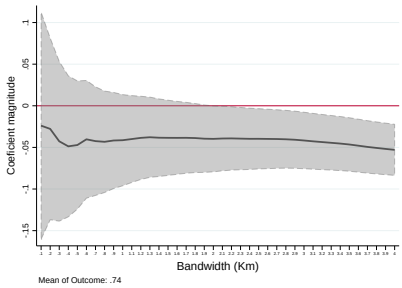
Notes: The results follow the specification of equation (1). The estimates shown include up to 400 break fixed effects.

Figure D.14. Effects of Guerrilla Control on Household Conditions under Different Bandwidths

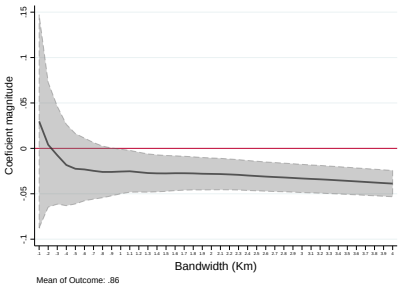
(a) Sewerage Service Rate



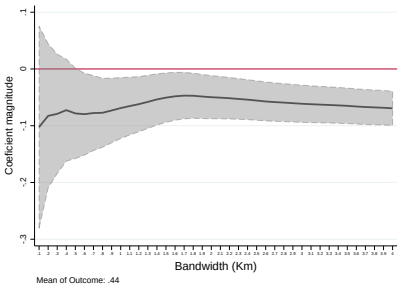
(b) Water Access



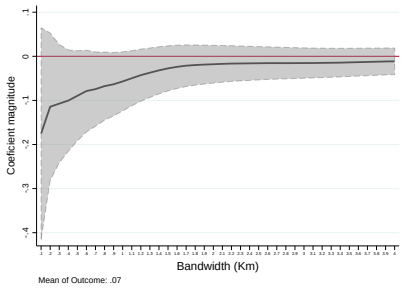
(c) Electricity Rate



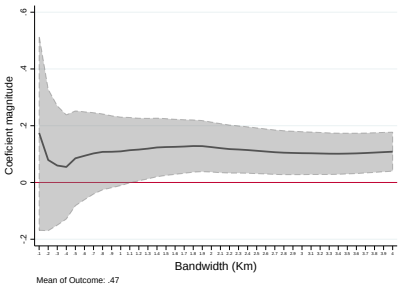
(d) Garbage Rate



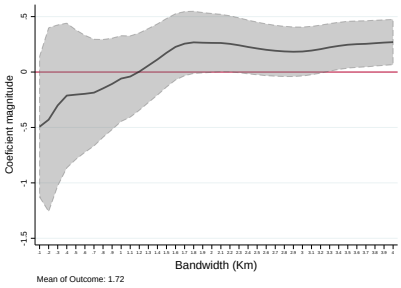
(e) Total Hospitals



(f) Total Schools



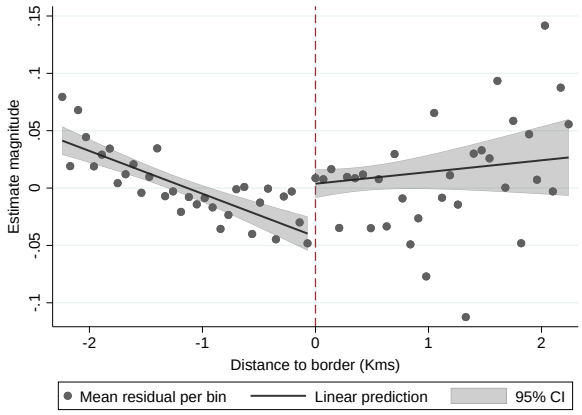
(g) Road Density



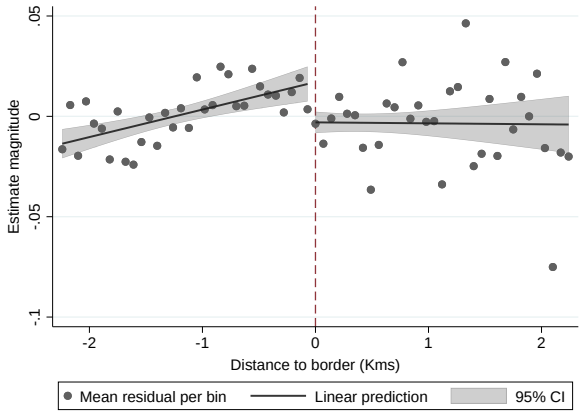
Notes: The results follow the specification of equation 1. The estimates shown include up to 400 break fixed effects. The figure illustrates the coefficients for 40 individual estimations, one for each of the different bandwidths around the discontinuity. The gray coloring illustrates 95% confidence intervals.

Figure D.15. Plot of the Effect of Guerrilla Control on the Share of Workers by Economic Activity

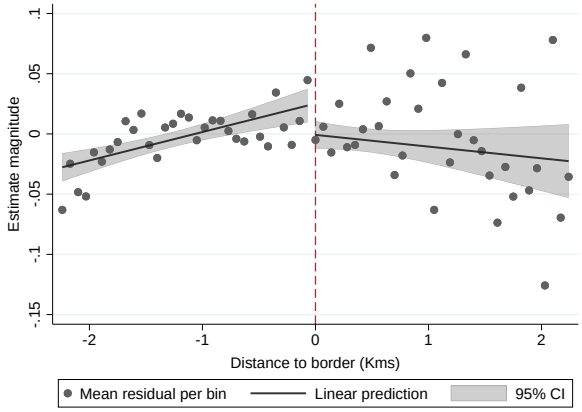
(a) Agriculture



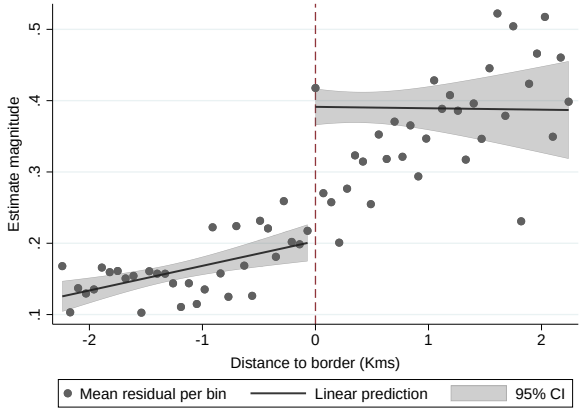
(b) Industry



(c) Services



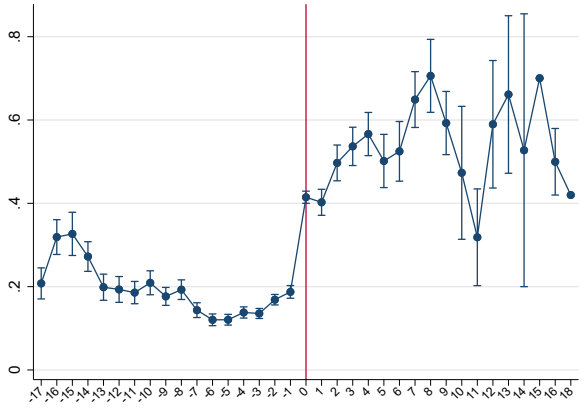
(d) Agricultural Workers Growing Cereals and Fruits



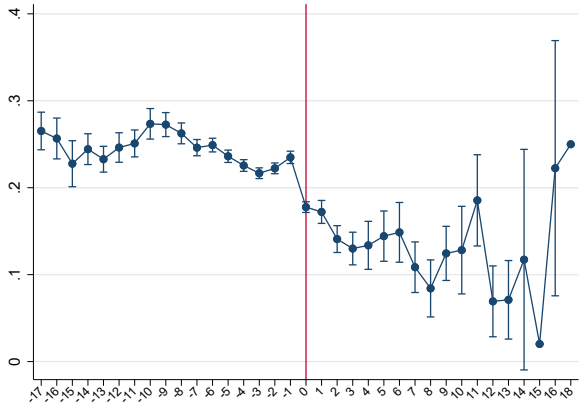
Notes: The results follow the specification of equation (1). The estimates shown include up to 400 break fixed effects.

Figure D.16. Share of Workers by Economic Activity and Distance to the Boundary

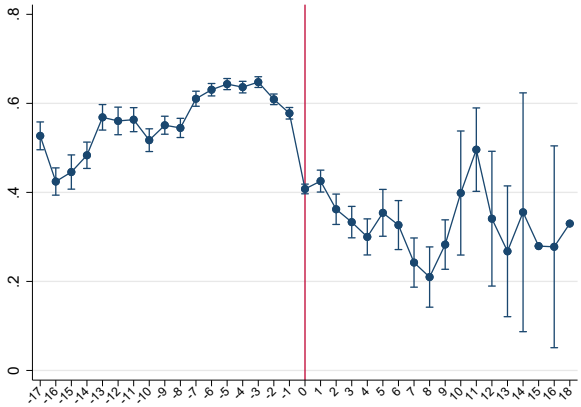
(a) Agriculture



(b) Industry



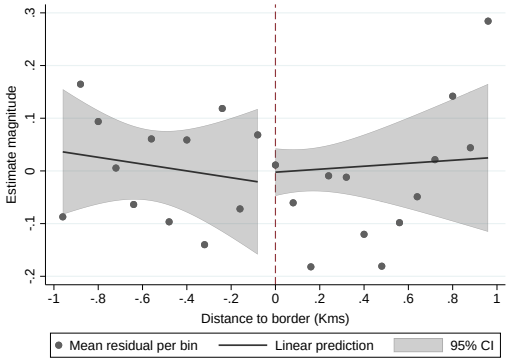
(c) Services



Notes: The figure shows the raw mean of each outcome by bin. Each bin corresponds to the distance to the boundary in kilometers, which ranges from 17 kilometers outside the guerrilla-controlled boundary to 18 kilometers within the boundary. Negative values signal being outside the boundary and positive values mean being inside the boundary.

Figure D.17. Plotting the Effects of Guerrilla Control on Homicide Rates

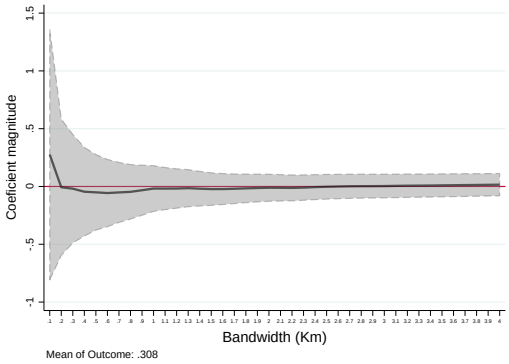
(a) Homicides (2017)



Notes: This figure shows the results obtained from the estimation of equation (1). The estimates shown include up to 400 break fixed effects. There are no effects of guerrilla control on homicide rates in 2017.

Figure D.18. Effects of Guerrilla Control on Homicide Rates under Different Bandwidths

(a) Homicides (2017)



Notes: This figure shows the results obtained from the estimation of equation (1). The figure illustrates the coefficients for 40 individual estimations, one for each of the different bandwidths around the discontinuity. The estimates shown include up to 400 break fixed effects. The gray coloring illustrates 95% confidence intervals.

Table D.1. Effects of Guerrilla Territorial Control on Other Transformations of Night Light Luminosity

	Transformations of Night Light (2013)			Literacy Rate
	Logarithm	Level (Raw)	Weighted by Pixel Area	(2007)
	(1)	(2)	(3)	(4)
Guerrilla control	-0.218***	-1.710***	-1.710***	-0.0212***
	(0.0294)	(0.339)	(0.339)	(0.00501)
Observations	3,652	3,652	3,652	3,637
Bandwidth (Km)	2.266	2.266	2.266	2.266
Dependent mean	2.810	30.725	30.725	0.810

Note: The table presents the results of equation 1 using different transformations of night light luminosity. The unit of observation in all Columns is the census tract. Controls not shown include a linear polynomial of the distance to the boundary of guerrilla territory, its interaction with whether the tract was under guerrilla control or not, and up to 400 fixed effects representing the closest evenly spaced break in the guerrilla-controlled boundary. We use the algorithm of Calonico, Cattaneo and Titiunik (2014) to set the bandwidth and weight using a triangular kernel. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table D.2. Effects of Guerrilla Control on Years of Education by Age Cohort

	Years of Education	
	In School Age at War (1982-92)	Not In School Age at War (1982-92)
	(1)	(2)
Guerrilla control	-0.346***	-0.160
	(0.121)	(0.113)
Observations	3,635	3,635
Bandwidth (Km)	2.266	2.266
Dependent mean	7.860	4.410

Notes: The table presents the effects of guerrilla control on the years of education by age cohort. Column 1 estimates the effect for the sample of people who during the war period were school age. Column 2 does the same but uses the sample of people who during this period were not school age. Controls not shown include a linear polynomial of the distance to the boundary of guerrilla territory, its interaction with whether the tract was under guerrilla control or not, and up to 400 fixed effects representing the closest evenly spaced break in the guerrilla-controlled boundary. We use the algorithm of Calonico, Cattaneo and Titiunik (2014) to set the bandwidth and weight using a triangular kernel. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table D.3. Effects of Guerrilla Territorial Control on Main Outcomes Using Conley Standard Errors

Panel A: Conley Standard Errors (0.5 Kms)			
	Night Light Arcsine	Wealth Index	Years of Education
	(2013)	(2007)	(2007)
	(1)	(2)	(3)
Guerrilla control	-0.186***	-0.121***	-0.279***
	(0.0242)	(0.0343)	(0.103)
Observations	3,652	3,630	3,637
Panel B: Conley Standard Errors (2 Kms)			
Guerrilla control	-0.186***	-0.121**	-0.279**
	(0.0278)	(0.0482)	(0.129)
Observations	3,652	3,630	3,637
Panel C: Conley Standard Errors (4 Kms)			
Guerrilla control	-0.186***	-0.121**	-0.279**
	(0.0344)	(0.0566)	(0.142)
Observations	3,652	3,630	3,637
Bandwidth (Km)	2.266	2.266	2.266

Note: The table presents the results of equation 1 using Conley standard errors. The unit of observation in all Columns is the census tract. Controls not shown include a linear polynomial of the distance to the boundary of guerrilla territory, its interaction with whether the tract was under guerrilla control or not, and up to 400 fixed effects representing the closest evenly spaced break in the guerrilla-controlled boundary. We use the algorithm of Calonico, Cattaneo and Titiunik (2014) to set the bandwidth and weight using a triangular kernel. Conley standard errors in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table D.4. Robustness Analysis for the Night Light Intensity Outcome

	Night Light Arcsine (2013)											
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Panel A: Polynomial of order zero												
Guerrilla control	-0.153***	-0.160***	-0.153***	-0.147***	-0.346***	-0.153***	-0.153***	-0.160***	-0.153***	-0.147***	-0.346***	-0.153***
	(0.0278)	(0.0278)	(0.0277)	(0.0295)	(0.0220)	(0.0278)	(0.0278)	(0.0278)	(0.0277)	(0.0295)	(0.0220)	(0.0278)
Observations	1,494	1,344	1,443	1,406	4,946	1,442	1,494	1,344	1,443	1,406	4,946	1,442
Bandwidth type	mserd	mserd	mserd	msetwo	msetwo	msetwo	cerrd	cerrd	cerrd	certwo	certwo	certwo
Kernel	triangular	uniform	epanechnikov	triangular	uniform	epanechnikov	triangular	uniform	epanechnikov	triangular	uniform	epanechnikov
Bandwidth (Km)	0.588	0.441	0.538	0.510	3.388	0.535	0.588	0.441	0.538	0.510	3.388	0.535
Dependent mean	3.247	3.201	3.205	3.183	3.666	3.200	3.247	3.201	3.205	3.183	3.666	3.200
Panel B: Polynomial of order one												
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Guerrilla control	-0.186***	-0.215***	-0.198***	-0.201***	-0.232***	-0.211***	-0.142***	-0.153***	-0.147***	-0.159***	-0.188***	-0.165***
	(0.0247)	(0.0252)	(0.0248)	(0.0233)	(0.0238)	(0.0237)	(0.0298)	(0.0298)	(0.0295)	(0.0273)	(0.0272)	(0.0275)
Observations	3,652	3,373	3,619	4,221	4,019	4,092	2,542	2,342	2,514	2,953	2,808	2,851
Bandwidth type	mserd	mserd	mserd	msetwo	msetwo	msetwo	cerrd	cerrd	cerrd	certwo	certwo	certwo
Kernel	triangular	uniform	epanechnikov	triangular	uniform	epanechnikov	triangular	uniform	epanechnikov	triangular	uniform	epanechnikov
Bandwidth (Km)	2.266	2.040	2.235	2.750	2.571	2.630	1.414	1.273	1.395	1.717	1.605	1.641
Dependent mean	3.536	3.517	3.537	3.594	3.568	3.578	3.453	3.440	3.452	3.506	3.497	3.498
Panel C: Polynomial of order two												
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Guerrilla control	-0.205***	-0.252***	-0.220***	-0.231***	-0.239***	-0.235***	-0.140***	-0.147***	-0.146***	-0.225***	-0.234***	-0.235***
	(0.0274)	(0.0286)	(0.0277)	(0.0243)	(0.0269)	(0.0252)	(0.0336)	(0.0338)	(0.0334)	(0.0257)	(0.0282)	(0.0263)
Observations	4,851	4,834	4,842	8,244	7,595	8,096	3,232	3,212	3,220	5,962	5,282	5,824
Bandwidth type	mserd	mserd	mserd	msetwo	msetwo	msetwo	cerrd	cerrd	cerrd	certwo	certwo	certwo
Kernel	triangular	uniform	epanechnikov	triangular	uniform	epanechnikov	triangular	uniform	epanechnikov	triangular	uniform	epanechnikov
Bandwidth (Km)	3.303	3.284	3.292	7.583	6.353	7.296	1.927	1.916	1.921	4.424	3.707	4.257
Dependent mean	3.665	3.663	3.664	3.802	3.800	3.807	3.496	3.497	3.498	3.712	3.681	3.706

Note: The table presents the robustness of the effects of guerrilla control on night light intensity using different polynomial orders. Panel A shows results for a constant polynomial. Panels B and C present the results using a first and second order polynomial, respectively. Estimations across Columns show different bandwidth and kernel types and different bandwidth size. Robust standard errors in parentheses. "mserd" and "msetwo" specify one and two common MSE-optimal bandwidth selectors for the RD treatment effect estimator, respectively. "cerrd" and "certwo" indicate one or two common CER-optimal bandwidth selectors for the RD treatment effect estimator, respectively. The Kernel row indicates the type of kernel used: triangular, uniform, or epanechnikov. Differences in the number of observations are due to the selection of different bandwidths across specifications. *** p<0.01, ** p<0.05, * p<0.1.

Table D.5. Robustness Analysis for the Wealth Index Outcome

	Wealth Index (2007)											
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Panel A: Polynomial of order zero												
Guerrilla control	-0.213***	-0.220***	-0.208***	-0.211***	-0.210***	-0.208***	-0.213***	-0.220***	-0.208***	-0.211***	-0.210***	-0.208***
	(0.0506)	(0.0552)	(0.0503)	(0.0517)	(0.0486)	(0.0507)	(0.0506)	(0.0552)	(0.0503)	(0.0517)	(0.0486)	(0.0507)
Observations	1,258	1,124	1,221	1,240	1,173	1,216	1,258	1,124	1,221	1,240	1,173	1,216
Bandwidth type	mserd	mserd	mserd	msetwo	msetwo	msetwo	cerrd	cerrd	cerrd	certwo	certwo	certwo
Kernel	triangular	uniform	epanechnikov	triangular	uniform	epanechnikov	triangular	uniform	epanechnikov	triangular	uniform	epanechnikov
Bandwidth (Km)	0.391	0.274	0.358	0.374	0.315	0.354	0.391	0.274	0.358	0.374	0.315	0.354
Dependent mean	-0.327	-0.317	-0.331	-0.326	-0.361	-0.332	-0.327	-0.317	-0.331	-0.326	-0.361	-0.332
Panel B: Polynomial of order one												
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Guerrilla control	-0.120***	-0.100***	-0.109***	-0.118***	-0.103***	-0.107***	-0.144***	-0.118**	-0.133***	-0.137***	-0.111**	-0.127***
	(0.0397)	(0.0367)	(0.0392)	(0.0374)	(0.0365)	(0.0374)	(0.0504)	(0.0461)	(0.0498)	(0.0471)	(0.0457)	(0.0471)
Observations	2,987	3,066	2,933	3,298	3,104	3,179	2,088	2,125	2,057	2,289	2,164	2,204
Bandwidth type	mserd	mserd	mserd	msetwo	msetwo	msetwo	cerrd	cerrd	cerrd	certwo	certwo	certwo
Kernel	triangular	uniform	epanechnikov	triangular	uniform	epanechnikov	triangular	uniform	epanechnikov	triangular	uniform	epanechnikov
Bandwidth (Km)	1.756	1.809	1.718	2	1.846	1.901	1.096	1.129	1.072	1.248	1.152	1.186
Dependent mean	-0.0530	-0.0510	-0.0570	-0.0350	-0.0500	-0.0470	-0.168	-0.169	-0.176	-0.136	-0.153	-0.145
Panel C: Polynomial of order two												
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Guerrilla control	-0.104**	-0.107**	-0.101**	-0.140***	-0.136***	-0.142***	-0.139**	-0.128**	-0.126**	-0.125***	-0.145***	-0.120***
	(0.0436)	(0.0428)	(0.0424)	(0.0337)	(0.0340)	(0.0339)	(0.0561)	(0.0542)	(0.0540)	(0.0404)	(0.0403)	(0.0406)
Observations	4,308	4,218	4,460	7,227	6,909	7,052	2,861	2,801	2,959	5,001	4,740	4,841
Bandwidth type	mserd	mserd	mserd	msetwo	msetwo	msetwo	cerrd	cerrd	cerrd	certwo	certwo	certwo
Kernel	triangular	uniform	epanechnikov	triangular	uniform	epanechnikov	triangular	uniform	epanechnikov	triangular	uniform	epanechnikov
Bandwidth (Km)	2.852	2.768	2.978	5.915	5.514	5.685	1.664	1.615	1.738	3.452	3.218	3.318
Dependent mean	0.0460	0.0360	0.0580	0.201	0.194	0.197	-0.0690	-0.0670	-0.0590	0.104	0.0920	0.0950

Note: The table presents the robustness of the effects of guerrilla control on the wealth index using different polynomial orders. Panel A shows results for a constant polynomial. Panels B and C present the results using a first and second order polynomial, respectively. Estimations across Columns show different bandwidth and kernel types and different bandwidth size. "mserd" and "msetwo" specify one and two common MSE-optimal bandwidth selectors for the RD treatment effect estimator, respectively. "cerrd" and "certwo" indicate one or two common CER-optimal bandwidth selectors for the RD treatment effect estimator, respectively. The Kernel row indicates the type of kernel used: triangular, uniform, or epanechnikov. Robust standard errors in parentheses. Differences in the number of observations are due to the selection of different bandwidths across specifications. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table D.6. Robustness Analysis for the Years of Education Outcome

	Years of Education (2007)											
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Panel A: Polynomial of order zero												
Guerrilla control	-0.648***	-0.658***	-0.650***	-0.654***	-0.637***	-0.592***	-0.648***	-0.658***	-0.650***	-0.654***	-0.637***	-0.592***
	(0.154)	(0.170)	(0.157)	(0.172)	(0.140)	(0.111)	(0.154)	(0.170)	(0.157)	(0.172)	(0.140)	(0.111)
Observations	1,348	1,154	1,289	1,249	1,289	1,669	1,348	1,154	1,289	1,249	1,289	1,669
Bandwidth type	mserd	mserd	mserd	msetwo	msetwo	msetwo	cerrd	cerrd	cerrd	certwo	certwo	certwo
Kernel	triangular	uniform	epanechnikov	triangular	uniform	epanechnikov	triangular	uniform	epanechnikov	triangular	uniform	epanechnikov
Bandwidth (Km)	0.458	0.298	0.409	0.378	0.409	0.746	0.458	0.298	0.409	0.378	0.409	0.746
Dependent mean	5.761	5.849	5.834	5.843	5.834	5.867	5.761	5.849	5.834	5.843	5.834	5.867
Panel B: Polynomial of order one												
Guerrilla control	-0.280**	-0.197	-0.230**	-0.277**	-0.145	-0.236**	-0.441***	-0.331**	-0.409***	-0.433***	-0.361**	-0.422***
	(0.117)	(0.121)	(0.114)	(0.115)	(0.119)	(0.117)	(0.157)	(0.167)	(0.154)	(0.155)	(0.164)	(0.159)
Observations	3,308	2,755	3,238	3,369	2,808	3,140	2,297	1,950	2,247	2,336	1,987	2,188
Bandwidth type	mserd	mserd	mserd	msetwo	msetwo	msetwo	cerrd	cerrd	cerrd	certwo	certwo	certwo
Kernel	triangular	uniform	epanechnikov	triangular	uniform	epanechnikov	triangular	uniform	epanechnikov	triangular	uniform	epanechnikov
Bandwidth (Km)	2.001	1.572	1.942	2.051	1.615	1.868	1.249	0.981	1.212	1.280	1.008	1.166
Dependent mean	6.510	6.358	6.477	6.514	6.399	6.463	6.168	6.015	6.143	6.192	6.030	6.135
Panel C: Polynomial of order two												
Guerrilla control	-0.283**	-0.260*	-0.229*	-0.281***	-0.305***	-0.290***	-0.484**	-0.374**	-0.466**	-0.328**	-0.263**	-0.285**
	(0.139)	(0.133)	(0.139)	(0.102)	(0.108)	(0.103)	(0.188)	(0.178)	(0.189)	(0.129)	(0.134)	(0.130)
Observations	4,441	4,357	4,296	7,167	6,274	6,902	2,951	2,892	2,852	4,934	4,265	4,731
Bandwidth type	mserd	mserd	mserd	msetwo	msetwo	msetwo	cerrd	cerrd	cerrd	certwo	certwo	certwo
Kernel	triangular	uniform	epanechnikov	triangular	uniform	epanechnikov	triangular	uniform	epanechnikov	triangular	uniform	epanechnikov
Bandwidth (Km)	2.956	2.884	2.834	5.815	4.796	5.488	1.725	1.683	1.654	3.394	2.799	3.202
Dependent mean	6.828	6.791	6.776	7.270	7.178	7.269	6.425	6.402	6.398	6.984	6.767	6.949

Note: The table presents the robustness of the effects of guerrilla control on the number of years of education using different polynomial orders. Panel A shows results for a constant polynomial. Panels B and C present the results using a first and second order polynomial, respectively. "mserd" and "msetwo" specify one and two common MSE-optimal bandwidth selectors for the RD treatment effect estimator, respectively. "cerrd" and "certwo" indicate one or two common CER-optimal bandwidth selectors for the RD treatment effect estimator, respectively. The Kernel row indicates the type of kernel used: triangular, uniform, or epanechnikov. Estimations across Columns show different bandwidth and kernel types and different bandwidth size. Robust standard errors in parentheses. Differences in the number of observations are due to the selection of different bandwidths across specifications. *** p<0.01, ** p<0.05, * p<0.1.

Table D.7. Effects of Guerrilla Territorial Control on Main Outcomes Using Ordinary Least Squares

	Night Light Arcsine	Wealth Index	Years of Education
	(2013)	(2007)	(2007)
	(1)	(2)	(3)
Guerrilla control	-0.477***	-0.471***	-1.100***
	(0.0257)	(0.0221)	(0.0607)
Observations	12,411	12,370	12,384
Bandwidth (Km)	67.01	67.01	67.01
Dependent mean	3.457	-0.0310	6.505

Note: The table presents the results of equation 1 via Ordinary Least Squares using the whole sample. The unit of observation in all Columns is the census tract. Controls not shown include a linear polynomial of the distance to the boundary of guerrilla territory, its interaction with whether the tract was under guerrilla control or not, and up to 400 fixed effects representing the closest evenly spaced break in the guerrilla-controlled boundary. We use triangular kernel weights. Standard errors in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table D.8. Placebo Test for All Pairs of Neighbors Whose Difference in Altitude is between the Following Thresholds

	Altitude difference between 15 and 20 masl			*Altitude difference between 20 and 100 masl*		
	Altitude	Night Light- Arcsine (2013)		Altitude	Night Light- Arcsine (2013)	
	Any neighbor pair	Any neighbor pair	Both neighbors outside guerrilla area	Any neighbor pair	Any neighbor pair	Both neighbors outside guerrilla area
	(1)	(2)	(3)	(4)	(5)	(6)
Difference	17.83***	0.0206***	0.0239***	47.71***	-0.0114***	-0.0172***
	(0.0322)	(0.00521)	(0.00525)	(0.201)	(0.00384)	(0.00430)
Neighbor pairs	2,914	2,914	2,515	11,811	11,811	8,742
		Wealth Index (2007)			*Wealth Index (2007)*	
		(7)	(8)		(9)	(10)
Difference	-	0.0149	0.0202**	-	-0.0456***	-0.0468***
	-	(0.00921)	(0.00980)	-	(0.00501)	(0.00583)
Neighbor pairs	-	2,910	2,513	-	11,729	8,733
		Years of Education (2007)			*Years of Education (2007)*	
		(11)	(12)		(13)	(14)
Difference	-	0.0818***	0.0964***	-	-0.0540***	-0.0513***
	-	(0.0307)	(0.0336)	-	(0.0144)	(0.0172)
Neighbor pairs	-	2,911	2,513	-	11,758	8,734

Note: The table presents the placebo test results. The unit of observation in Columns 1 to 3 is the pair of neighboring census tracts conditional on having a difference in altitude between 15 and 20 masl. The unit of observation in Columns 4 and 5 is the pair of neighboring census tracts conditional on having a difference in altitude between 20 and 100 masl. Columns 1, 2, 4, and 5 show the mean difference for all neighbor pairs in the sample. Columns 3 and 6 do the same for pairs in which both neighboring tracts are outside the guerrilla-controlled area. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table D.9. Main Results Restricting the Sample to Tracts without Sudden Altitude Changes with Respect to Their Neighbors

	Night Light Arcsine	Wealth Index	Years of Education
	(2013)	(2007)	(2007)
	(1)	(2)	(3)
Guerrilla control	-0.146***	-0.120***	-0.309**
	(0.0240)	(0.0439)	(0.137)
Observations	2,572	2,561	2,562
Bandwidth (Km)	2.103	2.103	2.103
Dependent mean	3.743	0.118	6.924

Note: The table presents main results without considering segments that have a difference in altitude of more than 100 masl with respect to their neighbors. Column 1 shows the effect of whether a census tract was under guerrilla control on the arcsine of night light luminosity from NOAA. Column 2 does the same but uses as dependent variable a standardized score of household wealth. Column 3 shows as dependent variable years of education of the population older than 18 years. The unit of observation in all columns is the census tract. Information from Columns 2 and 3 was obtained from the Population Census of 2007. Controls not shown include a linear polynomial of the distance to the boundary of guerrilla territory, its interaction with whether the tract was under guerrilla control or not, and up to 400 fixed effects representing the closest evenly spaced break in the guerrilla-controlled boundary. The algorithm of Calonico, Cattaneo and Titiunik (2014) was used to set the bandwidth and the estimates use triangular kernel weights. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table D.10. Effects of Guerrilla Territorial Control on Main Outcomes for Individuals Who Have Always Lived in the Same Place

	Wealth Index	Years of Education	Literacy Rate
	(2007)	(2007)	(2007)
	(1)	(2)	(3)
Guerrilla control	-0.132***	-0.402***	-0.0261***
	(0.0356)	(0.112)	(0.00563)
Observations	3,621	3,633	3,633
Bandwidth (Km)	2.266	2.266	2.266
Dependent mean	-0.0280	6.785	0.817

Note: The table presents main results for the sample of people who have always lived in the same place. The unit of observation in all Columns is the census tract. The information was obtained from the Latin American Public Opinion Project survey (LAPOP). Controls not shown include a linear polynomial of the distance to the boundary of guerrilla territory, its interaction with whether the tract was under guerrilla control or not, and up to 400 fixed effects representing the closest evenly spaced break in the guerrilla-controlled boundary. The algorithm of Calonico, Cattaneo and Titiunik (2014) was used to set the bandwidth and the estimates weight using a triangular kernel. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table D.11. Comparison of Baseline Characteristics Between Census Tracts In and Out the RD-Sample

	In RD-Sample		Out of RD-Sample	
Baseline Characteristics	Mean	Obs	Mean	Obs
Geographic Characteristics (Before 1980)				
Altitude	488.319	3,681	499.802	8,752
Slope	8.624	3,681	6.968	8,751
Ruggedness	12.381	3,681	10.300	8,751
Hydrography	0.320	3,681	0.266	8,754
Infrastructure Characteristics (Before 1980)				
Roads and Railway	0.401	3,681	0.366	8,754
Had a City/Village	0.128	3,681	0.073	8,754
Distance to City/Village	1.024	3,681	1.285	8,754
Distance to Comms	1.199	3,681	1.257	8,754
Comms Density	0.328	3,681	0.334	8,754
Had Land Reform	0.081	3,681	0.112	8,754
Cultivated area	0.665	3,681	0.676	8,754
Had a Parish	0.011	3,681	0.011	8,754
Distance to Parish	4.309	3,681	4.055	8,754
Distance to School	16.980	3,681	21.771	8,754
Population Demographics (Before 1980)				
Total Population	158.233	3,667	161.574	8,735
Population density	1,418.195	3,666	2,060.920	8,735
Years of Education	3.493	3,666	4.227	8,737
Natality Rate	0.174	3,664	0.175	8,730
In-migration (Share)	0.108	3,636	0.147	8,646
Out-migration (Share)	0.006	3,446	0.008	8,272
High Populated area	0.674	3,681	0.722	8,754
Agro-Climatic Potential Yield (1961-1979)				
Z-Potential Yield	-0.012	3,681	0.005	8,754
Bean Potential Yield	4.056	3,669	4.068	8,632
Coffe Potential Yield	1.678	3,669	1.670	8,632
Cotton Potential Yield	0.709	3,669	0.709	8,632
Maize Potential Yield	9.827	3,669	9.990	8,632
Wet Rice Potential Yield	8.714	3,669	8.591	8,632
Sugarcane Potential Yield	6.408	3,669	6.307	8,632
Crops' High Suitability (1961-1990)				
Bean High Suitability	0.858	3,691	0.942	8,736
Coffee High Suitability	0.086	3,691	0.146	8,736
Maize High Suitability	0.980	3,691	0.983	8,736
Sugarcane High Suitability	0.108	3,691	0.194	8,736
Conflict (Before 1981) and Incarcerations (1980-1985)				
Number of War Events	0.037	3,681	0.018	8,754
Number of War Victims	0.155	3,681	0.056	8,754
Number of Incarcerations	0.018	3,681	0.107	8,754

Note: The table compare the mean and number of observations of outcomes in Table 1 between census tracts in the RD-sample and census tracts outside the sample.

Table D.12. Effects of Guerrilla Territorial Control in the Elections of 2014 and 2015

Panel A: 2014 Presidential elections - Guerrillas' Party won				
	Left Voting Share	Right Voting Share	Blank Voting Share	Turnout Share
	(1)	(2)	(3)	(4)
Guerrilla control	-0.0350*	0.0341	0.00387***	0.0166
	(0.0199)	(0.0221)	(0.00131)	(0.0103)
Observations	416	416	416	416
Bandwidth (Km)	2.930	2.930	2.930	2.930
Dependent mean	0.483	0.395	0.00700	0.565
Panel B: 2015 Municipal elections				
Guerrilla control	-0.0152	-0.00723	0.00207**	0.0300
	(0.0278)	(0.0259)	(0.000905)	(0.0219)
Observations	434	434	434	434
Bandwidth (Km)	3.239	3.239	3.239	3.239
Dependent mean	0.411	0.629	0.00700	0.513

Note: The table presents the results of equation 1 for our outcomes related to electoral results. The unit of observation in all Columns is the polling station. Panel A shows the results for the presidential elections of 2014 and panel B does the same for the municipal elections of 2015. The information was obtained from the Salvadoran Electoral Court. Controls not shown include a linear polynomial of the distance to the boundary of guerrilla territory, its interaction with whether the tract was under guerrilla control or not, and up to 400 fixed effects representing the closest evenly spaced break in the guerrilla-controlled boundary. The algorithm of Calonico, Cattaneo and Titiunik (2014) was used to set the bandwidth and the estimates weight using a triangular kernel. Clustered errors at the Canton level are reported in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table D.13. Effects of Guerrilla Territorial Control on Political Attitudes

	Total Sum of Questions per Item/Scope			
	Political Participation	Engagement with Politicians	Non-Democratic Engagement	Trust in Institutions
	(1)	(2)	(3)	(4)
Guerrilla control	1.449	-0.380**	0.181	-4.112***
	(1.098)	(0.184)	(1.183)	(1.403)
Observations	242	248	172	241
Bandwidth (Km)	2.266	2.266	2.266	2.266
Dependent mean	12.960	0.383	4.780	11.720

Note: The table presents the results of equation 1 for our outcomes related to political discontent and distrust. Column 1 shows the political participation scope, which includes questions that measure whether the citizen votes, attends protests, and attends government meetings. Column 2 reports the engagement with politicians' scope, which measures the extent to which citizens contact state authorities and/or bureaucracies to solve issues and attend government/political meetings. Column 3 shows the nondemocratic engagement scope, which measures the extent to which citizens approve the use of alternative or violent means to engage in politics. Column 4 reports the trust in institutions item, which measures the extent to which citizens trust different types of Salvadoran institutions, including the police, the powers of state, and local government. The table uses the simple sum of questions by each item as dependent variables. The unit of observation in all Columns is the census tract. The information was obtained from the Latin American Public Opinion Project survey (LAPOP). Controls not shown include a linear polynomial of the distance to the boundary of guerrilla territory, its interaction with whether the tract was under guerrilla control or not, and up to 400 fixed effects representing the closest evenly spaced break in the guerrilla-controlled boundary. The algorithm of Calonico, Cattaneo and Titiunik (2014) was used to set the bandwidth and the estimates weight using a triangular kernel. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table D.14. Effects of Guerilla Territorial Control on Distance to Police Stations and Incarcerations

	Distance to Police Stations	Incarcerations (1992-1999)
	(1)	(2)
Guerrilla control	0.0198	0.0193
	(0.0614)	(0.0137)
Observations	3,652	3,681
Bandwidth (Km)	2.266	2.266
Dependent mean	1.850	0.0580

Notes: This table shows the effects of guerrilla control on the distance to the closest local police station (Column 1) and the number of incarcerations per segment between 1992 and 1999 (Column 2).

Table D.15. Quality of School Teachers

	Total Enrollment	Total Teachers	Certified Teachers	Certified Teachers with High-School	Teachers with High-School
	(1)	(2)	(3)	(4)	(5)
Guerrilla control	9.764	0.519	0.320	0.350	0.452
	(35.31)	(1.155)	(1.123)	(0.969)	(0.991)
Observations	1,522	1,522	1,522	1,522	1,522
Bandwidth (Km)	2.266	2.266	2.266	2.266	2.266
Dependent mean	386.7	13.42	12.78	11.51	11.88

Notes: This table shows the effects of guerrilla control on school size (Columns 1 and 2) and quality of school teachers (Columns 3–5). Data was obtained from the 2013 teacher census provided by the Ministry of Education. "Total enrollment" and "Total teachers" refer to the total number of students and teachers at the school level, respectively. "Certified teachers" refers to teachers who have received a formal accreditation in pedagogy from the Ministry of Education.

Table D.16. Simpson's Index

	All plots	Comercial plots	Subsistence plots
	(1)	(2)	(3)
Guerrilla control	0.0402*	0.0399†	1.28e-05
	(0.0217)	(0.0267)	(0.0267)
Observations	2,266	1,913	1,963
Bandwidth (Km)	2.266	2.266	2.266
Dependent mean	0.530	0.420	0.460

Note: The table presents the results of equation 1 for the Simpson's Index calculated for all plots, commercial plots, and subsistence plots in the Agrarian Census of 2007. The calculation of the Simpson's Index is $S = 1 - \frac{\sum_i^N a_i^2}{(\sum_i^N a_i)^2}$ where a_i refers to the size of each plot. The unit of observation is the census tract. Controls not shown include a linear polynomial of the distance to the boundary of guerrilla territory, its interaction with whether the tract was under guerrilla control or not, and up to 400 fixed effects representing the closest evenly spaced break in the guerrilla-controlled boundary. The algorithm of Calonico, Cattaneo and Titiunik (2014) was used to set the bandwidth and the estimates use triangular kernel weights. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1, † p<0.15.

Table D.17. Workers by Economic Activity

	Share of Workers by Economic Activity			Share of Agricultural Workers
	Agriculture	Industry	Services	Growing Cereals and Fruits
	(1)	(2)	(3)	(4)
Guerrilla control	0.0465***	-0.0261***	-0.0203**	0.0456***
	(0.00985)	(0.00559)	(0.00878)	(0.00944)
Observations	3,636	3,636	3,636	3,636
Bandwidth (Km)	2.266	2.266	2.266	2.266
Dependent mean	0.194	0.227	0.579	0.160

Note: The table presents the results of equation 1 for the share of workers in each economic activity. The information was calculated from the Census 2007 and using ISIC v4 to classify each occupation. The unit of observation is the census tract. Controls not shown include a linear polynomial of the distance to the boundary of guerrilla territory, its interaction with whether the tract was under guerrilla control or not, and up to 400 fixed effects representing the closest evenly spaced break in the guerrilla-controlled boundary. The estimates use triangular kernel weights. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1, † p<0.15.

Table D.18. Inequality of Income at the Canton Level

	Real Per Capita Income					
	Logarithm	Level	Gini Index	Interquartile Range (p75-p25)	Percentile Range (p90-p10)	Percentile Range (p90-p50)
	(1)	(2)	(3)	(4)	(5)	(6)
Guerrilla control	-0.223***	-39.08**	0.0119	0.0217	1.490	0.0366
	(0.0682)	(15.25)	(0.0163)	(0.193)	(1.256)	(0.284)
Observations	542	542	542	542	542	542
Bandwidth (Km)	3.082	3.082	3.082	3.082	3.082	3.082
Dependent mean	5.330	266.8	0.320	2.450	5.240	2.360

Note: The table presents the results of equation 1 for the real per capita income taken from the Household Surveys (2012 to 2018). Each Column represents a different measure of inequality using the real per capita income. Column 4 report the interquartile range, calculated as the difference of the per capita income in percentile 75 minus the per capita income in percentile 25 for each canton. Column 5 shows the percentile range of the difference between percentile 90 and 10 for each canton. Column 6 reports the percentile range of the difference between percentile 90 and 50 for each canton. The unit of observation is at the canton level. Controls not shown include a linear polynomial of the distance to the boundary of guerrilla territory, its interaction with whether the tract was under guerrilla control or not, and up to 400 fixed effects representing the closest evenly spaced break in the guerrilla-controlled boundary. The algorithm of Calonico, Cattaneo and Titiunik (2014) was used to set the bandwidth and the estimates use triangular kernel weights. Robust standard errors in parentheses.

Table D.19. Inequality of the Wealth Index at the Census Tract Level

	Wealth Index			
	Gini Index	Interquartile Range (p75-p25)	Percentile Range (p90-p10)	Percentile Range (p90-p50)
	(1)	(2)	(3)	(4)
Guerrilla control	-0.00345	66.52	82.59	0.0679
	(0.0104)	(67.52)	(68.28)	(0.116)
Observations	2,975	2,975	2,975	2,975
Bandwidth (Km)	2.266	2.266	2.266	2.266
Dependent mean	0.278	3.520	47.23	1.981

Note: The table presents the results of equation 1 for the wealth index constructed from Census of 2007. Each Column represents a different measure of inequality using the real per capita income. Column 2 report the interquartile range, calculated as the difference of the wealth index in percentile 75 minus the wealth index in percentile 25 for each census tract. Column 3 shows the percentile range of the difference between percentile 90 and 10 for each census tract. Column 4 reports the percentile range of the difference between percentile 90 and 50 for each census tract. The unit of observation is at the census tract level. Controls not shown include a linear polynomial of the distance to the boundary of guerrilla territory, its interaction with whether the tract was under guerrilla control or not, and up to 400 fixed effects representing the closest evenly spaced break in the guerrilla-controlled boundary. The estimates use triangular kernel weights. Robust standard errors in parentheses.

Table D.20. Cooperatives

	Has a cooperative	Producer belongs to a cooperative	Commercial producer belongs to cooperative	Subsistence producer belongs to cooperative	Producer belongs to association
	(1)	(2)	(3)	(4)	(5)
Guerrilla control	0.00545	0.00226	0.00879	-0.00301	-0.00480
	(0.00354)	(0.00960)	(0.0158)	(0.00429)	(0.00579)
Observations	929	2,400	2,400	2,400	2,400
Bandwidth (Km)	2.266	2.266	2.266	2.266	2.266
Dependent mean	0.00900	0.0520	0.0750	0.00800	0.0110

Note: The table presents the results of equation 1 for outcomes related to cooperatives. Information was taken from the Agrarian Census of 2007. The unit of observation is at the census tract level. Controls not shown include a linear polynomial of the distance to the boundary of guerrilla territory, its interaction with whether the tract was under guerrilla control or not, and up to 400 fixed effects representing the closest evenly spaced break in the guerrilla-controlled boundary. The estimates use triangular kernel weights. Robust standard errors in parentheses.

Table D.21. Effects of Guerrilla Control on Migration Outcomes for the Highly Educated Population

	International Migrants					Always Lived in	Same Location	People who Arrived	Years since
	During Control	At any time	Years since	Households who Received	Received Remittance from	same Location	as the Mother	During Control	Arrival
	(Share)	(Share)	departure	Remittances (Share)	War Migrant (Share)	(Share)	(Share)	(Share)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Guerrilla control	0.00151	0.00343	0.226	-0.00573	-0.00112	-0.00376	-0.00713	-0.00491	-0.469
	(0.00452)	(0.00927)	(0.540)	(0.00463)	(0.00416)	(0.0127)	(0.0132)	(0.00535)	(0.531)
Observations	3,325	3,325	1,907	3,636	3,325	3,602	3,602	3,602	3,441
Bandwidth (Km)	2.266	2.266	2.266	2.266	2.266	2.266	2.266	2.266	2.266
Dependent mean	0.0200	0.100	6.220	0.110	0.0100	0.730	0.700	0.0800	17.68

Note: The table presents the results of equation 1 for our outcomes related to migration. Columns 1 to 5 focus on outcomes for international migrants. All information was obtained from the Population Census of 2007. The unit of observation in all Columns is the census tract. Controls not shown include a linear polynomial of the distance to the boundary of guerrilla territory, its interaction with whether the tract was under guerrilla control or not, and up to 400 fixed effects representing the closest evenly spaced break in the guerrilla-controlled boundary. The algorithm of Calonico, Cattaneo and Titiunik (2014) was used to set the bandwidth and the estimates use triangular kernel weights. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table D.22. Share of Individuals who Work in the Same Place as their Residence

	Work in the Same Place as Residence
	(Share)
	(1)
Guerrilla control	0.00333
	(0.00320)
Observations	3,647
Bandwidth (Km)	2.271
Dependent mean	0.987

Note: The table presents the results of equation 1 for individuals who work in the same place as their residence. All information was obtained from the Population Census of 2007. The unit of observation in all Columns is the census tract. Controls not shown include a linear polynomial of the distance to the boundary of guerrilla territory, its interaction with whether the tract was under guerrilla control or not, and up to 400 fixed effects representing the closest evenly spaced break in the guerrilla-controlled boundary. The algorithm of Calonico, Cattaneo and Titiunik (2014) was used to set the bandwidth and the estimates use triangular kernel weights. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table D.23. Heterogeneity by Baseline Distances to Road Network (1980) and Nearest City (1945)

Panel A: Heterogeneity by Distance to Road Network in 1980			
	Arcsine	Wealth Index	Years of Education
	(1)	(2)	(3)
Guerrilla control	-0.177***	-0.0953**	-0.272**
	(0.0272)	(0.0399)	(0.125)
Control × Distance to Road	0.00503	-0.0267	0.0410
	(0.0212)	(0.0230)	(0.0737)
Dependent mean	3.536	-0.0160	6.573
Observations	3,652	3,630	3,637
Bandwidth (Km)	2.266	2.266	2.266
Panel B: Heterogeneity by Distance to Nearest City in 1945			
	Arcsine	Wealth Index	Years of Education
	(1)	(2)	(3)
Guerrilla control	-0.225***	-0.109***	-0.295**
	(0.0307)	(0.0412)	(0.116)
Control × Distance to City	0.0375**	-0.00881	0.0187
	(0.0149)	(0.0223)	(0.0642)
Dependent mean	3.536	-0.0160	6.573
Observations	3,652	3,630	3,637
Bandwidth (Km)	2.266	2.266	2.266

Note: The table presents the results from the heterogeneity analysis at baseline for the main outcomes. Panel A shows how the results vary by distance to a road network in 1980. Panel B presents heterogeneity of results by distance to the nearest city in 1945. Controls not shown include a linear polynomial of the distance to the boundary of guerrilla territory, its interaction with whether the tract was under guerrilla control or not, and up to 400 fixed effects representing the closest evenly spaced break in the guerrilla-controlled boundary. The algorithm of Calonico, Cattaneo and Titiunik (2014) was used to set the bandwidth and the estimates weight using a triangular kernel. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table D.24. Effects of Guerrilla Territorial Control on Crimes during the War Period

	Total War Events	Total War Victims	Has a War Event	Has War Victims
	(1)	(2)	(3)	(4)
Guerrilla control	0.00660	-0.258	0.00180	0.00322
	(0.0894)	(0.490)	(0.00264)	(0.00287)
Observations	3,652	3,652	3,652	3,652
Bandwidth (Km)	2.266	2.266	2.266	2.266
Dependent mean	0.0410	0.2130	0.00100	0.00200

Note: The table presents the results of estimating equation 1 for our outcomes related to crimes committed in the war period. Columns 1 and 3 report the total of events related to war and its probability, respectively. A war event can be a massacre, combat, bombing, or any other war event that caused victims from war. Columns 2 and 4 show the total number of victims and the probability of the census tract to have war victims. The unit of observation in all Columns is the canton level. The information was recovered from the registry of victims. Controls not shown include a linear polynomial of the distance to the boundary of guerrilla territory, its interaction with whether the tract was under guerrilla control or not, and up to 400 fixed effects representing the closest evenly spaced break in the guerrilla-controlled boundary. The algorithm of Calonico, Cattaneo and Titiunik (2014) was used to set the bandwidth and the estimates weight using a triangular kernel. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table D.25. Effects of Guerrilla Control on Homicide and Victimization Rates

	Homicides	Victim of Any Crime	Victim of Gang Extorsion
	(2017)	(2004-2016)	(2004-2016)
	(1)	(2)	(3)
Guerrilla control	-0.0110	-0.210***	-0.193***
	(0.0562)	(0.0552)	(0.0637)
Observations	3,652	94	94
Bandwidth (Km)	2.266	2.266	2.266
Dependent mean	0.314	0.688	0.0420

Note: The table presents the results of equation 1 for our outcomes related to current crime. Column 1 shows the number of homicides reported to police for each census tract in 2017. Column 2 shows the share of people within a census tract who reported being a victim of any type of crime in the LAPOP survey. Column 3 shows the share of people within a census tract who reported being a victim of extortion in the LAPOP survey. The unit of observation in all Columns is the census tract. Controls not shown include a linear polynomial of the distance to the boundary of guerrilla territory, its interaction with whether the tract was under guerrilla control or not, and up to 400 fixed effects representing the closest evenly spaced break in the guerrilla-controlled boundary. We use the algorithm of Calonico, Cattaneo and Titiunik (2014) to set the bandwidth and weight using a triangular kernel. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table D.26. Effects of Guerrilla Territorial Control on Expropriation, Invasion, and Non-Democratic Believes

	Invading Property	Occupying Buildings	Overturn the Government	Taking Law in Own Hands	Non-Democratic Engagement (sum)
	(1)	(2)	(3)	(4)	(5)
Guerrilla control	-0.110*	0.0616	-0.00269	-0.0734	0.804
	(0.0605)	(0.0815)	(0.0721)	(0.136)	(1.922)
Observations	248	175	248	245	172
Bandwidth (Km)	2.266	2.266	2.266	2.266	2.266
Dependent mean	0.0580	0.109	0.0740	0.245	10.69

Note: The table presents the results of estimating equation 1 for our outcomes related to believes regarding how acceptable it is to engage in certain actions against private property or the government. These are measured in a 1-10 scale, thus, we assume that individuals support these behaviors whenever their agreement level is above 5. Columns 1 to 4 show the share of individuals who think that invading property, occupying buildings, overthrowing the government or taking law in their own hands are acceptable. Column 5 shows the effects of guerilla control on an index comprised of the sum of the raw scores . The information was recovered from the LAPOP Surveys. Controls not shown include a linear polynomial of the distance to the boundary of guerrilla territory, its interaction with whether the tract was under guerrilla control or not, and up to 400 fixed effects representing the closest evenly spaced break in the guerrilla-controlled boundary. The algorithm of Calonico, Cattaneo and Titiunik (2014) was used to set the bandwidth and the estimates weight using a triangular kernel. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

E Qualitative Study

This appendix provides further information on the methods used in the qualitative component of the study and their main results.

E.A Sample definition and recruitment of participants

The qualitative study aims to complement the quantitative results by gathering information to understand the dynamics that occurred within the territory controlled by the Salvadoran guerrilla, the stability of the borders, changes in the economic, and the social or political structure caused by the presence of guerrillas in the territory, among other potential mechanisms that can drive the main impacts documented in this study.

The target groups were: (i) political-military leaders of the guerrilla, which designed and implemented the military strategy and policies with a broad knowledge of the grassroots guerrilla's social movement; (ii) religious and community leaders with depth knowledge of the armed conflict; (iii) citizens who lived in the areas controlled by the guerrillas during the civil war; and (iv) former guerrilla members who were prominent in the operational-military area.

Given the diversity of these groups, the information was collected using in-depth interviews and focus groups discussions. Groups (i) and (ii) were invited to join individual in-depth interviews and groups (iii) and (iv) were invited to participate in focus group discussions. A total of four focus groups and 8 in-depth interviews were conducted in June 2022. Focus groups were conducted in 3 municipalities of El Salvador: two focus groups in Chalatenango and Guazapa (one in each municipality), and two groups in Morazan. These municipalities were selected based on the intensity of guerrilla groups presence during the civil war.[41]

E.B Instruments

Three instruments were developed: (i) for in-depth interviews (for religious or community leaders and political-military leaders); (ii) for focus group discussions of citizens who lived in guerrilla-controlled areas; and (iii) for focus group discussions with former guerrilla members.

All three instruments include two components. First, questions related to the economic and social dynamics of guerrilla-controlled areas before and during the war. For example, the questions inquire about the main local economic activity before the arrival of the specific guerrilla group in

[41] Since Morazan was a crucial department for the FMLN during the Civil War, two focus groups were conducted there.

charge of the area or about the form of government in place during the conflict. Second, questions on participants' perceptions of changes in social and economic factors after the end of the armed conflict. For example, whether they perceived that the presence of the guerrillas affected the social and community ties in the area now in the present, among other questions.

On the other hand, instruments (i) and (ii) also include questions related to the characterization of the geographic space controlled by the guerrillas. For example, in this section the instruments inquire whether and how borders of the controlled territories changed during the conflict, when these borders became more stable, or reasons for guerrilla's settling in the controlled areas, among others.

E.C Approach

For the qualitative study, a narrative interviewing technique was used. It consisted of a semi-structured approach to interviewing that uses open-ended questions to allow for more variation in responses. These interviews and focus groups create a natural in-depth discussion that allows to obtain specific details of the different components included in the instruments.

The interviews were between 60 to 70 minutes each and the focus group discussions lasted up to 1 hour. A local consultant with expertise on qualitative research and knowledge of the guerrillas' movement in El Salvador conducted the interviews. She was responsible for recruiting participants who met the eligibility criteria, obtaining their informed consent, and conducting the interviews and producing their transcripts. For all the interviews, special care was taken to preserve the participants' anonymity and freedom to consent. Indeed, the strategy for maintaining trust and safety was to be extremely clear to all participants that the purpose of the survey was only academic. Only audio of the conversations was recorded, and no photos or video were allowed.

E.D Main results

The main messages of the qualitative analysis are summarized below.

Establishment of self-governance institutions to promote social capital

Our interviews with FMLN commanders show that the consolidation of self-governance institutions in controlled areas was a key strategy of the guerrilla. From 1982 onwards, the state disappears in its traditional institutional framework. For example, municipal authorities ceased to function, local judges ceased to provide their services, etc. In the words of one the FMLN military commanders: 'Mayors, judges, security posts, everything disappears, (...), practically the

state disappears, and the state was us [the FMLN]' (Joaquín Villalobos, FMLN Military Commander, interview conducted on March 23, 2022). As a substitute for power, popular power emerges; that is, power determined by the people. When asked about FMLN-controlled areas, an influential religious leaders that lived in these areas says 'the project of structural change in control areas was always present. (...). Starting in 1982-1983, these places become controlled territories, the institutions disappear, and the popular powers emerge (...).' (Religious leader, interview conducted on March 25, 2022). In these new institutions, the key principle was the organization of local communities: 'the individual that lives in a controlled area has a clear consciousness that what prevails in these areas are values. (...) what was consolidated was an idea of social co-responsibility. (Religious leader, interview conducted on March 25, 2022). This strategy was not a by-product of the elimination of state authorities, but rather a deliberate plan to promote the autonomy of peasants from traditional government institutions. The change in military strategy- from a regular to an irregular war- that took place around 1984 was associated with the conviction that the civilian population had their right to live their own lives. Marisol Galindo, an FMLN commander explains: the locals 'had a right to be on their own land, the right to harvest, to not be treated as armed population,(...), that is, we [the guerrilla] made a clear distinction between guerrilla members and civilian population. (...). We wanted to rescue organizational forms of what today we call the Civil Society (...).' (Marisol Galindo, FMLN military commander, interview conducted January 28, 2022). When the state disappeared, governance was in charge of these informal institutions, like the 'poder de doble cara' (or double-faced power), which was the 'self-governance of civilians, to solve their own needs (...), and it had to be done in confrontation with the state' (Joaquín Villalobos, FMLN Military Commander, interview conducted on March 23, 2022). This organization of citizens in the communities made it possible to guarantee social cohesion or the "*tejido social.*"

Our interviews uncovered powerful evidence of the persistence of the social capital generated by these institutions. In several instances, different individuals reflected upon the fact that, although these areas seem to be less developed, they are extremely secure. When the interviewer noted that the zones with guerrilla presence don't have any gang presence, one of the former combatants said: 'Yes [they are the most secure], and where judges die of boredom.' She later added, 'I relate this to the level of organization that the community achieved. I am going to give you an example; en San José de las Flores there is a river and thermal waters, and there is a little hotel. If you go there and say you want to stay there for 10 days, they will ask you, who are you? Who sent

you? Once a fugitive gangster (marero) came who believed he could stay. It is impossible. They investigate who sent you, your references.' (Lorena G, FMLN military commander, interviewed on January 28, 2022). The same point was made in other interviews, where an excombatant said 'the fact that the maras (gangs) are barely present in these areas reflects that the self-organization of the population worked.' (Joaquín Villalobos, FMLN Military Commander, interview conducted on March 23, 2022)

The organization of the communities was promoted by local leadership groups, such as the Organization of the Comadres and the Sisters of the Assumption. One of the paradigmatic civil society organizations that developed and still exists today is the *Patronato para el Desarrollo de las Comunidades de Morazan y el Norte de San Miguel (PADECOMSM)*. This organization is based on a framework of participatory democracy and self-management, with local, zonal, and regional councils that identify problems and devise solutions. The PADECOMSM emerged as a consequence of autonomous space that was granted to civilians in controlled areas.

Distrust towards the state

Our interviews with locals show that state distrust was pervasive among peasants and lower-income individuals during the civil conflict, and not necessarily circumscribed to guerrilla-controlled areas. This is frequently attributed to the fact that the state was entwined with economic elites, which used highly repressive methods to discipline the workforce. As a result, peasants were usually landless, and endured hard working conditions. When talking about the economic and social conditions in these areas, one military commanders says: 'In all those areas there were poor peasants and landowners, this was the predominant characteristic, landless peasants and big hacienda owners. (..) an additional issue was that it was problematic [for peasants to work the land, given that rent prices were impossible to afford, I mean, they worked to pay rent and what was left was useless, don't even think about luxuries like water or electricity, that did not exist, that was a luxury' (Lorena P, FMLN military commander, interview conducted on January 28). Participants described that, under these conditions, the need to reorganize themselves and create self-governing institutions in controlled areas was urgent, especially to substitute the traditional model where elites and the state coerced labor, and where basic services were lacking. The absence of the state during the territorial control helped to reinforce this view, as the state could not provide any public service or have physical presence during the guerrilla occupation. Indeed, local leaders from the new institutions or international organizations end up providing public ser-

vices to the communities, including education and health. As a result, the distrust to the state was more likely to be greater in the controlled territory relative to other non-controlled areas.

Migration decisions

Participants reported some reasons for not migrating from the controlled areas. The interviews reflect there was a sense of rootedness in the communities and attachment to their limited economic resources. One guerrilla commander says 'there were many families, that is why some schools for children emerge [in the controlled zones], because many of these families wanted to stay. (...) What the stories from those years reflect is that there was an important population that did not want to leave' (Marisol Galindo, FMLN military commander, interview conducted January 28, 2022).

Stability of boundaries Ex-guerrilla leaders confirm that the boundaries between the controlled and non-controlled territories were stable after 1984-85. A potential explanation is that around 1984 the guerrilla changed their military strategy. The regular war against the Salvadoran state had reached a stalemate, and the FMLN decides to switch to an irregular strategy, based on the control of liberated zones. Joaquín Villalobos, one of the most important FMLN military commanders also mentions that the State made a crucial mistake underestimating their capacity and practically left them territory: 'after they left us our territory, we moved to a superior level of organization and consolidation of power (...).' (Joaquín Villalobos, FMLN Military Commander, interview conducted on March 23, 2022). All military commanders interviewed agree that after 1984 the boundaries of the controlled areas were extremely stable, and confirmed that the map we use to identify control areas was the map used and approved by all parties during the peace talks sponsored by the UN.